

# ASG-DataManager™ Example Book

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<b>Denmark</b>	00.800.9932.5536	<b>South Korea</b>	001.800.9932.5536
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# DATAMANAGER

## EXAMPLE BOOK



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**Notice Number**  
**1**

Date of issue: 10 October 1983.

Number of pages in this issue: 2.

This notice relates to DATAMANAGER releases 4.1.0, 4.1.1 and 5.0.

If there are any queries regarding this notice, please contact your local MSP Product Support office at the address listed on the card at the front of your MANAGER Products ring binder.

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**Item 1**

**Development Intentions**

MSP intends, in 1984, to replace the:

DATAMANAGER Example Book

by a new publication:

MANAGER Products Demonstration and Training Guide.

This publication will contain examples and demonstrations of the use of DESIGNMANAGER, SOURCEMANAGER and CONTROLMANAGER as well as DATAMANAGER.

The Demonstration and Training Guide will be based on a new dictionary, called the DEMO Dictionary, which will replace the present Example Dictionary. The DEMO Dictionary will be supplied to all MANAGER Products users, just as the Example Dictionary is now supplied to all DATAMANAGER users.

**Item 2**

**DATAMANAGER Release 5.0 Deliverables**

Because of the extensive scope of the DEMO Dictionary project, as an interim measure you will receive with your DATAMANAGER Release 5.0 a Release 5.0 compatible Example Dictionary that illustrates Release 4.1 features. When the DEMO Dictionary and the Demonstration and Training Guide become available they will illustrate all MANAGER Products at the then current Release levels.

**Item 3**

**References in DATAMANAGER Release 5.0 and CONTROLMANAGER Release 1.0 Documentation**

DATAMANAGER Release 5.0 and CONTROLMANAGER Release 1.0 documentation will contain references to the MANAGER Products Demonstration and Training Guide and to the DEMO Dictionary. Until the Demonstration and Training Guide and the DEMO Dictionary are distributed to users, any such references should be interpreted as referring to the DATAMANAGER Example Book and to the Example Dictionary respectively.

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## PREFACE

This manual is one of a series describing DATAMANAGER, the data dictionary software developed by MSP for use on IBM System/360, System/370, 30xx and 4300 series and compatible machines. The manual describes the DATAMANAGER Example Data Dictionary, its purposes and use.

This edition, for Releases 4.0 and 4.1 of DATAMANAGER, supersedes the Fifth Edition. It is assumed that the reader has a knowledge of DATAMANAGER to the extent covered by the Fact Book. Other documents necessary for a full understanding of parts of this publication are mentioned in section 1.4.

Technical manuals in the DATAMANAGER series are separate Installation manuals for OS and DOS Environments; the User's Guide; the Messages Manual, in which all diagnostic messages that can be output by DATAMANAGER are listed; the Controller's Manual, circulation of which is restricted to those responsible for the administration of a data dictionary; and a separate manual for each of the separate DATAMANAGER Facilities (Audit and Security, Automation of Set Up, Source Language Generation, User Defined Syntax, various interface facilities, etc.). Other training manuals in the DATAMANAGER series include How To Get Started, and a set of Visuals for use in presentations and training courses.

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1.1

THE DATAMANAGER EXAMPLE DICTIONARY

The DATAMANAGER example dictionary contains a simulated personnel system using conventional files and on-line access, and is provided by MSP to:

- promote client evaluation and understanding of the DATAMANAGER data dictionary approach to data management, by means of actual trial or demonstration
- exemplify, on a small scale, some of the many DATAMANAGER approaches and solutions to data management problems; for example, in the adoption of naming standards and data security protocols
- demonstrate the ability of DATAMANAGER to handle User Defined Syntax and to interface with IMS (DL/I), ADABAS, IDMS, TOTAL and SYSTEM 2000/80 database management systems and with the MARK IV file management system.

Access to the DATAMANAGER example dictionary is available at organised DATAMANAGER presentations and/or from the DATAMANAGER installation tape for use during acceptance evaluation.

Access to the DATAMANAGER example dictionary at an organised presentation will be provided by your local Product Support Office. How to set up the dictionary from the DATAMANAGER installation tape is described in the Controller's Manual, section 5.4.

1.2

THE DATAMANAGER EXAMPLE BOOK

The DATAMANAGER Example Book is a hard copy record of the personnel system defined in the example dictionary and of suggested examples and demonstrations using it.

Chapter 2 presents a description of the personnel system itself and of the naming conventions and user access protocols implemented.

1.2  
(continued)

Chapter 3 shows, in a series of seven demonstrations, basic DATAMANAGER interrogation, documentation and manipulation, together with source language and record layout generation, security, status, and user defined syntax features applied to the conventional file personnel system defined in the example dictionary.

Chapters 4 to 9 show, by way of simple demonstrations only, the DATAMANAGER interfaces between the data dictionary and TOTAL, ADABAS, IMS (DL/I), SYSTEM 2000/80, IDMS and MARK IV.

Chapter 10 shows use of the DATAMANAGER User Interface facility, to produce a software development summary from the dictionary.

Chapter 11 shows a demonstration of newly released features of DATAMANAGER, and is intended for experienced DATAMANAGER users. The demonstration illustrates features introduced in releases 4.0 and 4.1 that are new to users of release 3.0.

Chapters 3 to 11 have been set directly from a DATAMANAGER print file (with some compaction), using MSP's TEXTMANAGER.

If you look at the demonstration at the start of Chapter 3 (for example), you will see the demonstration number (X200) in the top left hand corner, followed by a brief descriptive narrative on the purpose of the demonstration in the right hand portion of the heading box, and the commands which are to be demonstrated in the left hand portion of the box. The DATAMANAGER output of the demonstration immediately follows the box, with DATAMANAGER input lines shown in bold print to aid clarity. Manually added annotation is shown in italics.

An index of demonstrated commands appears at the back of this manual. In addition, Figure 1.1 on page 1-4 shows a quick-guide index to demonstrated commands or command sequences of interest in specific functional areas; for example, the production of different types of reports from the dictionary to meet the requirements of management, auditor or analyst.

1.3

SUPPLEMENTARY MATERIAL

A Controller's Supplement to the DATAMANAGER Example Book is available on a restricted basis. It shows the restricted commands that were used in the creation of the DATAMANAGER example dictionary, and exemplifies use of restricted commands in dictionary administration and maintenance.

## HOW TO USE THE EXAMPLE DICTIONARY/EXAMPLE BOOK PACKAGE

The DATAMANAGER example dictionary and Example Book form a package which relates to other DATAMANAGER documentation and can be used in a variety of ways:

- Preliminary Evaluation. To minimise your time and effort in acquainting yourself with DATAMANAGER during a preliminary evaluation, use Chapters 2 and 3 of the DATAMANAGER Example Book to gain an appreciation of the benefits of using DATAMANAGER for the personnel system defined. Your study of Chapter 3 will be helped if you relate the commands demonstrated to the DATAMANAGER Command Syntax card. This will enable you to see how the commands shown fit in with the overall command syntax. You should find it simple to formulate your own commands and, at a DATAMANAGER presentation, to try them. (Related documentation includes the DATAMANAGER Fact Book, Command Syntax card, Definition Syntax card and the DATAMANAGER User's Guide.)
- Detailed Evaluation. At the detailed evaluation stage you will be studying the DATAMANAGER technical reference documentation relevant to your environment. The DATAMANAGER example dictionary can be a valuable start to an evaluation project normally carried out during acceptance testing. Details of installing DATAMANAGER and the example dictionary are contained in the Installation in OS Environments and Installation in DOS Environments manuals. (Related documentation includes How To Get Started, the DATAMANAGER User's Guide, the Controller's Manual, the Controller's Supplement to the Example Book and the appropriate DATAMANAGER facility manuals.)
- DATAMANAGER Demonstration. The example dictionary is an excellent ready-made tool for DATAMANAGER demonstrations. The command sequences shown in this manual may be used as a basis for a customised demonstration, and may be added to or re-sequenced as required. Three empty test statuses (TEST-1, TEST-2 and TEST-3) are provided in the dictionary for new definitions and structures to be incorporated for the purposes of the demonstration, without affecting the initial compatibility between the example dictionary and Example Book. (Related documentation includes the Command Syntax card and Definition Syntax Card.)

Figure 1.1 Quick-guide Index

FUNCTIONAL AREA			COMMAND REFERENCE
			DEMONSTRATIONS
MANAGER	Report	Formatted reports generated from the dictionary enable systems documentation to be produced on demand at any time during design, development or production.	REPORT P1-ERS, 3-2 REPORT P2-EHS, 3-4 X200, X210, X360
	Glossary	Selectively produced glossaries enable the scope and content of automatically generated documentation to be controlled.	GLOSSARY JOBS, 3-55 GLOSSARY REPORTS, 3-55 X200, X210, X360
	Query	DATAMANAGER's command/query language is plain English. Interrogation is straightforward and quick.	WHICH JOBS..., 3-55 WHAT IS..., 3-23 X200, X210, X360
AUDITOR	Documentation	Fully formatted and glossaried reports provide the auditor with standardised documentation. Development history can be followed.	GLOSSARY PROGRAMS..., 3-6 REPORT P1V01, 3-7 X200, X210
	Interrogation	Network interrogation at all levels is provided by DATAMANAGER to ascertain if all ramifications of a change were followed through.	WHICH GROUPS..., 3-10 WHAT CONSTITUTES..., 3-46 X200, X210
	Security	How secure is the system? How secure is the dictionary? DATAMANAGER allows user access protocols to be defined by the Controller.	AUTHORITY "AUDITOR", 3-41 MODIFY..., 3-41 X300
ANALYST	Documentation	System design and development through the dictionary enables up-to-date documentation to be obtained as a by-product.	GLOSSARY... 3-14 KEEP WHAT..., 3-21 X200, X210, X360
	Development	The DATAMANAGER status facility is a powerful tool in system maintenance enabling production and test system to coexist.	STATUS "TEST", 3-45 LIST NEW ITEMS, 3-45 X230, X320
	Generation	Record layout and source language generation in COBOL, PL/I and Assembler are direct benefits.	PRODUCE COBOL..., 3-36 PRODUCE PL/I..., 3-37 X250, X320
END USER	Standardisation	DATAMANAGER provides a work bench for standardising data definitions throughout the organisation, whether EDP-related or not.	PRINT EMPLOYEE-CODE, 3-10 BULK PRINT..., 3-29 X200, X210
	Cross-reference	Data items, files and procedures may be known by different names. DATAMANAGER allows all names to be recorded, and cross-reference lists produced.	GLOSSARY FILES..., 3-8 GLOSSARY ITEMS..., 3-24 X200, X210
	Lists	DATAMANAGER enables lists to be generated on many different selections - member type, category, name, kept-data ...	LIST CATALOGS, 3-20 LIST ALIASES, 3-23 X200, X210, X360

2.1 SYSTEMS P1-ERS AND P2-EHS

There are two conventional file systems defined in the DATAMANAGER example dictionary:

- Employee Records System (P1-ERS), maintains records of staff working for an organisation
- Employee History System (P2-EHS), maintains a history file which stores employee transactions.

The systems are defined in status CONV of the dictionary, and are described in Figures 2.1 to 2.3. The naming conventions are shown in Figure 2.4.

Demonstration of DATAMANAGER interrogation and documentation of the systems are shown in demonstration X200 and X210, and dictionary manipulation in demonstration X230.

The generation of COBOL, PL/I, and Assembler source language from dictionary definitions is demonstrated in X250, and the generation of record layouts in X250 and X320.

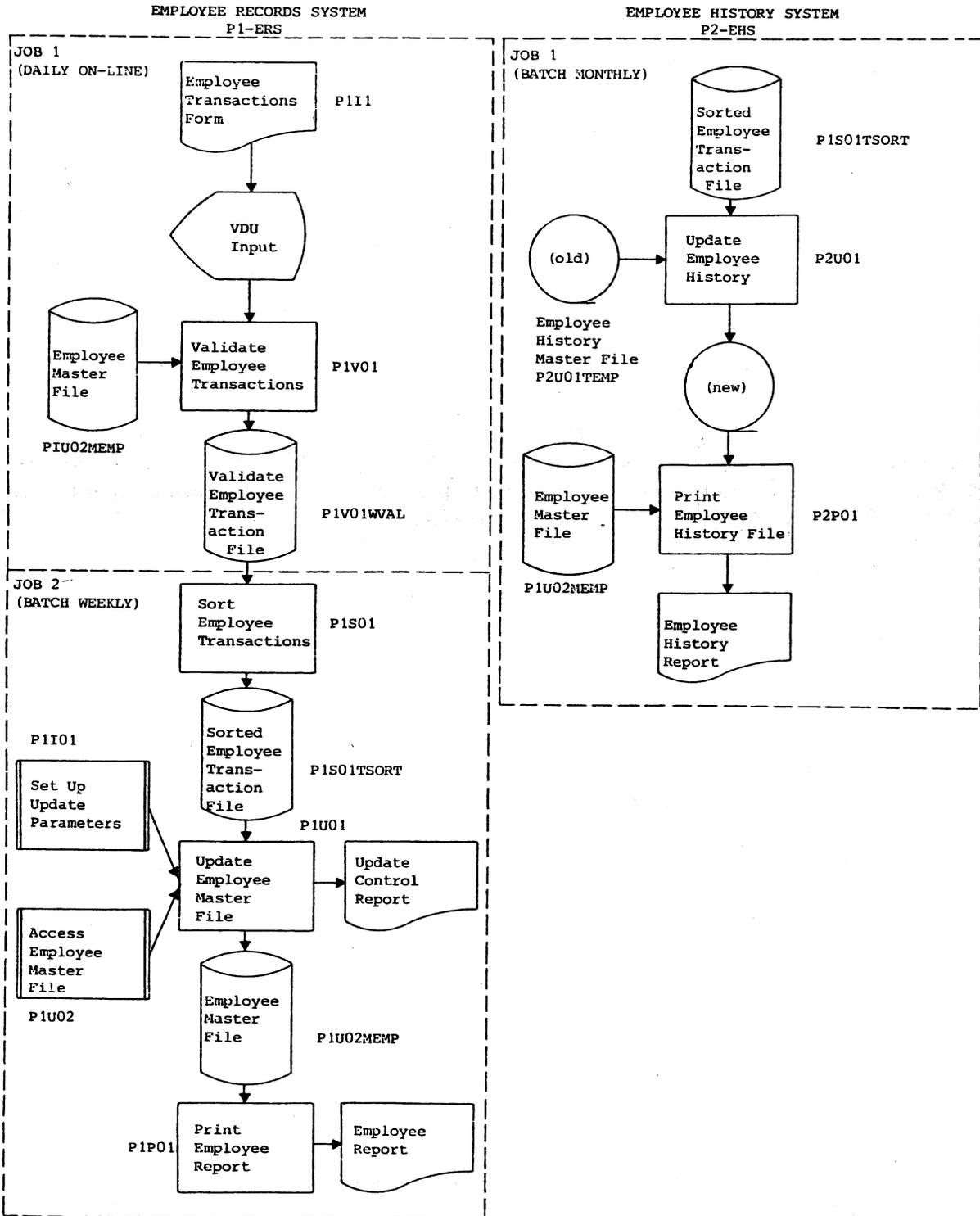
2.2 SECURITY AND USERS

Once a DATAMANAGER data dictionary has been opened, no further access is possible until a valid user authority password is entered.

For the DATAMANAGER example dictionary, the following users and passwords are defined:

User	Password
Analyst	ANALYST
Auditor	AUDITOR
End User	END-USER
Personnel Manager	P-MNGR
Programmer	PROG

Figure 2.1  
PERSONNEL SYSTEMS FLOW CHARTS



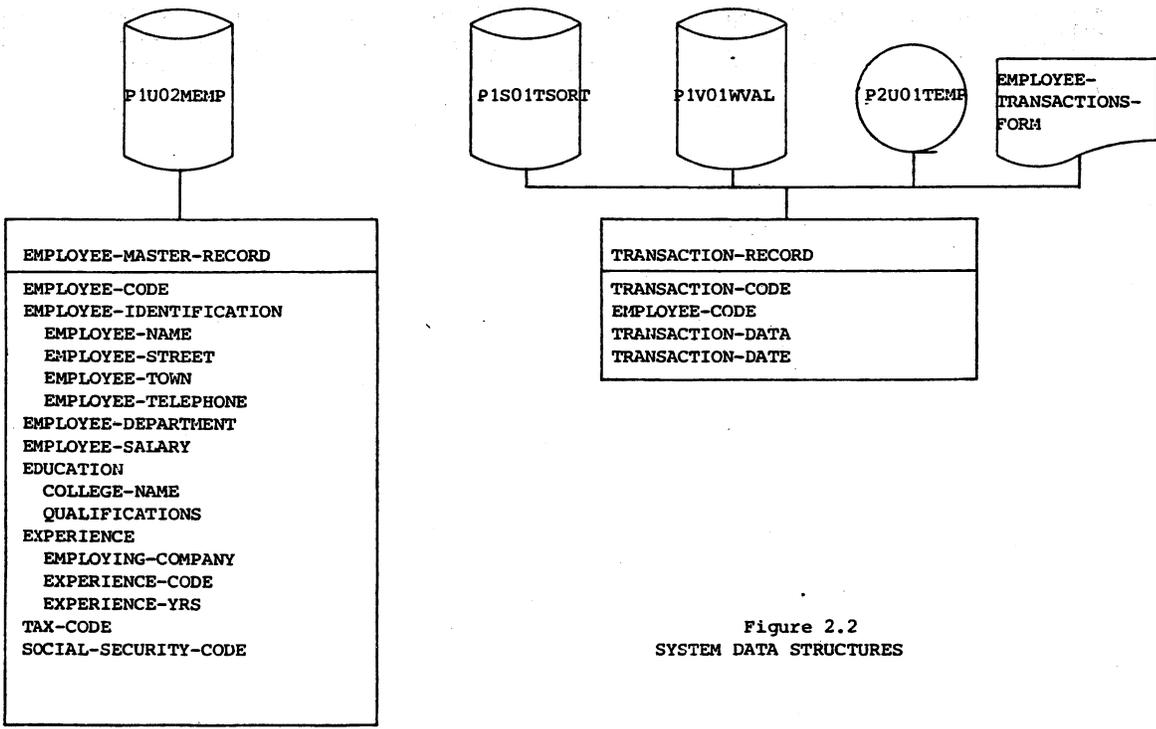
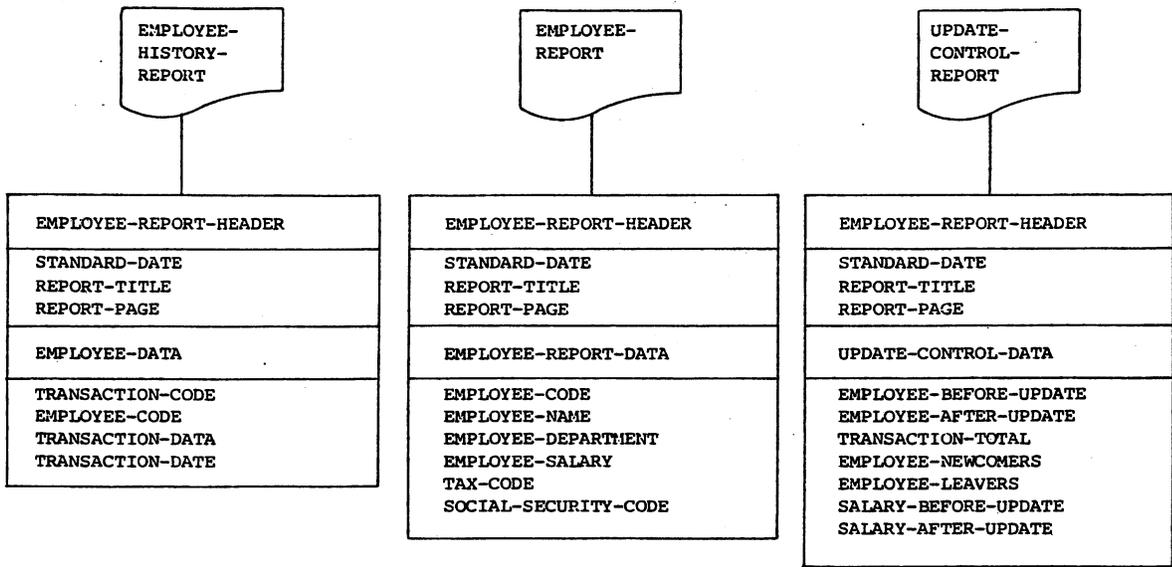
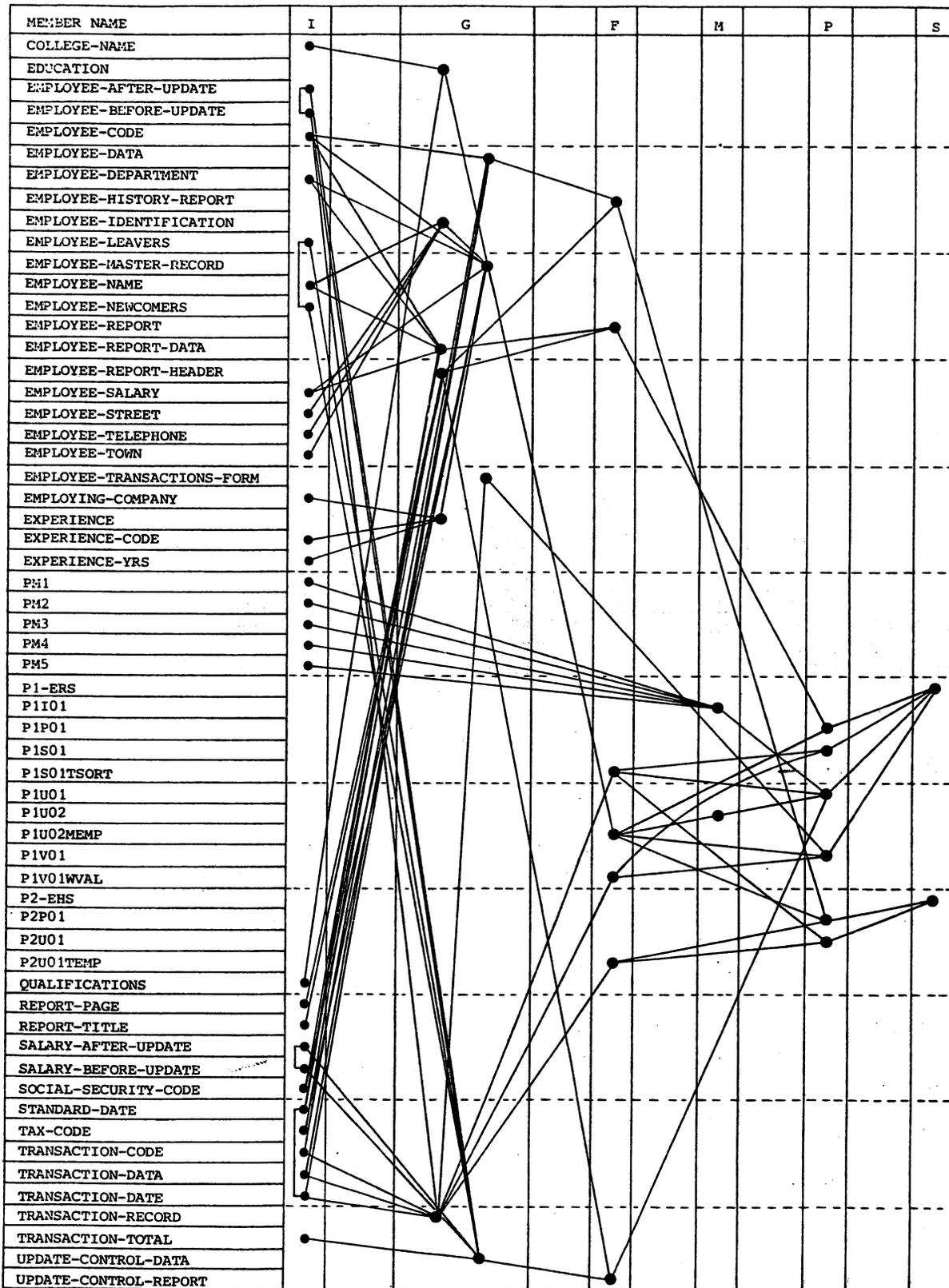


Figure 2.2  
SYSTEM DATA STRUCTURES

Figure 2.3  
SYSTEM RELATIONSHIP NETWORK



I - Item G - Group F - File M - Module P - Program S - System

Figure 2.4  
PERSONNEL SYSTEM NAMING CONVENTIONS

ELEMENT	SYSTEM	PROGRAM/MODULE	FILE	OUTPUT-REPORT	INPUT-FORM	RECORD	GROUP/ITEM
MEMBER TYPE	SYSTEM	PROGRAM/MODULE	FILE	FILE (Reported-as)	GROUP (Entered-as)	GROUP	GROUP/ITEM
FULL-NAME:							
MEMBER NAME	Pn-xxx Example: P1-ERS	Pn { V U P S } mm V - validation U - update P - print S - sort Example: P1V01	Pn { U mm T } xxxxxx { S } { W } M - master T - transactions W - work file Example: P1U02MEMP	name-REPORT Example: EMPLOYEE-REPORT	name-FORM Example: EMPLOYEE-TRANSACTIONS-FORM	name-RECORD Example: EMPLOYEE-MASTER-RECORD	name Example: EMPLOYEE-CODE
CODED-NAME:							
ALIAS	Example: EMPLOYEE-RECORDS-SYSTEM	Example: VALIDATE-EMPLOYEE-TRANSACTIONS	name-FILE Example: EMPLOYEE-MASTER-FILE	PnRm Example: PIR2	PnIm Example: P1I1	Up to 8 characters Example: EMPMASRC	Up to 8 characters Example: EMPCODE
CATALOGUE KEYWORDS	PERSONNEL	ONLINE ASSEMBLER BATCH DAILY UPDATE WEEKLY PRINT MONTHLY SORT VALIDATION PACKAGE UTILITY COBOL	MASTER TRANSACTIONS WORK DISC TAPE	OUTPUT REPORT DAILY WEEKLY MONTHLY YEARLY VALIDATION CONTROL TERMINAL ON REQUEST	INPUT FORM	—	EMPLOYEE SALARY CODE DESCRIPTION NUMERIC CONTROL- TOTAL ITEMS ONLY
FREE FORM DOCUMENTATION UNDER INDICATED HEADINGS:							
NOTE	DATES DEVELOPED SYSTEM EFFORT PROGRAMMING EFFORT PROJECT LEADER COMPUTER TIME USED OTHER COSTS LESSONS LEARNT PROCEDURES	DATES DEVELOPED DATE LAST AMENDED LAST AMENDMENT ANALYST PROGRAMMER INSTRUCTIONS- OPERATIONS- RECOVERY	SECURITY RECOVERY	REPORT IDENTIFI- CATION INSTRUCTIONS-USER CONTROL DISTRIBUTION	FORM IDENTIFICATION INSTRUCTIONS-USER INSTRUCTIONS-KEYING CONTROL VOLUME	—	INPUT FORM ACCURACY
ONE-LINE TITLE/ABSTRACT							
DESCRIPTION	abstract	purpose/function	file content	report title	input form title	user description	user description

n and m are number fields, xxx and xxxxxx are mnemonic fields

2.2  
(continued)

Different security protocols are defined in the DATAMANAGER example dictionary as shown tabulated below.

User Password	Non-protected members		Protected members		
	Access?	Insert?	Access?	Alter?	Remove?
ANALYST	Yes	Yes	Yes	Yes	No
AUDITOR	Yes	No	Yes	No	No
END-USER	Yes	No	No	No	No
P-MNGR	Yes	Yes	Yes	Yes	Yes
PROG	Yes	Yes	Yes	No	No

The security protocol used in the DATAMANAGER example dictionary has been defined such that, for example, an end-user or auditor is not allowed to modify the dictionary in any way - only to interrogate and/or obtain documentation from the dictionary. Analyst and programmer on the other hand, are permitted to make some changes (but not all). In addition, the personnel manager has decided to "protect" certain definitions in the dictionary, so that, for example the end-user is prevented from accessing them and only the personnel manager and analyst can modify them.

Some aspects of dictionary security are shown in demonstration X300.

2.3

### DEVELOPMENT STATUS TEST

When a system is fully developed using DATAMANAGER and put into production its definition in the dictionary may be frozen by the data dictionary Controller. This makes it impossible for any user, regardless of security protocol, to make any changes to the definitions. The Controller may then allocate any number of test statuses in which the systems analyst has freedom to define and investigate the effects of proposed changes, either to the data structures or to the processing information defined. From the analyst's test status, the entire current system is visible amended with the changes he or she is testing. If or when the proposed changes are adopted, then the test status is frozen and so becomes the current production status (and the old production status becomes a superseded status).

2.3  
(continued)

The DATAMANAGER example dictionary demonstrates this powerful tool in system maintenance as follows. The core of data items and groups used by the conventional file system in status CONV, is frozen (status DMR), and an unfrozen status called TEST is defined in which changes have been made to the definition of EMPLOYEE-MASTER-RECORD as viewed from that status: see demonstration X320.

Three empty test statuses TEST-1, TEST-2, and TEST-3 are also defined in the DATAMANAGER example dictionary for you to research new definitions and structures.

2.4

USER DEFINED SYNTAX AND DATABASE MANAGEMENT SYSTEMS EXTENSIONS

In the DATAMANAGER example dictionary, use has been made of the status feature to record views of the core of data items and groups (used by the conventional file system) to demonstrate the ability of DATAMANAGER to handle User Defined Syntax and to interface with the IMS, ADABAS, TOTAL, SYSTEM 2000/80, and IDMS database management systems and with the MARK IV file management system. Details are as follows:

Status	Description	Demonstration
ADA	holds sample definitions for the ADABAS database EMPLOYEE-DB.	X500 (Chapter 5)
IMS	holds sample definitions for the DL/I HDAM database EMPLOYEE-DATABASE-PHYSICAL and the DL/I logical dataset EMPLOYEE-DATABASE-LOGICAL.	X600 (Chapter 6)
IDMS	holds sample definitions for the IDMS database EMP-DB.	X700 (Chapter 7)
MKIV	holds sample definitions for the Mark IV file MASTER-FILE.	X750 (Chapter 9)
S2K	holds sample definitions for the SYSTEM 2000 database DIVISION.	X650 (Chapter 7)
TOT	holds sample definitions for the TOTAL database EMPLOYEE-DATABASE.	X400 (Chapter 4)
UDS	holds a view of the conventional file system using the Extended Data Processing Structure (EDPS).	X360 (Chapter 3)

2.4  
(continued)

The sample database definitions are for simple demonstration purposes only.

The copy of the example dictionary supplied on an installation tape contains the user defined syntax and database definitions in source form only. It is therefore necessary to encode the unverified data definitions in the status of interest as described in the Controller's Manual, section 5.4.

**CHAPTER 3**

**BASIC DATAMANAGER DEMONSTRATIONS**



COMMANDS DEMONSTRATED	DESCRIPTION
STATUS "CONV". AUTHORITY "ANALYST". LIST SYSTEMS. REPORT P1-ERS. KEEP WHAT CONSTITUTES P1-ERS. LIST KEPT-DATA ALPHABETICALLY. REPORT P2-EHS. KEEP WHAT CONSTITUTES P2-EHS. LIST KEPT-DATA PROGRAMS. LIST KEPT-DATA FILES DETAILS-ONLY. LIST KEPT-DATA GROUPS ITEMS ALPHABETICALLY DETAILS-ONLY. LIST ONLY "TRANSACTION". LIST WHEN ANY EQ "-CODE" DETAILS-ONLY. LIST WHEN ANY EQ "-CODE" OR ANY EQ "-DATE" DETAILS-ONLY. LIST WHEN ANY EQ "-CODE" AND ANY NE "EMPLOYEE" DETAILS-ONLY. GLOSSARY PROGRAMS ALPHABETICALLY GIVING DESCRIPTIONS. REPORT P1V01. WHICH FILES CONSTITUTE P1-ERS. GLOSSARY FILES GIVING ALIASES, DESCRIPTIONS. REPORT P1U02MEMP. WHICH ITEMS CONSTITUTE P1U02MEMP. PRINT EMPLOYEE-CODE. WHICH GROUPS USE EMPLOYEE-CODE. REPORT EMPLOYEE-MASTER-RECORD. REPORT EMPLOYEE-IDENTIFICATION HIERARCHY. GLOSSARY MEMBER P1U02MEMP GIVING REFERENCES. LIST DUMMIES. WHAT USES PM5 DIRECTLY. REPORT P1I01.	DATAMANAGER EXAMPLE DICTIONARY - BASIC INTERROGATION/DOCUMENTATION  To show simple interrogation and documentation commands and outputs of the conventional file systems defined in status "CONV" of the DATAMANAGER example dictionary.

- DM00096I 00073 STATUS "CONV".  
NON-FROZEN STATUS CONV RECOGNISED *DICTIONARY + AUTHORITY COMMANDS req'd first* *Select status CONV - the status containing the conventional file systems.*
- DM01060I 00074 AUTHORITY "ANALYST".  
AUTHORITY RECOGNISED
- 00075 LIST SYSTEMS. *List the systems defined in the dictionary.*

LIST OF SYSTEMS MEMBER NAME	TYPE	USAGE CONDITION AC ALT REM OWNER
P1-ERS	SYSTEM	0 SCE ENC YES YES YES
P2-EHS	SYSTEM	0 SCE ENC YES YES YES
LIST CONTAINS	2 SYSTEMS	

X200

00076 REPORT P1-ERS.

Produce a formatted report of P1-ERS.

REPORT OF SYSTEM P1-ERS

EDITION 6 ENCODED BY MASTER AT 19.30.15 ON 20 JAN 1982  
STATUS CONV  
PROTECTION: NONE

ALIAS  
EMPLOYEE-RECORDS-SYSTEM

CATALOGUED AS  
PERSONNEL

DESCRIPTION  
THIS SYSTEM MAINTAINS PRODUCTION DIVISION EMPLOYEE RECORDS

NOTE  
DATES DEVELOPED  
JANUARY 1979 TO AUGUST 1979

SYSTEM EFFORT  
2 MAN-MONTHS FOR SYSTEM DESIGN  
1 MAN-MONTHS FOR PROGRAM SPECIFICATIONS  
3 MAN-MONTHS FOR SYSTEM TESTING,  
USER TRAINING AND IMPLEMENTATION

PROGRAMMING EFFORT  
4 MAN-MONTHS

PROJECT LEADER  
ALAN JOHNSON (EXT. 253)

COMPUTER TIME USED  
PROGRAM TESTING 1 HOUR 30 MINUTES  
SYSTEM TESTING 0 HOUR 40 MINUTES  
DEMONSTRATION 0 HOUR 25 MINUTES

OTHER COSTS  
1 MAN-MONTH ORGANISATION AND METHODS STAFF  
3 BOXES OF PLAIN ONE PART STATIONERY

COMMENT  
1: DO NOT TEST ON-LINE PROGRAMS IN BATCH  
MODE BY SIMULATING CARD READER AS INPUT  
TERMINAL  
2: ALWAYS CONSULT AUDITORS BEFORE FINALISING  
DATA CONTROL REPORTS

FREQUENCY RUN DAILY JOB 1 ON-LINE  
RUN WEEKLY JOB 2 BATCH

SEE P1-ERS-NEW-MEMBERS FOR ADDITIONS AND AMENDMENTS TO MEMBERS

THIS MEMBER IS DIRECTLY REFERRED TO 0 TIMES  
THIS MEMBER CONTAINS 8 DIRECT REFERENCES

SYSTEM P1-ERS

INSTALLATION  
HEAD OFFICE

SOURCE-COMPUTER  
IBM S/370-158 OS/MVS

PARAMETERS NO DATA

INPUTS  
GROUP EMPLOYEE-TRANSACTIONS-FORM

OUTPUTS  
FILE UPDATE-CONTROL-REPORT  
FILE EMPLOYEE-REPORT

UPDATES NO DATA

CALLS NO MEMBERS

CONTAINS  
PROGRAM P1V01  
PROGRAM P1S01  
PROGRAM P1U01  
PROGRAM P1P01

X200

00077 KEEP WHAT CONSTITUTES P1-ERS.  
DM01541I 54 ENTRIES ADDED TO KEPT-DATA LIST

00078 LIST KEPT-DATA ALPHABETICALLY.

MEMBER NAME	TYPE	USAGE	CONDITION	AC	ALT	REM	OWNER
COLLEGE-NAME	ITEM	1	SCE ENC	YES	YES	YES	
EDUCATION	GROUP	1	SCE ENC	YES	YES	YES	
EMPLOYEE-AFTER-UPDATE	ITEM	1	SCE ENC	YES	YES	YES	
EMPLOYEE-BEFORE-UPDATE	ITEM	2	SCE ENC	YES	YES	YES	
EMPLOYEE-CODE	ITEM	8	SCE ENC	YES	YES		PERSONNEL
EMPLOYEE-DEPARTMENT	ITEM	4	SCE ENC	YES	YES		PERSONNEL
EMPLOYEE-IDENTIFICATION	GROUP	1	SCE ENC	YES	YES	YES	
EMPLOYEE-LEAVERS	ITEM	1	SCE ENC	YES	YES	YES	
EMPLOYEE-MASTER-RECORD	GROUP	1	SCE ENC	YES	YES	YES	
EMPLOYEE-NAME	ITEM	2	SCE ENC	YES	YES		PERSONNEL
EMPLOYEE-NEWCOMERS	ITEM	2	SCE ENC	YES	YES	YES	
EMPLOYEE-REPORT	FILE	3	SCE ENC	YES	YES	YES	
EMPLOYEE-REPORT-DATA	GROUP	1	SCE ENC	YES	YES	YES	
EMPLOYEE-REPORT-HEADER	GROUP	3	SCE ENC	YES	YES	YES	
EMPLOYEE-SALARY	ITEM	2	SCE ENC	YES	YES		PERSONNEL
EMPLOYEE-STREET	ITEM	1	SCE ENC	YES	YES	YES	
EMPLOYEE-TELEPHONE	ITEM	1	SCE ENC	YES	YES	YES	
EMPLOYEE-TOWN	ITEM	1	SCE ENC	YES	YES	YES	
EMPLOYEE-TRANSACTIONS-FORM	GROUP	2	SCE ENC	YES	YES	YES	
EMPLOYING-COMPANY	ITEM	1	SCE ENC	YES	YES	YES	
EXPERIENCE	GROUP	1	SCE ENC	YES	YES	YES	
EXPERIENCE-CODE	ITEM	1	SCE ENC	YES	YES	YES	
EXPERIENCE-YRS	ITEM	1	SCE ENC	YES	YES	YES	
PM1	ITEM	2	SCE ENC	YES	YES	YES	
PM2	ITEM	2	SCE ENC	YES	YES	YES	
PM3	ITEM	2	SCE ENC	YES	YES	YES	
PM4	ITEM	2	SCE ENC	YES	YES	YES	
PM5	ITEM	1	* DUM	YES	YES	YES	
P1-ERS-NEW-MEMBERS	COMMAND-STRM	1	SCE ENC	YES	YES	YES	
P1I01	MODULE	1	SCE ENC	YES	YES	YES	
P1P01	PROGRAM	1	SCE ENC	YES	YES	YES	
P1S01	PROGRAM	1	SCE ENC	YES	YES	YES	
P1S01TSORT	FILE	3	SCE ENC	YES	YES	YES	
P1U01	PROGRAM	1	SCE ENC	YES	YES	YES	
P1U02	MODULE	2	SCE ENC	YES	YES	YES	
P1U02MEMP	FILE	5	SCE ENC	YES	YES	YES	
P1V01	PROGRAM	1	SCE ENC	YES	YES	YES	
P1V01WVAL	FILE	2	SCE ENC	YES	YES	YES	
QUALIFICATIONS	ITEM	1	SCE ENC	YES	YES	YES	
REPORT-PAGE	ITEM	1	SCE ENC	YES	YES	YES	
REPORT-TITLE	ITEM	1	SCE ENC	YES	YES	YES	
SALARY-AFTER-UPDATE	ITEM	1	SCE ENC	YES	YES	YES	
SALARY-BEFORE-UPDATE	ITEM	2	SCE ENC	YES	YES	YES	
SOCIAL-SECURITY-CODE	ITEM	2	SCE ENC	YES	YES		PERSONNEL
STANDARD-DATE	ITEM	4	SCE ENC	YES	YES	YES	
TAX-CODE	ITEM	2	SCE ENC	YES	YES		PERSONNEL
TRANSACTION-CODE	ITEM	4	SCE ENC	YES	YES	YES	
TRANSACTION-DATA	ITEM	2	SCE ENC	YES	YES	YES	
TRANSACTION-DATE	ITEM	2	SCE ENC	YES	YES	YES	
TRANSACTION-RECORD	GROUP	4	SCE ENC	YES	YES	YES	
TRANSACTION-TOTAL	ITEM	1	SCE ENC	YES	YES	YES	
UPDATE-CONTROL-DATA	GROUP	1	SCE ENC	YES	YES	YES	
UPDATE-CONTROL-REPORT	FILE	2	SCE ENC	YES	YES	YES	

LIST CONTAINS 32 ITEMS  
 9 GROUPS  
 5 FILES  
 2 MODULES  
 4 PROGRAMS  
 1 COMMAND-STREAM  
 1 DUMMY  
 53 MEMBERS IN TOTAL

By using a combination of KEEP and LIST we can produce a list of all members that constitute P1-ERS.

The first and second columns of the LIST command output show the member names and member types. The column headed USAGE indicates the number of references to each member. The column headed CONDITION shows whether a source record exists for the member (SCE), whether an encoded data entries record exists (ENC), or whether the member is a dummy (DUM). The asterisk indicates that the member definition is or may be incomplete.

The columns headed AC ALT and REM indicates whether the current user (in this case ANALYST) is able to access, alter and remove the listed member. The column headed OWNER gives the name of the owner (if any) of the listed member.

X200

00079 REPORT P2-EHS.

*Let us now report the second  
system defined - P2-EHS.*

REPORT OF SYSTEM P2-EHS

EDITION 11 ENCODED BY MASTER AT 18.56.38 ON 20 JAN 1982  
STATUS CONV  
PROTECTION: NONE

ALIAS  
EMPLOYEE-HISTORY-SYSTEM

CATALOGUED AS  
PERSONNEL

DESCRIPTION  
THIS SYSTEM MAINTAINS PRODUCTION DIVISION EMPLOYEE HISTORY

NOTE  
DATES DEVELOPED  
SEPTEMBER 1979

SYSTEM EFFORT  
2 MAN-WEEKS FOR SYSTEM DESIGN  
2 MAN-WEEKS FOR PROGRAM SPECIFICATIONS  
2 MAN-WEEKS FOR SYSTEM TESTING

PROGRAMMING EFFORT  
4 MAN-WEEKS

PROJECT LEADER  
LYNDA SMITH OF UNIVERSAL SOFTWARE COMPANY,  
NEW TOWN (TEL. 836 8399)

COMPUTER TIME USED  
PROGRAM TESTING 0 HOUR 35 MINUTES  
SYSTEM TESTING 0 HOUR 20 MINUTES

OTHER COSTS  
1 BOX OF PLAIN ONE PART STATIONERY

COMMENT  
1: DO NOT USE DISK FILES FOR HISTORY RECORDS  
2: ALWAYS ALLOW FOR A TRANSACTION TYPE CODE  
IN A HISTORY RECORD  
3: ALWAYS STUDY LEGAL REQUIREMENTS BEFORE  
RECORDING PERSONAL DETAILS ON A  
HISTORY FILE

FREQUENCY MONTHLY BATCH

THIS MEMBER IS DIRECTLY REFERRED TO 0 TIMES  
THIS MEMBER CONTAINS 3 DIRECT REFERENCES

SYSTEM P2-EHS

INSTALLATION  
HEAD OFFICE

SOURCE-COMPUTER  
S/370-165 OS/SVS

PARAMETERS NO DATA

INPUTS NO DATA

OUTPUTS  
FILE EMPLOYEE-HISTORY-REPORT

UPDATES NO DATA

CALLS NO MEMBERS

CONTAINS  
PROGRAM P2U01  
PROGRAM P2P01

X200

00080 KEEP WHAT CONSTITUTES P2-EHS.  
DM01541I 34 ENTRIES ADDED TO KEPT-DATA LIST

00081 LIST KEPT-DATA PROGRAMS.

LIST OF SELECTED PROGRAMS  
MEMBER NAME TYPE USAGE CONDITION AC ALT REM OWNER

P2U01 PROGRAM 1 SCE ENC YES YES YES  
P2P01 PROGRAM 1 SCE ENC YES YES YES

LIST CONTAINS 2 PROGRAMS

00082 LIST KEPT-DATA FILES DETAILS-ONLY.

EMPLOYEE-HISTORY-REPORT FILE 2 SCE ENC YES YES YES  
P1S01TSORT FILE 3 SCE ENC YES YES YES  
P2U01TEMP FILE 3 SCE ENC YES YES YES  
P1U02MEMP FILE 5 SCE ENC YES YES YES

00083 LIST KEPT-DATA GROUPS, ITEMS

00084 ALPHABETICALLY DETAILS-ONLY.

COLLEGE-NAME ITEM 1 SCE ENC YES YES YES  
EDUCATION GROUP 1 SCE ENC YES YES YES  
EMPLOYEE-CODE ITEM 8 SCE ENC YES YES PERSONNEL  
EMPLOYEE-DATA GROUP 1 SCE ENC YES YES YES  
EMPLOYEE-DEPARTMENT ITEM 4 SCE ENC YES YES PERSONNEL  
EMPLOYEE-IDENTIFICATION GROUP 1 SCE ENC YES YES YES  
EMPLOYEE-MASTER-RECORD GROUP 1 SCE ENC YES YES YES  
EMPLOYEE-NAME ITEM 2 SCE ENC YES YES PERSONNEL  
EMPLOYEE-REPORT-HEADER GROUP 3 SCE ENC YES YES YES  
EMPLOYEE-SALARY ITEM 2 SCE ENC YES YES PERSONNEL  
EMPLOYEE-STREET ITEM 1 SCE ENC YES YES YES  
EMPLOYEE-TELEPHONE ITEM 1 SCE ENC YES YES YES  
EMPLOYEE-TOWN ITEM 1 SCE ENC YES YES YES  
EMPLOYING-COMPANY ITEM 1 SCE ENC YES YES YES  
EXPERIENCE GROUP 1 SCE ENC YES YES YES  
EXPERIENCE-CODE ITEM 1 SCE ENC YES YES YES  
EXPERIENCE-YRS ITEM 1 SCE ENC YES YES YES  
QUALIFICATIONS ITEM 1 SCE ENC YES YES YES  
REPORT-PAGE ITEM 1 SCE ENC YES YES YES  
REPORT-TITLE ITEM 1 SCE ENC YES YES YES  
SOCIAL-SECURITY-CODE ITEM 2 SCE ENC YES YES PERSONNEL  
STANDARD-DATE ITEM 4 SCE ENC YES YES YES  
TAX-CODE ITEM 2 SCE ENC YES YES PERSONNEL  
TRANSACTION-CODE ITEM 4 SCE ENC YES YES YES  
TRANSACTION-DATA ITEM 2 SCE ENC YES YES YES  
TRANSACTION-DATE ITEM 2 SCE ENC YES YES YES  
TRANSACTION-RECORD GROUP 4 SCE ENC YES YES YES

00085 LIST ONLY "TRANSACTION".

LIST OF MEMBERS  
MEMBER NAME TYPE USAGE CONDITION AC ALT REM OWNER

TRANSACTION-CODE ITEM 4 SCE ENC YES YES YES  
TRANSACTION-DATA ITEM 2 SCE ENC YES YES YES  
TRANSACTION-DATE ITEM 2 SCE ENC YES YES YES  
TRANSACTION-RECORD GROUP 4 SCE ENC YES YES YES  
TRANSACTION-TOTAL ITEM 1 SCE ENC YES YES YES

LIST CONTAINS 4 ITEMS  
1 GROUP  
5 MEMBERS IN TOTAL

00086 LIST WHEN ANY EQ "-CODE" DETAILS-ONLY.

EMPLOYEE-CODE ITEM 8 SCE ENC YES YES PERSONNEL  
EXPERIENCE-CODE ITEM 1 SCE ENC YES YES YES  
SOCIAL-SECURITY-CODE ITEM 2 SCE ENC YES YES PERSONNEL  
TAX-CODE ITEM 2 SCE ENC YES YES PERSONNEL  
TRANSACTION-CODE ITEM 4 SCE ENC YES YES YES

00087 LIST WHEN ANY EQ "-CODE" OR ANY EQ "-DATE"

00088 DETAILS-ONLY.

EMPLOYEE-CODE ITEM 8 SCE ENC YES YES PERSONNEL  
EXPERIENCE-CODE ITEM 1 SCE ENC YES YES YES  
SOCIAL-SECURITY-CODE ITEM 2 SCE ENC YES YES PERSONNEL  
STANDARD-DATE ITEM 4 SCE ENC YES YES YES  
TAX-CODE ITEM 2 SCE ENC YES YES PERSONNEL  
TRANSACTION-CODE ITEM 4 SCE ENC YES YES YES  
TRANSACTION-DATE ITEM 2 SCE ENC YES YES YES

00089 LIST WHEN ANY EQ "-CODE" AND ANY NE "EMPLOYEE"

00090 DETAILS-ONLY.

EXPERIENCE-CODE ITEM 1 SCE ENC YES YES YES  
SOCIAL-SECURITY-CODE ITEM 2 SCE ENC YES YES PERSONNEL  
TAX-CODE ITEM 2 SCE ENC YES YES PERSONNEL  
TRANSACTION-CODE ITEM 4 SCE ENC YES YES YES

We now use a combination of KEEP and LIST commands to list members that constitute P2-EHS, but instead of producing a single list of members as for P1-ERS, we have asked DATAMANAGER to produce lists of specific member types.

Note that each of the three LIST commands (for PROGRAMS, FILES, and GROUPS and ITEMS) specifies KEPT-DATA. The kept-data list is retained internally by DATAMANAGER until another KEEP command is encountered.

DATAMANAGER's selection options may be applied to members' names as well as member types, for example, listing only those members with names beginning with "TRANSACTION", those members having "-CODE" as part of their names, or any of the more complex selections shown.

X200

00091 GLOSSARY PROGRAMS ALPHABETICALLY GIVING DESCRIPTIONS.

GLOSSARY OF PROGRAMS

PIP01

PROGRAM  
DESCRIPTION  
THIS PROGRAM PRINTS EMPLOYEE MASTER FILE

PIS01

PROGRAM  
DESCRIPTION  
THIS PROGRAM SORTS EMPLOYEE TRANSACTIONS IN EMPLOYEE CODE SEQUENCE

P1U01

PROGRAM  
DESCRIPTION  
THIS PROGRAM UPDATES EMPLOYEE MASTER FILE

P1V01

PROGRAM  
DESCRIPTION  
THIS PROGRAM VALIDATES EMPLOYEE TRANSACTIONS WHICH ARE ENTERED VIA V.D.U.

P2P01

PROGRAM  
DESCRIPTION  
THIS PROGRAM PRINTS EMPLOYEE HISTORY REPORT

P2U01

PROGRAM  
DESCRIPTION  
THIS PROGRAM UPDATES EMPLOYEE HISTORY MASTER FILE

GLOSSARY CONTAINS 6 PROGRAMS

*Use of the GLOSSARY command enables report glossaries or abstracts to be generated. For example a glossary of all programs giving descriptions.*

X200

00092 REPORT P1V01.

REPORT OF PROGRAM P1V01

EDITION 9 ENCODED BY MASTER AT 16.30.40 ON 18 JAN 1982  
STATUS CONV  
PROTECTION: NONE

ALIAS  
VALIDATE-EMPLOYEE-TRANSACTIONS

CATALOGUED AS  
ONLINE  
VALIDATION  
PACKAGE  
DAILY

DESCRIPTION  
THIS PROGRAM VALIDATES EMPLOYEE TRANSACTIONS WHICH ARE ENTERED VIA V.D.U.

NOTE  
DATES DEVELOPED  
FEBRUARY 1979

DATE LAST AMENDED  
15 AUGUST 1979

LAST AMENDMENT  
A TRANSACTION CODE ADDED TO CATER FOR  
PART TIME EMPLOYEE  
AMENDMENT REQUESTED BY NORMAN BURR

INSTRUCTIONS - CONTROL  
MAXIMUM V.D.U. USAGE TIME ALLOWED IS ONLY  
30 MINUTES PER DAY. INFORM LYNDA JACKSON  
OF PERSONNEL DEPT (EXT. 798) IF THE TIME  
IS EXCEEDED

INSTRUCTIONS - RECOVERY  
RECOVER FILE P1V01WAL AND CONTACT PERSONNEL  
DEPT. TO GIVE DETAILS OF THE LAST VALID  
TRANSACTION RECORDED IN THE FILE

COMMENT  
1: INPUT MESSAGE LENGTH SHOULD BE RESTRICTED  
TO 75 CHARACTERS  
2: VALIDATION ERROR MESSAGES SHOULD BE  
SELF-EXPLANATORY. DO NOT USE ERROR CODES  
TO SAVE SCREEN SPACE

FREQUENCY DAILY ONLINE

ACCESS-AUTHORITY PETER LEWIS

THIS MEMBER IS DIRECTLY REFERRED TO ONCE  
THIS MEMBER CONTAINS 3 DIRECT REFERENCES

PROGRAM P1V01

AUTHOR  
UNIVERSAL SOFTWARE COMPANY. IN HOUSE AMENDMENTS BY  
PETER LEWIS (ANALYST), CATHY JOHNSON (PROGRAMMER)

PARAMETERS NO DATA

INPUTS  
FILE P1V02MEMP  
GROUP EMPLOYEE-TRANSACTIONS-FORM

OUTPUTS  
FILE P1V01WVAL

UPDATES NO DATA

CALLS NO MEMBERS

CONTAINS NO MEMBERS

*Let us select one of the programs from the glossary, say P1V01, and produce a formatted report of it.*

*Reports are generated from the encoded data entries record and structured by DATAMANAGER in a standard fashion that depends on the member type:*

*... full-name alias*

*... catalogue keywords*

*... one-line description*

*... free-form documentation*

*... references to and from P1V01*

*... P1V01 reads the employee master file P1V02MEMP and the input form EMPLOYEE-TRANSACTIONS-FORM*

*... and outputs the validation file P1V01WVAL.*

X200

00093 WHICH FILES CONSTITUTE P1-ERS.

THE FOLLOWING SELECTED MEMBERS SATISFY THE GIVEN CRITERIA

FILE	UPDATE-CONTROL-REPORT
FILE	EMPLOYEE-REPORT
FILE	P1U02MEMP
FILE	P1V01WVAL
FILE	P1S01TSORT

5 MEMBERS IN TOTAL

00094 GLOSSARY FILES GIVING ALIASES, DESCRIPTIONS.

GLOSSARY OF SELECTED MEMBERS

EMPLOYEE-HISTORY-REPORT

FILE  
ALIAS  
1 P2R1  
DESCRIPTION  
MONTHLY EMPLOYEE HISTORY REPORT

EMPLOYEE-REPORT

FILE  
ALIAS  
1 P1R2  
DESCRIPTION  
WEEKLY EMPLOYEE DETAILS REPORT

P1S01TSORT

FILE  
ALIAS  
1 SORTED-EMPLOYEE-TRANSACTION-FILE  
DESCRIPTION  
THIS FILE STORES VALIDATED EMPLOYEE TRANSACTIONS IN EMPLOYEE-CODE SEQUENCE

P1U02MEMP

FILE  
ALIAS  
1 EMPLOYEE-MASTER-FILE  
DESCRIPTION  
THIS FILE STORES PERSONAL DETAILS OF EMPLOYEE

P1V01WVAL

FILE  
ALIAS  
1 VALIDATED-EMPLOYEE-TRANSACTIONS-FILE  
DESCRIPTION  
THIS FILE STORES VALIDATED EMPLOYEE TRANSACTIONS

P2U01TEMP

FILE  
ALIAS  
1 EMPLOYEE-HISTORY-MASTER-FILE  
DESCRIPTION  
THIS FILE STORES CUMULATIVE EMPLOYEE TRANSACTIONS

UPDATE-CONTROL-REPORT

FILE  
ALIAS  
1 P1R1  
DESCRIPTION  
WEEKLY EMPLOYEE UPDATE CONTROL REPORT

GLOSSARY CONTAINS 7 FILES  
7 MEMBERS PROCESSED

*We can also directly interrogate the dictionary to find which files constitute the system P1-ERS,*

*or we can use GLOSSARY to obtain full-name aliases and descriptions for all files.*

*Such a glossary could be used as abridged documentation relating the file names as known by different departments in an organisation.*

X200

00095 REPORT P1U02MEMP.

REPORT OF FILE P1U02MEMP

EDITION 7 ENCODED BY MASTER AT 16.31.00 ON 18 JAN 1982  
STATUS CONV  
PROTECTION: NONE

ALIAS  
EMPLOYEE-MASTER-FILE

CATALOGUED AS  
MASTER  
DISC

DESCRIPTION  
THIS FILE STORES PERSONAL DETAILS OF EMPLOYEE

NOTE  
SECURITY  
AT THE END OF THE WEEKLY UPDATE RUN,  
DUMP THE FILE ON A TAPE

THIS MEMBER IS DIRECTLY REFERRED TO 5 TIMES  
THIS MEMBER CONTAINS 2 DIRECT REFERENCES

FILE P1U02MEMP

GENERATION-CYCLE 3

RETENTION-PERIOD 1 MONTHS

SIZE 5000 TRACKS

ORGANISATION IS DIRECT  
BLOCKING IS FIXED  
BLOCK SIZE IS 205  
RECORD SIZE IS 1000  
LABELS ARE STANDARD-LABELS  
DEVICE DISK 2314

SORT-KEY  
ITEM EMPLOYEE-CODE ASCENDING

FORM HELD-AS  
CONTAINS  
GROUP EMPLOYEE-MASTER-RECORD

*Compare this formatted report on the employee master file with that shown previously for program P1V01 (or either of the systems P1-ERS, P2-EHS). You will see that the top part is in a common format showing the common clauses.*

*It may be important for the use of these clauses to be standardised - refer to Figure 2.4 in Chapter 2 to see the naming conventions adopted in the example dictionary.*

*The second part of the report is formatted from specific clauses that depend on the member type. DATAMANAGER allows truncation of keywords on input, but uses the full expanded form when reporting.*

X200

00096 WHICH ITEMS CONSTITUTE PIU02MEMP.

Let us find out which items constitute the employee master file, PIU02MEMP,

THE FOLLOWING ITEMS SATISFY THE GIVEN CRITERIA

ITEM	EMPLOYEE-CODE
ITEM	EMPLOYEE-NAME
ITEM	EMPLOYEE-STREET
ITEM	EMPLOYEE-TOWN
ITEM	EMPLOYEE-TELEPHONE
ITEM	EMPLOYEE-DEPARTMENT
ITEM	EMPLOYEE-SALARY
ITEM	COLLEGE-NAME
ITEM	QUALIFICATIONS
ITEM	EMPLOYING-COMPANY
ITEM	EXPERIENCE-CODE
ITEM	EXPERIENCE-YRS
ITEM	TAX-CODE
ITEM	SOCIAL-SECURITY-CODE

14 MEMBERS IN TOTAL

00097 PRINT EMPLOYEE-CODE.

```

PRINT OF EMPLOYEE-CODE
00100 ITEM
00200 ENTERED-AS ALPHANUMERIC 4
00300 HELD-AS NUMERIC 4 CONTENTS RANGE 1000 TO 8000
00400 REPORTED-AS PICTURE '9999'
07000 ALIAS LOW-LEVEL 'EMPCODE'
08000 CATALOG 'EMPLOYEE', 'CODE'
09000 DESCRIPTION
09100 'STANDARD EMPLOYEE CODE'
10000 NOTE
10100 'INPUT FORM XYZ'
10200 'EMPLOYEE-TRANSACTIONS-FORM'
END OF PRINT

```

and obtain a print of the source record of EMPLOYEE-CODE. The source record is an exact copy of the member definition as entered into the data dictionary.

00098 WHICH GROUPS USE EMPLOYEE-CODE.

THE FOLLOWING GROUPS SATISFY THE GIVEN CRITERIA

GROUP	TRANSACTION-RECORD
GROUP	EMPLOYEE-TRANSACTIONS-FORM
GROUP	EMPLOYEE-MASTER-RECORD
GROUP	EMPLOYEE-DATA
GROUP	EMPLOYEE-REPORT-DATA

5 MEMBERS IN TOTAL

So far we have interrogated only in the downward direction using the keyword CONSTITUTES. Here is an example of interrogation in the upwards direction using the keyword USE.

X200

00099 REPORT EMPLOYEE-MASTER-RECORD.

*Let us report EMPLOYEE-MASTER-RECORD,  
a GROUP member just shown to refer  
to EMPLOYEE-CODE.*

REPORT OF GROUP EMPLOYEE-MASTER-RECORD

EDITION 6 ENCODED BY ANALYST AT 15.24.23 ON 12 SEP 1980  
STATUS CONV  
PROTECTION: NONE

ALIAS  
LOW-LEVEL EMPMASRC

DESCRIPTION  
EMPLOYEE MASTER FILE RECORD

THIS MEMBER IS DIRECTLY REFERRED TO ONCE  
THIS MEMBER CONTAINS 11 DIRECT REFERENCES

GROUP EMPLOYEE-MASTER-RECORD

FORM HELD-AS

USER-EXIT P1U02

KEYS EMPLOYEE-CODE  
EMPLOYEE-DEPARTMENT

CONTAINS  
ITEM EMPLOYEE-CODE  
GROUP EMPLOYEE-IDENTIFICATION  
ITEM EMPLOYEE-DEPARTMENT  
ITEM EMPLOYEE-SALARY  
GROUP EDUCATION  
GROUP EXPERIENCE  
ITEM TAX-CODE  
ITEM SOCIAL-SECURITY-CODE

X200

00100 REPORT EMPLOYEE-IDENTIFICATION HIERARCHY.

*By use of the keyword HIERARCHY  
we can obtain a report on a member  
and on its contained members.*

REPORT OF GROUP EMPLOYEE-IDENTIFICATION

EDITION 5 ENCODED BY MASTER AT 16.59.37 ON 13 DEC 1979  
STATUS CONV  
PROTECTION: NONE

ALIAS  
LOW-LEVEL EMPIDEN

DESCRIPTION  
NAME, ADDRESS AND TELEPHONE NUMBER OF AN EMPLOYEE

NOTE  
ACCURACY  
NAME CHECKED AGAINST BIRTH CERTIFICATE  
ADDRESS AND TELEPHONE NUMBER NOT CHECKED

THIS MEMBER IS DIRECTLY REFERRED TO ONCE  
THIS MEMBER CONTAINS 4 DIRECT REFERENCES

GROUP EMPLOYEE-IDENTIFICATION

FORM HELD-AS

CONTAINS  
ITEM EMPLOYEE-NAME  
ITEM EMPLOYEE-STREET  
ITEM EMPLOYEE-TOWN  
ITEM EMPLOYEE-TELEPHONE

REPORT OF ITEM EMPLOYEE-NAME

EDITION 5 ENCODED BY MASTER AT 16.59.37 ON 13 DEC 1979  
STATUS CONV  
PROTECTION: OWNER, REMOVE, ALTER, ACCESS  
OWNED BY PERSONNEL

ALIAS  
LOW-LEVEL EMPNAME

CATALOGUED AS  
EMPLOYEE  
DESCRIPTION

DESCRIPTION  
EMPLOYEE SURNAME, FIRST NAME AND MIDDLE NAME

THIS MEMBER IS DIRECTLY REFERRED TO 2 TIMES  
THIS MEMBER CONTAINS 0 DIRECT REFERENCES

ITEM EMPLOYEE-NAME

ENTERED-AS VERSION 1  
CHARACTERS 30

HELD-AS VERSION 1  
CHARACTERS 30

REPORTED-AS VERSION 1  
PICTURE 'X(10)B(5)X(10)B(3)X(10)'

REPORT OF ITEM EMPLOYEE-STREET

EDITION 4 ENCODED BY MASTER AT 16.59.37 ON 13 DEC 1979  
STATUS CONV  
PROTECTION: NONE

ALIAS  
LOW-LEVEL EMPSTR

CATALOGUED AS  
EMPLOYEE  
DESCRIPTION

DESCRIPTION  
EMPLOYEE STREET NAME INCLUDING ANY APARTMENT NUMBER

THIS MEMBER IS DIRECTLY REFERRED TO ONCE  
THIS MEMBER CONTAINS 0 DIRECT REFERENCES

ITEM EMPLOYEE-STREET

ENTERED-AS VERSION 1  
CHARACTERS 40

HELD-AS VERSION 1  
CHARACTERS 40

X200

REPORTED-AS VERSION 1  
PICTURE 'X(40)'

REPORT OF ITEM EMPLOYEE-TOWN

EDITION 4 ENCODED BY MASTER AT 16.59.37 ON 13 DEC 1979  
STATUS CONV  
PROTECTION: NONE

ALIAS  
LOW-LEVEL EMPDOWN

CATALOGUED AS  
EMPLOYEE  
DESCRIPTION

DESCRIPTION  
EMPLOYEE HOME TOWN NAME AND POST CODE

THIS MEMBER IS DIRECTLY REFERRED TO ONCE  
THIS MEMBER CONTAINS 0 DIRECT REFERENCES

ITEM EMPLOYEE-TOWN

ENTERED-AS VERSION 1  
CHARACTERS 20

HELD-AS VERSION 1  
CHARACTERS 20

REPORTED-AS VERSION 1  
PICTURE 'X(20)'

REPORT OF ITEM EMPLOYEE-TELEPHONE

EDITION 5 ENCODED BY MASTER AT 16.59.37 ON 13 DEC 1979  
STATUS CONV  
PROTECTION: NONE

ALIAS  
LOW-LEVEL EMPTELNO

CATALOGUED AS  
EMPLOYEE  
DESCRIPTION

DESCRIPTION  
EMPLOYEE TELEPHONE NUMBER INCLUDING CODE

THIS MEMBER IS DIRECTLY REFERRED TO ONCE  
THIS MEMBER CONTAINS 0 DIRECT REFERENCES

ITEM EMPLOYEE-TELEPHONE

ENTERED-AS VERSION 1  
NUMERIC-CHARACTER 10

HELD-AS VERSION 1  
NUMERIC-CHARACTER 10

REPORTED-AS VERSION 1  
PICTURE '9(3)8(2)9(3)89(4)'

X200

00101 GLOSSARY MEMBER P1U02MEMP GIVING REFERENCES.

*In addition to using GLOSSARY for common clauses of a member, the keyword REFERENCES enables a downwards relationship trace to be generated, shown here for the employee master file, P1U02MEMP.*

GLOSSARY OF MEMBERS

P1U02MEMP  
FILE

FILE  
GROUP  
ITEM

P1U02MEMP REFERS TO  
EMPLOYEE-MASTER-RECORD  
EMPLOYEE-CODE

GROUP  
ITEM  
GROUP  
ITEM  
GROUP  
ITEM  
GROUP  
ITEM  
ITEM  
ITEM  
ITEM  
MODULE

EMPLOYEE-MASTER-RECORD REFERS TO  
EMPLOYEE-CODE  
EMPLOYEE-IDENTIFICATION  
EMPLOYEE-DEPARTMENT  
EMPLOYEE-SALARY  
EDUCATION  
EXPERIENCE  
TAX-CODE  
SOCIAL-SECURITY-CODE  
EMPLOYEE-CODE  
EMPLOYEE-DEPARTMENT  
P1U02

ITEM

EMPLOYEE-CODE REFERS TO NO MEMBERS

GROUP  
ITEM  
ITEM  
ITEM  
ITEM

EMPLOYEE-IDENTIFICATION REFERS TO  
EMPLOYEE-NAME  
EMPLOYEE-STREET  
EMPLOYEE-TOWN  
EMPLOYEE-TELEPHONE

ITEM

EMPLOYEE-DEPARTMENT REFERS TO NO MEMBERS

ITEM

EMPLOYEE-SALARY REFERS TO NO MEMBERS

GROUP  
ITEM  
ITEM

EDUCATION REFERS TO  
COLLEGE-NAME  
QUALIFICATIONS

GROUP  
ITEM  
ITEM  
ITEM

EXPERIENCE REFERS TO  
EMPLOYING-COMPANY  
EXPERIENCE-CODE  
EXPERIENCE-YRS

ITEM

TAX-CODE REFERS TO NO MEMBERS

ITEM

SOCIAL-SECURITY-CODE REFERS TO NO MEMBERS

ITEM

EMPLOYEE-NAME REFERS TO NO MEMBERS

ITEM

EMPLOYEE-STREET REFERS TO NO MEMBERS

ITEM

EMPLOYEE-TOWN REFERS TO NO MEMBERS

ITEM

EMPLOYEE-TELEPHONE REFERS TO NO MEMBERS

ITEM

COLLEGE-NAME REFERS TO NO MEMBERS

ITEM

QUALIFICATIONS REFERS TO NO MEMBERS

ITEM

EMPLOYING-COMPANY REFERS TO NO MEMBERS

ITEM

EXPERIENCE-CODE REFERS TO NO MEMBERS

ITEM  
ITEM

EXPERIENCE-YRS REFERS TO  
EMPLOYEE-DEPARTMENT

GLOSSARY CONTAINS 1 FILE  
1 MEMBER PROCESSED

X200

00102 LIST DUMMIES.

MEMBER NAME	TYPE	USAGE	CONDITION	AC	ALT	REM	OWNER
PM5	ITEM	1 *	DUM	YES	YES	YES	YES

LIST CONTAINS  
 1 ITEM  
 1 DUMMY  
 1 MEMBER IN TOTAL

00103 WHAT USES PM5 DIRECTLY.

ITEM	PM5 IS USED BY
MODULE	PII01

00104 REPORT PII01.

REPORT OF MODULE PII01

EDITION 6 ENCODED BY MASTER AT 16.31.25 ON 18 JAN 1982  
STATUS CONV  
PROTECTION: NONE

ALIAS  
SETUP-UPDATE-PARAMETERS

CATALOGUED AS  
BATCH  
UTILITY  
ASSEMBLER  
WEEKLY

DESCRIPTION  
THIS MODULE SETS UPDATE PARAMETERS

NOTE  
DATES DEVELOPED  
MARCH 1979

INSTRUCTIONS - RECOVERY  
THIS IS A STANDARD UTILITY DEVELOPED BY THE  
TECHNICAL SUPPORT PROGRAMMER. CONTACT HIM  
FOR FURTHER ACTION

PROCESS PARAMETERS

PM1	BINARY HALF WORD SELECTS UPDATE MODE
PM2	BINARY HALF WORD SELECTS LOG FORMAT
PM3	BINARY HALF WORD PARAMETER OFFSET
PM4	CHARACTER 1 BYTE RETURN CODE FLAG
PM5	CHARACTER 4 BYTES RESERVED

FREQUENCY WEEKLY

ACCESS-AUTHORITY PETER LEWIS

THIS MEMBER IS DIRECTLY REFERRED TO ONCE  
THIS MEMBER CONTAINS 5 DIRECT REFERENCES

MODULE PII01

AUTHOR  
PETER LEWIS (ANALYST), ANDREW STEVENS (PROGRAMMER)

PARAMETERS	
ITEM	PM1
ITEM	PM2
ITEM	PM3
ITEM	PM4
ITEM	PM5

INPUTS NO DATA

OUTPUTS NO DATA

UPDATES NO DATA

CALLS NO MEMBERS

CONTAINS NO MEMBERS

*When a member definition is encoded by DATAMANAGER, if a reference is made to a non-existent member, then DATAMANAGER automatically creates a dummy data entries record for that member so that references to the dummy can be correctly established and maintained.*

*The report of PII01 in this example shows a reference to PM5, and in fact, it was the encoding of PII01 which created the dummy.*

*If/when a member definition is encoded for PM5, then DATAMANAGER automatically transfers references to the new data entries record and the dummy PM5 vanishes. This makes it possible to progressively implement a structure in the dictionary before all of its components are defined.*

*A dummy can only exist if it has at least one referring member (thus, for example, if PII01 were removed then PM5 would vanish).*

COMMANDS DEMONSTRATED	DESCRIPTION
STATUS "CONV". AUTHORITY "PROG". GLOSSARY PROGRAMS, MODULES GIVING ALIAS, DESCRIPTION. DOES PIU01 USE UPDATE-CONTROL-REPORT. DOES PIU01 USE EMPLOYEE-REPORT. WHICH PROGRAMS UPDATES PIU02MEMP. WHICH PROGRAMS INPUTS PIVO1NVAL. WHICH PROGRAMS PASSES PM1. REPORT PIU01. BULK PRINT ITEMS FROM "PM1" TO "PM5". LIST CATALOGS. WHAT FORMS "BATCH". WHAT FORMS "BATCH", "WEEKLY". WHICH PROGRAMS FORM "BATCH" AND OUTPUTS UPDATE-CONTROL-REPORT. KEEP WHAT FORMS "BATCH", "WEEKLY". ALSO KEEP WHAT FORMS "BATCH", "MONTHLY". GLOSSARY KEPT-DATA GIVING ALIAS, NOTE, COMMENT. LIST ALIASES. SHOW ALIAS-TYPES. WHOSE ALIAS IS "TRANSREC". WHAT IS "TRANSREC". <i>SHOW</i> GLOSSARY ITEMS GIVING LOW-LEVEL ALIASES.	DATAMANAGER EXAMPLE DICTIONARY - BASIC INTERROGATION/DOCUMENTATION A further demonstration of documentation and interrogation of the conventional file system.

DM00096I 00107 STATUS "CONV".  
 NON-FROZEN STATUS CONV RECOGNISED

DM01060I 00108 AUTHORITY "PROG".  
 AUTHORITY RECOGNISED

00109 GLOSSARY PROGRAMS, MODULES GIVING ALIAS, DESCRIPTION.

*This glossary of programs and modules gives a cross-reference between member names and full-name aliases, and shows the one-line description.*

GLOSSARY OF SELECTED MEMBERS

PII01  
 MODULE  
 ALIAS  
 1 SETUP-UPDATE-PARAMETERS  
 DESCRIPTION  
 THIS MODULE SETS UPDATE PARAMETERS

PIP01  
 PROGRAM  
 ALIAS  
 1 PRINT-EMPLOYEE-REPORT  
 DESCRIPTION  
 THIS PROGRAM PRINTS EMPLOYEE MASTER FILE

PIS01  
 PROGRAM  
 ALIAS  
 1 SORT-EMPLOYEE-TRANSACTIONS  
 DESCRIPTION  
 THIS PROGRAM SORTS EMPLOYEE TRANSACTIONS IN EMPLOYEE CODE SEQUENCE

PIU01  
 PROGRAM  
 ALIAS  
 1 UPDATE-EMPLOYEE-MASTER-FILE  
 DESCRIPTION  
 THIS PROGRAM UPDATES EMPLOYEE MASTER FILE

PIU02  
 MODULE  
 ALIAS  
 1 ACCESS-EMPLOYEE-MASTER-FILE  
 DESCRIPTION  
 THIS MODULE ACCESSES EMPLOYEE MASTER FILE

PIV01  
 PROGRAM  
 ALIAS  
 1 VALIDATE-EMPLOYEE-TRANSACTIONS  
 DESCRIPTION  
 THIS PROGRAM VALIDATES EMPLOYEE TRANSACTIONS WHICH ARE ENTERED VIA V.D.U.

P2P01  
 PROGRAM  
 ALIAS  
 1 PRINT-EMPLOYEE-HISTORY-REPORT  
 DESCRIPTION  
 THIS PROGRAM PRINTS EMPLOYEE HISTORY REPORT

P2U01  
 PROGRAM  
 ALIAS  
 1 UPDATE-EMPLOYEE-HISTORY  
 DESCRIPTION

X210

THIS PROGRAM UPDATES EMPLOYEE HISTORY MASTER FILE

GLOSSARY CONTAINS 2 MODULES  
6 PROGRAMS  
8 MEMBERS PROCESSED

00110 DOES P1U01 USE UPDATE-CONTROL-REPORT.

YES - P1U01 USES UPDATE-CONTROL-REPORT

00111 DOES P1U01 USE EMPLOYEE-REPORT.

YES - P1U01 USES EMPLOYEE-REPORT

00112 WHICH PROGRAMS UPDATES P1U02MEMP.

THE FOLLOWING PROGRAMS SATISFY THE GIVEN CRITERIA

PROGRAM	P1U01
---------	-------

1 MEMBER IN TOTAL

00113 WHICH PROGRAMS INPUTS P1V01NVAL.

THE FOLLOWING PROGRAMS SATISFY THE GIVEN CRITERIA

PROGRAM	P1S01
---------	-------

1 MEMBER IN TOTAL

00114 WHICH PROGRAMS PASSES PM1.

THE FOLLOWING PROGRAMS SATISFY THE GIVEN CRITERIA

PROGRAM	P1U01
---------	-------

1 MEMBER IN TOTAL

*Interrogation using the DOES command results in a simple yes/no answer.*

*Interrogation using the WHICH command also enables relationships such as UPDATES, INPUTS, and PASSES to be interrogated in addition to the more general USES and CONSTITUTES already shown.*

X210

00115 REPORT P1U01.

The reader may care to compare this report of program P1U01 with that of the called module P1I01 shown in demonstration X200.

REPORT OF PROGRAM P1U01

EDITION 10 ENCODED BY MASTER AT 16.30.51 ON 18 JAN 1982  
STATUS CONV  
PROTECTION: NONE

ALIAS  
UPDATE-EMPLOYEE-MASTER-FILE

CATALOGUED AS  
BATCH  
UPDATE  
COBOL  
WEEKLY

DESCRIPTION  
THIS PROGRAM UPDATES EMPLOYEE MASTER FILE

NOTE  
DATES DEVELOPED  
MARCH 1979

DATE LAST AMENDED  
28 AUGUST 1979

LAST AMENDMENT  
ERROR CORRECTED IN UPDATE CONTROL REPORT

INSTRUCTIONS - RECOVERY  
RECOVER THE FILE P1U02MEMP USING THE LATEST SECURITY TAPE AND RERUN THE PROGRAM

PROGRAMMING EFFORT  
2 MAN-DAYS FOR FLOW-CHARTING  
3 MAN-DAYS FOR CODING  
2 MAN-DAYS FOR TEST DATA PREPARATION  
6 MAN-DAYS FOR COMPILATION AND PROGRAM TESTING

FREQUENCY WEEKLY BATCH

ACCESS-AUTHORITY MARY MORRIS

THIS MEMBER IS DIRECTLY REFERRED TO ONCE  
THIS MEMBER CONTAINS 9 DIRECT REFERENCES

PROGRAM P1U01

AUTHOR  
PETER LEWIS (ANALYST), RON STEVENSON (PROGRAMMER)

PARAMETERS NO DATA

INPUTS			
FILE		P1S01TSORT	
OUTPUTS			
FILE		UPDATE-CONTROL-REPORT	
UPDATES			
FILE		P1U02MEMP	
CALLS			
MODULE		P1I01	
	PASSING ITEM		PM1
	ITEM		PM2
	ITEM		PM3
	ITEM		PM4
CONTAINS			
MODULE		P1U02	

X210

00116 BULK PRINT ITEMS FROM "PM1" TO "PM5".

*The keyword BULK may be used in conjunction with a PRINT command to produce source record prints of more than one member, in this case for the process parameters PM1 to PM5. Note that PM5 is not printed as it exists only as a dummy in the dictionary.*

PRINT OF PM1  
ITEM  
00100 DEFAULTED-AS BINARY 1 CONTENTS RANGE 0 TO 4  
00200 ALIAS LOW-LEVEL 'UPDME'  
07000 DESCRIPTION  
09000 'PII01 UPDATE MODE SELECT'  
09100 NOTE  
10000 'SET PARAMETER VALUES:'  
10100 ' 1 GET'  
10200 ' 2 UPDATE'  
10300 ' 3 ADD'  
10400 ' 4 DELETE'  
10500 END OF PRINT

PRINT OF PM2  
ITEM  
00100 DEFAULTED-AS BINARY 1 CONTENTS RANGE 0 TO 3  
00200 ALIAS LOW-LEVEL 'UPLOGFM'  
07000 DESCRIPTION  
09000 'PII01 LOG FORMAT SELECT'  
09100 NOTE  
10000 'SET PARAMETER VALUES:'  
10100 ' 1 REPORT SUMMARY'  
10200 ' 2 CHANGE REPORT'  
10300 ' 3 ALL DETAILS'  
10400 END OF PRINT

PRINT OF PM3  
ITEM  
00100 DEFAULTED-AS BINARY 4  
00200 ALIAS LOW-LEVEL 'PRMOFST'  
07000 DESCRIPTION  
09000 'PARAMATER OFFSET IN INITIALISATION TABLE'  
09100 NOTE  
10000 'VALUE RETURNED BY PII01'  
10100 END OF PRINT

PRINT OF PM4  
ITEM  
00100 DEFAULTED-AS CHARACTER 1  
00200 ALIAS LOW-LEVEL 'INITERR'  
07000 DESCRIPTION  
09000 'PII01 RETURN CODE FLAG'  
09100 NOTE  
10000 'ERROR DISPLAY CHARACTER RETURNED BY PII01'  
10100 END OF PRINT

4 MEMBERS PROCESSED BY BULK PRINT

X210

00117 LIST CATALOGS.

LIST OF CATALOGUES MEMBER NAME	TYPE	USAGE	CONDITION	AC	ALT	REM	OWNER
ASSEMBLER	CATALOGUE						1
BATCH	CATALOGUE						7
COBOL	CATALOGUE						5
CODE	CATALOGUE						6
CONTROL	CATALOGUE						1
CONTROL-TOTAL	CATALOGUE						5
DAILY	CATALOGUE						1
DATE	CATALOGUE						2
DESCRIPTION	CATALOGUE						8
DISC	CATALOGUE						3
EMPLOYEE	CATALOGUE						20
INPUT FORM	CATALOGUE						1
MASTER	CATALOGUE						1
MONTHLY	CATALOGUE						3
NUMERIC	CATALOGUE						5
ONLINE	CATALOGUE						1
OUTPUT REPORT	CATALOGUE						3
PACKAGE	CATALOGUE						1
PERSONNEL	CATALOGUE						2
PRINT	CATALOGUE						2
SALARY	CATALOGUE						5
SORT	CATALOGUE						1
TAPE	CATALOGUE						1
TRANSACTIONS	CATALOGUE						2
UPDATE	CATALOGUE						3
UTILITY	CATALOGUE						1
VALIDATION	CATALOGUE						1
WEEKLY	CATALOGUE						7
WORK	CATALOGUE						1
LIST CONTAINS		29 CATALOGUES					
		0 MEMBERS IN TOTAL					

Catalogue keywords provide a means of interrogating the dictionary independent of hierarchical structure.

To do this sensibly, a convention needs to be adopted. Of the many different conventions that could be used under DATAMANAGER, that used for the example dictionary is shown in Figure 2.4 in Chapter 2.

00118 WHAT FORMS "BATCH".

THE FOLLOWING SELECTED MEMBERS SATISFY THE GIVEN CRITERIA

MODULE	P1I01
PROGRAM	P1P01
PROGRAM	P1S01
PROGRAM	P1U01
MODULE	P1U02
PROGRAM	P2P01
PROGRAM	P2U01

7 MEMBERS IN TOTAL

Interrogation via catalogue keywords may be simple:

00119 WHAT FORMS "BATCH", "WEEKLY".

THE FOLLOWING SELECTED MEMBERS SATISFY THE GIVEN CRITERIA

MODULE	P1I01
PROGRAM	P1P01
PROGRAM	P1S01
PROGRAM	P1U01
MODULE	P1U02

5 MEMBERS IN TOTAL

00120 WHICH PROGRAMS FORM "BATCH" AND OUTPUTS  
00121 UPDATE-CONTROL-REPORT.

THE FOLLOWING PROGRAMS SATISFY THE GIVEN CRITERIA

PROGRAM	P1U01
---------	-------

1 MEMBER IN TOTAL

... or may be compounded with interrogation via relationships:

X210

DM01541I 00122 KEEP WHAT FORMS "BATCH", "WEEKLY".  
5 ENTRIES ADDED TO KEPT-DATA LIST

DM01541I 00123 ALSO KEEP WHAT FORMS "BATCH", "MONTHLY".  
2 ENTRIES ADDED TO KEPT-DATA LIST

00124 GLOSSARY KEPT-DATA GIVING ALIAS, NOTE, COMMENT.

... or may be used in association  
with KEEP and ALSO KEEP commands to  
build up a kept-data list for  
subsequent processing.

GLOSSARY OF SELECTED MEMBERS

PII01  
MODULE  
ALIAS  
1 SETUP-UPDATE-PARAMETERS  
NOTE  
DATES DEVELOPED  
MARCH 1979

INSTRUCTIONS - RECOVERY  
THIS IS A STANDARD UTILITY DEVELOPED BY THE  
TECHNICAL SUPPORT PROGRAMMER. CONTACT HIM  
FOR FURTHER ACTION

PROCESS PARAMETERS  
PM1 BINARY HALF WORD SELECTS UPDATE MODE  
  
PM2 BINARY HALF WORD SELECTS LOG FORMAT  
  
PM3 BINARY HALF WORD PARAMETER OFFSET  
  
PM4 CHARACTER 1 BYTE RETURN CODE FLAG  
  
PM5 CHARACTER 4 BYTES RESERVED

PIP01  
PROGRAM  
ALIAS  
1 PRINT-EMPLOYEE-REPORT  
NOTE  
DATES DEVELOPED  
APRIL 1979

INSTRUCTIONS - RECOVERY  
RE-RUN THE PROGRAM

PROGRAMMING EFFORT  
3 MAN-DAYS FOR FLOW-CHARTING, CODING AND  
TEST DATA PREPARATION  
3 MAN-DAYS FOR COMPILATION AND PROGRAM  
TESTING

COMMENT  
ALWAYS INCLUDE A LINE-UP ROUTINE IN A PROGRAM  
WHICH PRODUCES REPORT(S) ON PRE-PRINTED  
STATIONERY

PIS01  
PROGRAM  
ALIAS  
1 SORT-EMPLOYEE-TRANSACTIONS  
NOTE  
DATES DEVELOPED  
MARCH 1979

INSTRUCTIONS - RECOVERY  
NO FILE TO BE RECOVERED

PIU01  
PROGRAM  
ALIAS  
1 UPDATE-EMPLOYEE-MASTER-FILE  
NOTE  
DATES DEVELOPED  
MARCH 1979

DATE LAST AMENDED  
28 AUGUST 1979

LAST AMENDMENT  
ERROR CORRECTED IN UPDATE CONTROL REPORT

INSTRUCTIONS - RECOVERY  
RECOVER THE FILE PIU02MEMP USING THE LATEST  
SECURITY TAPE AND RERUN THE PROGRAM

PROGRAMMING EFFORT  
2 MAN-DAYS FOR FLOW-CHARTING  
3 MAN-DAYS FOR CODING  
2 MAN-DAYS FOR TEST DATA PREPARATION  
6 MAN-DAYS FOR COMPILATION AND PROGRAM  
TESTING

PIU02  
MODULE  
ALIAS

X210

1 ACCESS-EMPLOYEE-MASTER-FILE

NOTE  
DATES DEVELOPED  
APRIL 1979

PROGRAMMING EFFORT  
2 MAN-DAYS

COMMENT  
IF A RECORD IS UPDATED AND DELETED IN  
A RUN, ALWAYS PRINT A WARNING MESSAGE

P2P01

PROGRAM  
ALIAS  
1 PRINT-EMPLOYEE-HISTORY-REPORT

NOTE  
INSTRUCTIONS - RECOVERY  
RE-RUN THE PROGRAM

PROGRAMMING EFFORT  
4 MAN-DAYS

P2U01

PROGRAM  
ALIAS  
1 UPDATE-EMPLOYEE-HISTORY

NOTE  
DATES DEVELOPED  
MAY 1979

INSTRUCTIONS - CONTROL  
ENTER NEW TAPE NUMBER IN THE TAPE LOG FILE

INSTRUCTIONS - RECOVERY  
RE-RUN THE PROGRAM

PROGRAMMING EFFORT  
5 MAN-DAYS

GLOSSARY CONTAINS 2 MODULES  
5 PROGRAMS  
7 MEMBERS PROCESSED



X210

00127 WHOSE ALIAS IS "TRANSREC".  
TRANSREC IS  
THE LOW-LEVEL ALIAS OF GROUP TRANSACTION-RECORD  
00128 WHAT IS "TRANSREC".

TRANSREC IS  
THE LOW-LEVEL ALIAS OF GROUP TRANSACTION-RECORD

00129 GLOSSARY ITEMS GIVING LOW-LEVEL ALIASES.

GLOSSARY OF ITEMS

COLLEGE-NAME  
ITEM  
ALIAS  
LOW-LEVEL EMPCOL

EMPLOYEE-AFTER-UPDATE  
ITEM  
ALIAS  
LOW-LEVEL EMPNAUPD

EMPLOYEE-BEFORE-UPDATE  
ITEM  
ALIAS  
LOW-LEVEL EMPNBUPD

EMPLOYEE-CODE  
ITEM  
ALIAS  
LOW-LEVEL EMPCODE

EMPLOYEE-DEPARTMENT  
ITEM  
ALIAS  
LOW-LEVEL EMPDEPT

EMPLOYEE-LEAVERS  
ITEM  
ALIAS  
LOW-LEVEL EMPLEAVE

EMPLOYEE-NAME  
ITEM  
ALIAS  
LOW-LEVEL EMPNAME

EMPLOYEE-NEWCOMERS  
ITEM  
ALIAS  
LOW-LEVEL EMPNEW

EMPLOYEE-SALARY  
ITEM  
ALIAS  
LOW-LEVEL EMPSAL

EMPLOYEE-STREET  
ITEM  
ALIAS  
LOW-LEVEL EMPSTR

EMPLOYEE-TELEPHONE  
ITEM  
ALIAS  
LOW-LEVEL EMPTELNO

EMPLOYEE-TOWN  
ITEM  
ALIAS  
LOW-LEVEL EMPDOWN

EMPLOYING-COMPANY  
ITEM  
ALIAS  
LOW-LEVEL EMPEMP

EXPERIENCE-CODE  
ITEM  
ALIAS  
LOW-LEVEL EMPPOST

EXPERIENCE-YRS  
ITEM  
ALIAS  
LOW-LEVEL EMPYRS

PM1  
ITEM  
ALIAS  
LOW-LEVEL UPDMDE

PM2

Interrogation may also be performed  
via aliases.

Where more than one convention is used  
for aliases (the example dictionary uses  
aliases for full-names, coded-names, and  
for low-level program names depending  
on member type), then more specific  
output is available using the GLOSSARY  
command, shown here for low-level item  
aliases.

X210

ITEM  
ALIAS  
LOW-LEVEL UPLOGFMT

PM3  
ITEM  
ALIAS  
LOW-LEVEL PRMOFST

PM4  
ITEM  
ALIAS  
LOW-LEVEL INITERR

PM5  
ITEM

QUALIFICATIONS  
ITEM  
ALIAS  
LOW-LEVEL EMPQUA

REPORT-PAGE  
ITEM  
ALIAS  
LOW-LEVEL PAGENUMB

REPORT-TITLE  
ITEM  
ALIAS  
LOW-LEVEL REPTIT

SALARY-AFTER-UPDATE  
ITEM  
ALIAS  
LOW-LEVEL EMPSAUPD

SALARY-BEFORE-UPDATE  
ITEM  
ALIAS  
LOW-LEVEL EMPSBUPD

SOCIAL-SECURITY-CODE  
ITEM  
ALIAS  
LOW-LEVEL EMPSSC

STANDARD-DATE  
ITEM  
ALIAS  
LOW-LEVEL STDATE

TAX-CODE  
ITEM  
ALIAS  
LOW-LEVEL EMP TAX

TRANSACTION-CODE  
ITEM  
ALIAS  
LOW-LEVEL EMPTRANS

TRANSACTION-DATA  
ITEM  
ALIAS  
LOW-LEVEL EMPTRADA

TRANSACTION-DATE  
ITEM  
ALIAS  
LOW-LEVEL EMPDATE

TRANSACTION-TOTAL  
ITEM  
ALIAS  
LOW-LEVEL EMP TTRAN

GLOSSARY CONTAINS 32 ITEMS





X230

```

00149 PRINT P2U01.

PRINT OF P2U01
PROGRAM
00100 INPUTS P1S01TSORT,P2U01TEMP
00200 OUTPUTS P2U01TEMP
00300
01000 AUTHOR 'JOHN COOPER (ANALYST), CATHY JOHNSON (PROGRAMMER)'
07000 ALIAS 'UPDATE-EMPLOYEE-HISTORY'
08000 CATALOGUE 'BATCH', 'UPDATE', 'COBOL', 'MONTHLY'
09000 DESCRIPTION
09100 'THIS PROGRAM UPDATES EMPLOYEE HISTORY MASTER FILE'
10000 NOTE
10100 'DATES DEVELOPED'
10200 'MAY 1979'
10300
10400 'INSTRUCTIONS - CONTROL'
10500 'ENTER NEW TAPE NUMBER IN THE TAPE LOG FILE'
10600
10700 'INSTRUCTIONS - RECOVERY'
10800 'RE-RUN THE PROGRAM'
10900
11000 'PROGRAMMING EFFORT'
11100 '5 MAN-DAYS'
20000 ACCESS-AUTHORITY 'JOHN COOPER'
23000 FREQUENCY MONTHLY
END OF PRINT

```

*We are now going to change the definition of an existing program, P2U01 to call the new module. So let us obtain a print of the member, as editing is going to be based on the line numbers automatically generated by DATAMANAGER when a member definition is entered into the dictionary. Unless the user states otherwise, lines are numbered in increments of 100 to allow for future changes.*

```

00150 MODIFY P2U01.
00151 150 CALLS P2P02
00152 180 AT "EMHS0023" PASSING TRANSACTION-RECORD
00153

```

*We use a MODIFY command to edit the source record of P2U01 and then to encode the new definition. Note that each line to be inserted is prefixed with a line number to determine its position.*

```

DMO1180I ALTERATION HAS CREATED NEW SOURCE RECORD
DMO1296I ENCODING OF P2U01
PROGRAM
00100 CALLS P2P02
00150 AT "EMHS0023" PASSING TRANSACTION-RECORD
00200 INPUTS P1S01TSORT,P2U01TEMP
00300 OUTPUTS P2U01TEMP
01000 AUTHOR 'JOHN COOPER (ANALYST), CATHY JOHNSON (PROGRAMMER)'
07000 ALIAS 'UPDATE-EMPLOYEE-HISTORY'
08000 CATALOGUE 'BATCH', 'UPDATE', 'COBOL', 'MONTHLY'
09000 DESCRIPTION
09100 'THIS PROGRAM UPDATES EMPLOYEE HISTORY MASTER FILE'
10000 NOTE
10100 'DATES DEVELOPED'
10200 'MAY 1979'
10300
10400 'INSTRUCTIONS - CONTROL'
10500 'ENTER NEW TAPE NUMBER IN THE TAPE LOG FILE'
10600
10700 'INSTRUCTIONS - RECOVERY'
10800 'RE-RUN THE PROGRAM'
10900
11000 'PROGRAMMING EFFORT'
11100 '5 MAN-DAYS'
20000 ACCESS-AUTHORITY 'JOHN COOPER'
23000 FREQUENCY MONTHLY
DMO1280I P2U01 SUCCESSFULLY ENCODED

```

```
00154 WHAT FORMS "SPECIAL", "COBOL".
```

*We can now verify that our changes have been incorporated into the dictionary, both for the new module and the changed program.*

THE FOLLOWING SELECTED MEMBERS SATISFY THE GIVEN CRITERIA

```
MODULE P2P02
```

1 MEMBER IN TOTAL

```
00155 WHICH MEMBER PASSES TRANSACTION-RECORD DIRECTLY.
```

THE FOLLOWING SELECTED MEMBERS SATISFY THE GIVEN CRITERIA

```
PROGRAM P2U01
```

1 MEMBER IN TOTAL

X230

00156 KEEP WHICH ITEMS CONSTITUTE TRANSACTION-RECORD.  
 DM01541I 5 ENTRIES ADDED TO KEPT-DATA LIST

00157 BULK PRINT KEPT-DATA ALPHABETICALLY.

*We are now going to modify all the items contained in TRANSACTION-RECORD to contain a USER-EXIT clause to our new module P2P02. Firstly we obtain a print of all the items concerned and decide to insert the new line as line number 2000 in each member.*

PRINT OF EMPLOYEE-CODE  
 ITEM  
 00200 ENTERED-AS ALPHANUMERIC 4  
 00300 HELD-AS NUMERIC 4 CONTENTS RANGE 1000 TO 8000  
 00400 REPORTED-AS PICTURE '9999'  
 07000 ALIAS LOW-LEVEL 'EMPCODE'  
 08000 CATALOG 'EMPLOYEE', 'CODE'  
 09000 DESCRIPTION  
 09100 'STANDARD EMPLOYEE CODE'  
 10000 NOTE  
 10100 'INPUT FORM XYZ'  
 10200 ' EMPLOYEE-TRANSACTIONS-FORM'  
 END OF PRINT

PRINT OF STANDARD-DATE  
 ITEM  
 00200 ENTERED-AS CHARACTER 8 CONTENTS FORMAT 'DD/MM/YY'  
 00300 HELD-AS NUMERIC-CHARACTER 6  
 00400 REPORTED-AS PICTURE '99X99X99' CONTENTS FORMAT 'DD/MM/YY'  
 00500 USAGE DATE  
 07000 ALIAS LOW-LEVEL 'STDATE'  
 08000 CATALOG 'EMPLOYEE', 'DATE'  
 09000 DESCRIPTION  
 09100 'PERSONNEL STANDARD DATE FORMATS'  
 END OF PRINT

PRINT OF TRANSACTION-CODE  
 ITEM  
 00200 ENTERED-AS CHARACTER 2  
 00300 HELD-AS NUMERIC 2 CONTENTS RANGE 10 TO 90  
 00400 REPORTED-AS PICTURE '99'  
 07000 ALIAS LOW-LEVEL 'EMPTRANS'  
 08000 CATALOG 'EMPLOYEE', 'CODE'  
 09000 DESCRIPTION  
 09100 'EMPLOYEE TRANSACTION CODE'  
 END OF PRINT

PRINT OF TRANSACTION-DATA  
 ITEM  
 00200 ENTERED-AS CHARACTER 40  
 00300 HELD-AS CHARACTER 40  
 00400 REPORTED-AS PICTURE "X(40)"  
 07000 ALIAS LOW-LEVEL 'EMPTRADA'  
 08000 CATALOG 'EMPLOYEE', 'DESCRIPTION', 'NUMERIC'  
 09000 DESCRIPTION  
 09100 'TRANSACTION DATA INPUT VIA V.D.U.'  
 10000 NOTE  
 10100 'INPUT FORM'  
 10200 ' EMPLOYEE-TRANSACTIONS-FORM'  
 10300 ' '  
 10400 'ACCURACY'  
 10500 ' PERSONNEL DEPARTMENT IS RESPONSIBLE'  
 10600 ' FOR ENSURING THAT DATA IS COMPLETELY'  
 10700 ' CORRECT'  
 END OF PRINT

PRINT OF TRANSACTION-DATE  
 ITEM  
 00200 ENTERED-AS NAME STANDARD-DATE  
 00300 HELD-AS NAME STANDARD-DATE  
 00400 REPORTED-AS NAME STANDARD-DATE  
 07000 ALIAS LOW-LEVEL 'EMPDATE'  
 08000 CATALOG 'EMPLOYEE', 'DATE'  
 09000 DESCRIPTION  
 09100 'EMPLOYEE TRANSACTION DATE'  
 10000 NOTE  
 10100 'ACCURACY'  
 10200 ' DATE IS TAKEN FROM OPERATING SYSTEM'  
 10300 ' SUPERVISOR AT THE TIME OF INPUT'  
 END OF PRINT

5 MEMBERS PROCESSED BY BULK PRINT

X230

```

00158 PERFORM "MODIFY *."
00159      "2000 USER-EXIT P2P02"
00160      " "
00161      KEPT-DATA NO-TERMINATOR.
DM01551I      15 GENERATED INPUT LINES

DM01180I      ALTERATION HAS CREATED NEW SOURCE RECORD
DM01296I      ENCODING OF TRANSACTION-CODE
00100      ITEM
00200      ENTERED-AS CHARACTER 2
00300      HELD-AS NUMERIC 2 CONTENTS RANGE 10 TO 90
00400      REPORTED-AS PICTURE '99'
02000      USER-EXIT P2P02
07000      ALIAS LOW-LEVEL 'EMPTRANS'
08000      CATALOG 'EMPLOYEE', 'CODE'
09000      DESCRIPTION
09100      'EMPLOYEE TRANSACTION CODE'
DM01280I      TRANSACTION-CODE SUCCESSFULLY ENCODED

DM01180I      ALTERATION HAS CREATED NEW SOURCE RECORD
DM01296I      ENCODING OF EMPLOYEE-CODE
00100      ITEM
00200      ENTERED-AS ALPHANUMERIC 4
00300      HELD-AS NUMERIC 4 CONTENTS RANGE 1000 TO 8000
00400      REPORTED-AS PICTURE '9999'
02000      USER-EXIT P2P02
07000      ALIAS LOW-LEVEL 'EMPCODE'
08000      CATALOG 'EMPLOYEE', 'CODE'
09000      DESCRIPTION
09100      'STANDARD EMPLOYEE CODE'
10000      NOTE
10100      'INPUT FORM XYZ'
10200      'EMPLOYEE-TRANSACTIONS-FORM'
DM01280I      EMPLOYEE-CODE SUCCESSFULLY ENCODED

DM01180I      ALTERATION HAS CREATED NEW SOURCE RECORD
DM01296I      ENCODING OF TRANSACTION-DATA
00100      ITEM
00200      ENTERED-AS CHARACTER 40
00300      HELD-AS CHARACTER 40
00400      REPORTED-AS PICTURE "X(40)"
02000      USER-EXIT P2P02
07000      ALIAS LOW-LEVEL 'EMPTRADA'
08000      CATALOG 'EMPLOYEE', 'DESCRIPTION', 'NUMERIC'
09000      DESCRIPTION
09100      'TRANSACTION DATA INPUT VIA V.D.U.'
10000      NOTE
10100      'INPUT FORM'
10200      'EMPLOYEE-TRANSACTIONS-FORM'
10300      ' '
10400      'ACCURACY'
10500      ' PERSONNEL DEPARTMENT IS RESPONSIBLE'
10600      ' FOR ENSURING THAT DATA IS COMPLETELY'
10700      ' CORRECT'
DM01280I      TRANSACTION-DATA SUCCESSFULLY ENCODED

DM01180I      ALTERATION HAS CREATED NEW SOURCE RECORD
DM01296I      ENCODING OF TRANSACTION-DATE
00100      ITEM
00200      ENTERED-AS NAME STANDARD-DATE
00300      HELD-AS NAME STANDARD-DATE
00400      REPORTED-AS NAME STANDARD-DATE
02000      USER-EXIT P2P02
07000      ALIAS LOW-LEVEL 'EMPDATE'
08000      CATALOG 'EMPLOYEE', 'DATE'
09000      DESCRIPTION
09100      'EMPLOYEE TRANSACTION DATE'
10000      NOTE
10100      'ACCURACY'
10200      ' DATE IS TAKEN FROM OPERATING SYSTEM'
10300      ' SUPERVISOR AT THE TIME OF INPUT'
DM01280I      TRANSACTION-DATE SUCCESSFULLY ENCODED

DM01180I      ALTERATION HAS CREATED NEW SOURCE RECORD
DM01296I      ENCODING OF STANDARD-DATE
00100      ITEM
00200      ENTERED-AS CHARACTER 8 CONTENTS FORMAT 'DD/MM/YY'
00300      HELD-AS NUMERIC-CHARACTER 6
00400      REPORTED-AS PICTURE '99X99X99' CONTENTS FORMAT 'DD/MM/YY'
00500      USAGE DATE
02000      USER-EXIT P2P02
07000      ALIAS LOW-LEVEL 'STDATE'
08000      CATALOG 'EMPLOYEE', 'DATE'
09000      DESCRIPTION
09100      'PERSONNEL STANDARD DATE FORMATS'
DM01280I      STANDARD-DATE SUCCESSFULLY ENCODED

```

*Then we use a combination of PERFORM and MODIFY on the members in the kept-data list generated earlier, to action the change to all members.*

X230

00177 REPORT TRANSACTION-CODE.

*Having made the changes we now produce  
a report on one of the changed items*

REPORT OF ITEM TRANSACTION-CODE

EDITION 45 ENCODED BY ANALYST AT 13.28.24 ON 10 AUG 1982  
STATUS CONV  
PROTECTION: NONE

ALIAS  
LOW-LEVEL EMPTRANS

CATALOGUED AS  
EMPLOYEE  
CODE

DESCRIPTION  
EMPLOYEE TRANSACTION CODE

THIS MEMBER IS DIRECTLY REFERRED TO 4 TIMES  
THIS MEMBER CONTAINS 1 DIRECT REFERENCE

ITEM TRANSACTION-CODE

ENTERED-AS VERSION 1  
CHARACTERS 2

HELD-AS VERSION 1  
NUMERIC-CHARACTER 2  
CONTENTS  
RANGE 10 TO 90

REPORTED-AS VERSION 1  
USER-EXIT P2P02  
PICTURE '9(2)'

X230

```

00178 PERFORM "MODIFY *."
00179 "DELETE 2000"
00180 ".*"
00181 KEPT-DATA NO-TERMINATOR.
DMO1551I 15 GENERATED INPUT LINES

DMO1187I 1 LINES DELETED
DMO1180I ALTERATION HAS CREATED NEW SOURCE RECORD
DMO1296I ENCODING OF TRANSACTION-CODE
00100 ITEM
00200 ENTERED-AS CHARACTER 2
00300 HELD-AS NUMERIC 2 CONTENTS RANGE 10 TO 90
00400 REPORTED-AS PICTURE '99'
07000 ALIAS LOW-LEVEL 'EMPTRANS'
08000 CATALOG 'EMPLOYEE', 'CODE'
09000 DESCRIPTION
09100 'EMPLOYEE TRANSACTION CODE'
DMO1280I TRANSACTION-CODE SUCCESSFULLY ENCODED

DMO1187I 1 LINES DELETED
DMO1180I ALTERATION HAS CREATED NEW SOURCE RECORD
DMO1296I ENCODING OF EMPLOYEE-CODE
00100 ITEM
00200 ENTERED-AS ALPHANUMERIC 4
00300 HELD-AS NUMERIC 4 CONTENTS RANGE 1000 TO 8000
00400 REPORTED-AS PICTURE '9999'
07000 ALIAS LOW-LEVEL 'EMPCODE'
08000 CATALOG 'EMPLOYEE', 'CODE'
09000 DESCRIPTION
09100 'STANDARD EMPLOYEE CODE'
10000 NOTE
10100 'INPUT FORM XYZ'
10200 'EMPLOYEE-TRANSACTIONS-FORM'
DMO1280I EMPLOYEE-CODE SUCCESSFULLY ENCODED

DMO1187I 1 LINES DELETED
DMO1180I ALTERATION HAS CREATED NEW SOURCE RECORD
DMO1296I ENCODING OF TRANSACTION-DATA
00100 ITEM
00200 ENTERED-AS CHARACTER 40
00300 HELD-AS CHARACTER 40
00400 REPORTED-AS PICTURE 'X(40)'
07000 ALIAS LOW-LEVEL 'EMPRADA'
08000 CATALOG 'EMPLOYEE', 'DESCRIPTION', 'NUMERIC'
09000 DESCRIPTION
09100 'TRANSACTION DATA INPUT VIA V.D.U.'
10000 NOTE
10100 'INPUT FORM'
10200 'EMPLOYEE-TRANSACTIONS-FORM'
10300 '
10400 'ACCURACY'
10500 'PERSONNEL DEPARTMENT IS RESPONSIBLE'
10600 'FOR ENSURING THAT DATA IS COMPLETELY'
10700 'CORRECT'
DMO1280I TRANSACTION-DATA SUCCESSFULLY ENCODED

DMO1187I 1 LINES DELETED
DMO1180I ALTERATION HAS CREATED NEW SOURCE RECORD
DMO1296I ENCODING OF TRANSACTION-DATE
00100 ITEM
00200 ENTERED-AS NAME STANDARD-DATE
00300 HELD-AS NAME STANDARD-DATE
00400 REPORTED-AS NAME STANDARD-DATE
07000 ALIAS LOW-LEVEL 'EMPRDATE'
08000 CATALOG 'EMPLOYEE', 'DATE'
09000 DESCRIPTION
09100 'EMPLOYEE TRANSACTION DATE'
10000 NOTE
10100 'ACCURACY'
10200 'DATE IS TAKEN FROM OPERATING SYSTEM'
10300 'SUPERVISOR AT THE TIME OF INPUT'
DMO1280I TRANSACTION-DATE SUCCESSFULLY ENCODED

DMO1187I 1 LINES DELETED
DMO1180I ALTERATION HAS CREATED NEW SOURCE RECORD
DMO1296I ENCODING OF STANDARD-DATE
00100 ITEM
00200 ENTERED-AS CHARACTER 8 CONTENTS FORMAT 'DD/MM/YY'
00300 HELD-AS NUMERIC-CHARACTER 6
00400 REPORTED-AS PICTURE '99X99X99' CONTENTS FORMAT 'DD/MM/YY'
00500 USAGE DATE
07000 ALIAS LOW-LEVEL 'STDAT'
08000 CATALOG 'EMPLOYEE', 'DATE'
09000 DESCRIPTION
09100 'PERSONNEL STANDARD DATE FORMATS'
DMO1280I STANDARD-DATE SUCCESSFULLY ENCODED

```

... and then use the same kept-data list in another PERFORM/MODIFY combination to undo the changes made for the purpose of this demonstration

X230

```
00197 MODIFY P2U01.
00198 DELETE 150 TO 160
DM01187I          2 LINES DELETED
00199
DM01180I          ALTERATION HAS CREATED NEW SOURCE RECORD
DM01296I          ENCODING OF P2U01
00100          PROGRAM
00200          INPUTS P1S01TSORT,P2U01TEMP
00300          OUTPUTS P2U01TEMP
01000          AUTHOR 'JOHN COOPER (ANALYST), CATHY JOHNSON (PROGRAMMER)'
07000          ALIAS 'UPDATE-EMPLOYEE-HISTORY'
08000          CATALOGUE 'BATCH', 'UPDATE', 'COBOL', 'MONTHLY'
09000          DESCRIPTION
09100          'THIS PROGRAM UPDATES EMPLOYEE HISTORY MASTER FILE'
10000          NOTE
10100          'DATES DEVELOPED'
10200          ' MAY 1979'
10300          '
10400          'INSTRUCTIONS - CONTROL'
10500          ' ENTER NEW TAPE NUMBER IN THE TAPE LOG FILE'
10600          '
10700          'INSTRUCTIONS - RECOVERY'
10800          ' RE-RUN THE PROGRAM'
10900          '
11000          'PROGRAMMING EFFORT'
11100          ' 5 MAN-DAYS'
20000          ACCESS-AUTHORITY 'JOHN COOPER'
23000          FREQUENCY MONTHLY
DM01280I          P2U01 SUCCESSFULLY ENCODED

00200 REMOVE P2P02.
DM01287I          ITEM EMP-LIST PURGED FROM DICTIONARY - NO LONGER USED IN THIS STATUS
DM01251I          P2P02 REMOVED FROM DICTIONARY
```

... and change P2U01 back to its former definition

... and finally remove P2P02 to leave the dictionary in an unchanged state.

COMMANDS DEMONSTRATED	DESCRIPTION
STATUS "CONV". AUTHORITY "ANALYST". PRODUCE RECORD-LAYOUTS FROM P1U02MEMP PRINT GIVING DESCRIPTIONS. PRODUCE COBOL FROM P1U02MEMP NOGEN PRINT USING HELD-AS GIVING DESCRIPTIONS, INITIAL-VALUES. PRODUCE PL/1 FROM EMPLOYEE-MASTER-RECORD PRINT NOGEN USING HELD-AS REPLACING "EMPLOYEE" WITH "EMP" GIVING DESCRIPTIONS. PRODUCE BAL FROM EMPLOYEE-MASTER-RECORD NOGEN PRINT USING HELD-AS ALIAS LOW-LEVEL GIVING DESCRIPTIONS.	DATAMANAGER EXAMPLE DICTIONARY - SOURCE LANGUAGE GENERATION  To show use of the Source Language Generation facility to generate record layouts and source language descriptions from the dictionary in COBOL, PL/1 and Assembler.

00203 STATUS "CONV".  
 DM00096I NON-FROZEN STATUS CONV RECOGNISED

00204 AUTHORITY "ANALYST".  
 DM01060I AUTHORITY RECOGNISED



X250

00207 PRODUCE COBOL FROM P1U02MEMP NOGEN PRINT  
00208 USING HELD-AS GIVING DESCRIPTIONS, INITIAL-VALUES.

```
FD P1U02MEMP
BLOCK CONTAINS 205 CHARACTERS
LABEL RECORDS ARE STANDARD
DATA RECORD IS EMPLOYEE-MASTER-RECORD.
* THIS FILE STORES PERSONAL DETAILS OF EMPLOYEE
* 01 EMPLOYEE-MASTER-RECORD.
* EMPLOYEE MASTER FILE RECORD
* 02 EMPLOYEE-CODE PIC 9(4).
* STANDARD EMPLOYEE CODE
* 02 EMPLOYEE-IDENTIFICATION.
* NAME, ADDRESS AND TELEPHONE NUMBER OF AN EMPLOYEE
* 04 EMPLOYEE-NAME PIC X(30).
* EMPLOYEE SURNAME, FIRST NAME AND MIDDLE NAME
* 04 EMPLOYEE-STREET PIC X(40).
* EMPLOYEE STREET NAME INCLUDING ANY APARTMENT NUMBER
* 04 EMPLOYEE-TOWN PIC X(20).
* EMPLOYEE HOME TOWN NAME AND POST CODE
* 04 EMPLOYEE-TELEPHONE PIC 9(10).
* EMPLOYEE TELEPHONE NUMBER INCLUDING CODE
* 02 EMPLOYEE-DEPARTMENT PIC 999.
* EMPLOYEE DEPARTMENT CODE
* 02 EMPLOYEE-SALARY PIC 9(5).
* YEARLY SALARY. INCLUDES GEOGRAPHICAL ALLOWANCES
* 02 EDUCATION.
* EDUCATION RECEIVED BY EMPLOYEE INCLUDING PROFESSIONAL TRAINING
* 04 COLLEGE-NAME PIC X(30).
* NAME OF COLLEGE/FACULTY
* 04 QUALIFICATIONS PIC X(10).
* QUALIFICATION OBTAINED AND DATE OF CERTIFICATE (SHOWN AS MM/YY)
* 02 EXPERIENCE.
* EXPERIENCE GAINED (INCLUDING EXPERIENCE GAINED WITHIN THIS ORGANISATION)
* 04 EMPLOYING-COMPANY PIC X(30).
* NAME OF OUTSIDE COMPANY OR INTERNAL DEPARTMENT OF THIS ORGANISATION
* 04 EXPERIENCE-CODE PIC 99.
* EXPERIENCE CODE TAKEN FROM STANDARD CODING BOOK
* 04 EXPERIENCE-YRS PIC 99.
* NUMBER OF YEARS EXPERIENCE
* 02 TAX-CODE PIC 9(4).
* EMPLOYEE TAX CODE SENT BY TAX OFFICE
* 02 SOCIAL-SECURITY-CODE PIC X(15).
* CURRENT EMPLOYEE SOCIAL SECURITY CODE
```

DM02217I

P1U02MEMP SUCCESSFULLY GENERATED

*Let us now generate COBOL file and data descriptions from the same file member. NOGEN and PRINT keywords are specified as we require only a source listing at an on-line terminal. The USING HELD-AS clause specifies that the HELD-AS form of member definitions is to be used. The GIVING clause specifies that DESCRIPTION clauses are to be generated as source language comments, and that initial values are to be generated as VALUE clauses.*

*The format of the generated output shown results from standard DATAMANAGER installation defaults - output formats are tailorable via macro keywords.*

X250

00209 PRODUCE PL/I FROM EMPLOYEE-MASTER-RECORD PRINT  
00210 NOGEN USING HELD-AS REPLACING "EMPLOYEE" WITH "EMP"  
00211 GIVING DESCRIPTIONS.

```
DCL
1 EMP_MASTER_RECORD /*EMPLOYEE MASTER FILE RECORD*/
/*D */
3 EMP_CODE PIC '(4)9'
/*STANDARD EMPLOYEE CODE */
3 EMP_IDENTIFICATION /*NAME, ADDRESS AND TELEPHONE*/
/*E NUMBER OF AN EMPLOYEE */
5 EMP_NAME CHAR (30)
/*EMPLOYEE SURNAME, FIRST NA*/
/*ME AND MIDDLE NAME */
5 EMP_STREET CHAR (40)
/*EMPLOYEE STREET NAME INCLU*/
/*DING ANY APARTMENT NUMBER */
5 EMP_TOWN CHAR (20)
/*EMPLOYEE HOME TOWN NAME AN*/
/*D POST CODE */
5 EMP_TELEPHONE PIC '(10)9'
/*EMPLOYEE TELEPHONE NUMBER */
/*INCLUDING CODE */
3 EMP_DEPARTMENT PIC '999'
/*EMPLOYEE DEPARTMENT CODE */
3 EMP_SALARY PIC '(5)9'
/*YEARLY SALARY. INCLUDES GE*/
/*OGRAPHICAL ALLOWANCES */
3 EDUCATION /*EDUCATION RECEIVED BY EMPL*/
/*OYEE INCLUDING PROFESSIONA*/
/*L TRAINING */
5 COLLEGE_NAME CHAR (30)
/*NAME OF COLLEGE/FACULTY */
5 QUALIFICATIONS CHAR (10)
/*QUALIFICATION OBTAINED AND*/
/* DATE OF CERTIFICATE (SHOW*/
/*N AS MM/YY) */
3 EXPERIENCE /*EXPERIENCE GAINED (INCLUDI*/
/*NG EXPERIENCE GAINED WITHI*/
/*N THIS ORGANISATION) */
5 EMPLOYING_COMPANY CHAR (30)
/*NAME OF OUTSIDE COMPANY OR*/
/* INTERNAL DEPARTMENT OF TH*/
/*IS ORGANISATION */
5 EXPERIENCE_CODE PIC '99'
/*EXPERIENCE CODE TAKEN FROM*/
/* STANDARD CODING BOOK */
5 EXPERIENCE_YRS PIC '99'
/*NUMBER OF YEARS EXPERIENCE*/
PIC '(4)9'
3 TAX_CODE /*EMPLOYEE TAX CODE SENT BY */
/*TAX OFFICE */
3 SOCIAL_SECURITY_CODE CHAR (15)
/*CURRENT EMPLOYEE SOCIAL SE*/
/*CURITY CODE */;
```

DM02217I

EMPLOYEE-MASTER-RECORD SUCCESSFULLY GENERATED

*We now produce PL/I data descriptions from EMPLOYEE-MASTER-RECORD, and, as for COBOL we specify PRINT, NOGEN and USING the HELD-AS form. Source language comments are generated from DESCRIPTION clauses. In addition we use a REPLACING clause to generate "EMP-" instead of "EMPLOYEE-".*

*As with source language generation of COBOL, output formats are tailorable.*

X250

00212 PRODUCE BAL FROM EMPLOYEE-MASTER-RECORD NOGEN PRINT  
00213 USING HELD-AS ALIAS LOW-LEVEL GIVING DESCRIPTIONS.

```

EMPASRC DS OCL205 EMPLOYEE MASTER FILE RECORD
EMPCODE DS CL4 STANDARD EMPLOYEE CODE
EMPIDEN DS OCL100 NAME, ADDRESS AND TELEPHONE NUM
* BER OF AN EMPLOYEE
EMPNAME DS CL30 EMPLOYEE SURNAME, FIRST NAME AN
* D MIDDLE NAME
EMPSTR DS CL40 EMPLOYEE STREET NAME INCLUDING
* ANY APARTMENT NUMBER
EMPTOWN DS CL20 EMPLOYEE HOME TOWN NAME AND POS
* T CODE
EMPTELNO DS CL10 EMPLOYEE TELEPHONE NUMBER INCLU
* DING CODE
*
* END OF GROUP EMPIDEN
EMPDEPT DS CL3 EMPLOYEE DEPARTMENT CODE
EMPSAL DS CL5 YEARLY SALARY, INCLUDES GEOGRAP
* HICAL ALLOWANCES
EMPEDU DS OCL40 EDUCATION RECEIVED BY EMPLOYEE
* INCLUDING PROFESSIONAL TRAINING
EMPCOL DS CL30 NAME OF COLLEGE/FACULTY
EMPQUA DS CL10 QUALIFICATION OBTAINED AND DATE
* OF CERTIFICATE (SHOWN AS MM/YY
* )
*
* END OF GROUP EMPEDU
EMPEXP DS OCL34 EXPERIENCE GAINED (INCLUDING EX
* PERIENCE GAINED WITHIN THIS ORG
* ANISATION)
EMPEMP DS CL30 NAME OF OUTSIDE COMPANY OR INTE
* RNAL DEPARTMENT OF THIS ORGANIS
* ATION
EMPOST DS CL2 EXPERIENCE CODE TAKEN FROM STAN
* DARD CODING BOOK
EMPYRS DS CL2 NUMBER OF YEARS EXPERIENCE
*
* END OF GROUP EMPEXP
EMPTAX DS CL4 EMPLOYEE TAX CODE SENT BY TAX O
* FFICE
EMPSSC DS CL15 CURRENT EMPLOYEE SOCIAL SECURIT
* Y CODE
*
* END OF GROUP EMPASRC

```

DMO2217I

EMPLOYEE-MASTER-RECORD SUCCESSFULLY GENERATED

*The generation of Assembler descriptions are now shown from EMPLOYEE-MASTER-RECORD. Again we specify PRINT NOGEN and USING the HELD-AS form. Source language comments are generated from DESCRIPTION clauses. In addition, LOW-LEVEL aliases are generated in place of member names.*

*Assembler source language generation output formats are tailorable.*

COMMANDS DEMONSTRATED	DESCRIPTION
<p>STATUS "CONV".                      AUTHORITY "END-USER".                      LIST ONLY "EMPLOYEE-".                      REPORT EMPLOYEE-CODE.                      MODIFY EMPLOYEE-DATA.                      WHAT IS EMPLOYEE-CODE.                      WHO OWNS EMPLOYEE-CODE.                      AUTHORITY "AUDITOR".                      LIST ITEMS.                      PRINT TAX-CODE.                      MODIFY EMPLOYEE-DATA.</p> <p>AUTHORITY "PROG".                      LIST ITEMS.                      MODIFY TAX-CODE.</p> <p>AUTHORITY "ANALYST".                      LIST ITEMS.                      REMOVE TAX-CODE.                      PROTECT EMPLOYEE-DATA ACC 100.                      AUTHORITY "P-MNGR".                      LIST.</p>	<p>To show the effects of the security protocol set up for the DATAMANAGER example dictionary for the different types of user defined.</p> <p>Note the differences in the output of the LIST commands as entered by the different users in addition to DATAMANAGERs error messages if an attempt is made to by-pass the rules established by the Controller.</p>

00216 STATUS "CONV".  
 DM00096I NON-FROZEN STATUS CONV RECOGNISED

X300

00217 AUTHORITY "END-USER".  
DM01060I AUTHORITY RECOGNISED  
00218 LIST ONLY "EMPLOYEE-".

*END-USER has "read-only" access to unprotected members in the dictionary.*

*A LIST command entered by END-USER only gives details of unprotected members. END-USER has ...*

LIST OF MEMBERS MEMBER NAME	TYPE	USAGE	CONDITION	AC	ALT	REM	OWNER
EMPLOYEE-AFTER-UPDATE	ITEM	1	SCE	ENC	YES		
EMPLOYEE-BEFORE-UPDATE	ITEM	2	SCE	ENC	YES		
EMPLOYEE-CODE							PERSONNEL
EMPLOYEE-DATA	GROUP	1	SCE	ENC	YES		
EMPLOYEE-DEPARTMENT							PERSONNEL
EMPLOYEE-HISTORY-REPORT	FILE	2	SCE	ENC	YES		
EMPLOYEE-IDENTIFICATION	GROUP	1	SCE	ENC	YES		
EMPLOYEE-LEAVERS	ITEM	1	SCE	ENC	YES		
EMPLOYEE-MASTER-RECORD	GROUP	1	SCE	ENC	YES		
EMPLOYEE-NAME							PERSONNEL
EMPLOYEE-NEWCOMERS	ITEM	2	SCE	ENC	YES		
EMPLOYEE-REPORT	FILE	3	SCE	ENC	YES		
EMPLOYEE-REPORT-DATA	GROUP	1	SCE	ENC	YES		
EMPLOYEE-REPORT-HEADER	GROUP	3	SCE	ENC	YES		
EMPLOYEE-SALARY							PERSONNEL
EMPLOYEE-STREET	ITEM	1	SCE	ENC	YES		
EMPLOYEE-TELEPHONE	ITEM	1	SCE	ENC	YES		
EMPLOYEE-TOWN	ITEM	1	SCE	ENC	YES		
EMPLOYEE-TRANSACTIONS-FORM	GROUP	2	SCE	ENC	YES		
LIST CONTAINS	7 ITEMS						
	6 GROUPS						
	2 FILES						
	15 MEMBERS IN TOTAL						
	4 MEMBERS INACCESSIBLE TO THIS USER						

00219 REPORT EMPLOYEE-CODE.  
DM00090E 00219/002 EMPLOYEE-CODE INSUFFICIENT AUTHORITY  
DM01603E EMPLOYEE-CODE NOT REPORTED DUE TO PREVIOUS ERROR

*no access rights to members owned by PERSONNEL, and...*

00220 MODIFY EMPLOYEE-DATA.  
DM00090S INSUFFICIENT AUTHORITY  
DM00500E STATEMENT PROCESSING TERMINATED

*no rights to change the dictionary.*

00221 WHAT IS EMPLOYEE-CODE.

*DATAMANAGER will not permit END-USER to find out the member type of a protected member, but will disclose the owner's identity.*

EMPLOYEE-CODE IS  
AN INACCESSIBLE MEMBER

00222 WHO OWNS EMPLOYEE-CODE.

EMPLOYEE-CODE IS OWNED BY PERSONNEL

X300

00223 AUTHORITY "AUDITOR".  
DM010601 AUTHORITY RECOGNISED

AUDITOR has "read-only" access to all  
dictionary members - whether owned by  
PERSONNEL or not, but ...

00224 LIST ITEMS.

LIST OF ITEMS  
MEMBER NAME TYPE USAGE CONDITION AC ALT REM OWNER

MEMBER NAME	TYPE	USAGE	CONDITION	AC	ALT	REM	OWNER
COLLEGE-NAME	ITEM	1	SCE	ENC	YES		
EMPLOYEE-AFTER-UPDATE	ITEM	1	SCE	ENC	YES		
EMPLOYEE-BEFORE-UPDATE	ITEM	2	SCE	ENC	YES		
EMPLOYEE-CODE	ITEM	8	SCE	ENC	YES		PERSONNEL
EMPLOYEE-DEPARTMENT	ITEM	4	SCE	ENC	YES		PERSONNEL
EMPLOYEE-LEAVERS	ITEM	1	SCE	ENC	YES		
EMPLOYEE-NAME	ITEM	2	SCE	ENC	YES		PERSONNEL
EMPLOYEE-NEWCOMERS	ITEM	2	SCE	ENC	YES		
EMPLOYEE-SALARY	ITEM	2	SCE	ENC	YES		PERSONNEL
EMPLOYEE-STREET	ITEM	1	SCE	ENC	YES		
EMPLOYEE-TELEPHONE	ITEM	1	SCE	ENC	YES		
EMPLOYEE-TOWN	ITEM	1	SCE	ENC	YES		
EMPLOYING-COMPANY	ITEM	1	SCE	ENC	YES		
EXPERIENCE-CODE	ITEM	1	SCE	ENC	YES		
EXPERIENCE-YRS	ITEM	1	SCE	ENC	YES		
PM1	ITEM	2	SCE	ENC	YES		
PM2	ITEM	2	SCE	ENC	YES		
PM3	ITEM	2	SCE	ENC	YES		
PM4	ITEM	2	SCE	ENC	YES		
PM5	ITEM	1	*	DUM	YES		
QUALIFICATIONS	ITEM	1	SCE	ENC	YES		
REPORT-PAGE	ITEM	1	SCE	ENC	YES		
REPORT-TITLE	ITEM	1	SCE	ENC	YES		
SALARY-AFTER-UPDATE	ITEM	1	SCE	ENC	YES		
SALARY-BEFORE-UPDATE	ITEM	2	SCE	ENC	YES		
SOCIAL-SECURITY-CODE	ITEM	2	SCE	ENC	YES		PERSONNEL
STANDARD-DATE	ITEM	4	SCE	ENC	YES		
TAX-CODE	ITEM	2	SCE	ENC	YES		PERSONNEL
TRANSACTION-CODE	ITEM	4	SCE	ENC	YES		
TRANSACTION-DATA	ITEM	2	SCE	ENC	YES		
TRANSACTION-DATE	ITEM	2	SCE	ENC	YES		
TRANSACTION-TOTAL	ITEM	1	SCE	ENC	YES		

LIST CONTAINS 32 ITEMS  
1 DUMMY

00225 PRINT TAX-CODE.

```

PRINT OF TAX-CODE
ITEM
00200 HELD-AS NUMERIC 4 CONTENTS IS 538
00300 ELSE IS 670
00400 ELSE RANGE 1000 TO 6000
00500 ENTERED-AS NUMERIC-CHARACTER 4
00600 REPORTED-AS PICTURE "9999"
07000 ALIAS LOW-LEVEL 'EMPTAX'
08000 CATALOG 'SALARY','CODE'
09000 DESCRIPTION
09100 'EMPLOYEE TAX CODE SENT BY TAX OFFICE'
10000 NOTE
10100 'ACCURACY'
10200 ' TAX CODE IS ONE MONTH OUT OF DATE'
END OF PRINT

```

00226 MODIFY EMPLOYEE-DATA.  
DM00090S INSUFFICIENT AUTHORITY  
DM00500E STATEMENT PROCESSING TERMINATED

no rights to change the dictionary.

00227

X300

00228 AUTHORITY "PROG".  
DM01060I AUTHORITY RECOGNISED  
00229 LIST ITEMS.

*Programmer - PROG - has full access to  
all dictionary members and may  
manipulate all non-protected members  
in the dictionary, but ...*

LIST OF ITEMS MEMBER NAME	TYPE	USAGE	CONDITION	AC	ALT	REM	OWNER
COLLEGE-NAME	ITEM	1	SCE	ENC	YES	YES	YES
EMPLOYEE-AFTER-UPDATE	ITEM	1	SCE	ENC	YES	YES	YES
EMPLOYEE-BEFORE-UPDATE	ITEM	2	SCE	ENC	YES	YES	YES
EMPLOYEE-CODE	ITEM	8	SCE	ENC	YES		PERSONNEL
EMPLOYEE-DEPARTMENT	ITEM	4	SCE	ENC	YES		PERSONNEL
EMPLOYEE-LEAVERS	ITEM	1	SCE	ENC	YES	YES	YES
EMPLOYEE-NAME	ITEM	2	SCE	ENC	YES		PERSONNEL
EMPLOYEE-NEWCOMERS	ITEM	2	SCE	ENC	YES	YES	YES
EMPLOYEE-SALARY	ITEM	2	SCE	ENC	YES		PERSONNEL
EMPLOYEE-STREET	ITEM	1	SCE	ENC	YES	YES	YES
EMPLOYEE-TELEPHONE	ITEM	1	SCE	ENC	YES	YES	YES
EMPLOYEE-TOWN	ITEM	1	SCE	ENC	YES	YES	YES
EMPLOYING-COMPANY	ITEM	1	SCE	ENC	YES	YES	YES
EXPERIENCE-CODE	ITEM	1	SCE	ENC	YES	YES	YES
EXPERIENCE-YRS	ITEM	1	SCE	ENC	YES	YES	YES
PM1	ITEM	2	SCE	ENC	YES	YES	YES
PM2	ITEM	2	SCE	ENC	YES	YES	YES
PM3	ITEM	2	SCE	ENC	YES	YES	YES
PM4	ITEM	2	SCE	ENC	YES	YES	YES
PM5	ITEM	1		DUM	YES	YES	YES
QUALIFICATIONS	ITEM	1	SCE	ENC	YES	YES	YES
REPORT-PAGE	ITEM	1	SCE	ENC	YES	YES	YES
REPORT-TITLE	ITEM	1	SCE	ENC	YES	YES	YES
SALARY-AFTER-UPDATE	ITEM	1	SCE	ENC	YES	YES	YES
SALARY-BEFORE-UPDATE	ITEM	2	SCE	ENC	YES	YES	YES
SOCIAL-SECURITY-CODE	ITEM	2	SCE	ENC	YES		PERSONNEL
STANDARD-DATE	ITEM	4	SCE	ENC	YES	YES	YES
TAX-CODE	ITEM	2	SCE	ENC	YES		PERSONNEL
TRANSACTION-CODE	ITEM	4	SCE	ENC	YES	YES	YES
TRANSACTION-DATA	ITEM	2	SCE	ENC	YES	YES	YES
TRANSACTION-DATE	ITEM	2	SCE	ENC	YES	YES	YES
TRANSACTION-TOTAL	ITEM	1	SCE	ENC	YES	YES	YES

LIST CONTAINS 32 ITEMS  
1 DUMMY

00230 MODIFY TAX-CODE.  
DM00090E INSUFFICIENT AUTHORITY  
DM00500W STATEMENT PROCESSING TERMINATED  
00231

*may not manipulate protected members.*

X300

00232 AUTHORITY "ANALYST".  
DM010601 AUTHORITY RECOGNISED

ANALYST has full access rights to the dictionary, with two restrictions ...

00233 LIST ITEMS.

LIST OF ITEMS MEMBER NAME	TYPE	USAGE	CONDITION	AC	ALT	REM	OWNER
COLLEGE-NAME	ITEM	1	SCE	ENC	YES	YES	YES
EMPLOYEE-AFTER-UPDATE	ITEM	1	SCE	ENC	YES	YES	YES
EMPLOYEE-BEFORE-UPDATE	ITEM	2	SCE	ENC	YES	YES	YES
EMPLOYEE-CODE	ITEM	8	SCE	ENC	YES	YES	PERSONNEL
EMPLOYEE-DEPARTMENT	ITEM	4	SCE	ENC	YES	YES	PERSONNEL
EMPLOYEE-LEAVERS	ITEM	1	SCE	ENC	YES	YES	YES
EMPLOYEE-NAME	ITEM	2	SCE	ENC	YES	YES	PERSONNEL
EMPLOYEE-NEWCOMERS	ITEM	2	SCE	ENC	YES	YES	YES
EMPLOYEE-SALARY	ITEM	2	SCE	ENC	YES	YES	PERSONNEL
EMPLOYEE-STREET	ITEM	1	SCE	ENC	YES	YES	YES
EMPLOYEE-TELEPHONE	ITEM	1	SCE	ENC	YES	YES	YES
EMPLOYEE-TOWN	ITEM	1	SCE	ENC	YES	YES	YES
EMPLOYING-COMPANY	ITEM	1	SCE	ENC	YES	YES	YES
EXPERIENCE-CODE	ITEM	1	SCE	ENC	YES	YES	YES
EXPERIENCE-YRS	ITEM	1	SCE	ENC	YES	YES	YES
PM1	ITEM	2	SCE	ENC	YES	YES	YES
PM2	ITEM	2	SCE	ENC	YES	YES	YES
PM3	ITEM	2	SCE	ENC	YES	YES	YES
PM4	ITEM	2	SCE	ENC	YES	YES	YES
PM5	ITEM	1	*	DUM	YES	YES	YES
QUALIFICATIONS	ITEM	1	SCE	ENC	YES	YES	YES
REPORT-PAGE	ITEM	1	SCE	ENC	YES	YES	YES
REPORT-TITLE	ITEM	1	SCE	ENC	YES	YES	YES
SALARY-AFTER-UPDATE	ITEM	1	SCE	ENC	YES	YES	YES
SALARY-BEFORE-UPDATE	ITEM	2	SCE	ENC	YES	YES	YES
SOCIAL-SECURITY-CODE	ITEM	2	SCE	ENC	YES	YES	PERSONNEL
STANDARD-DATE	ITEM	4	SCE	ENC	YES	YES	YES
TAX-CODE	ITEM	2	SCE	ENC	YES	YES	PERSONNEL
TRANSACTION-CODE	ITEM	4	SCE	ENC	YES	YES	YES
TRANSACTION-DATA	ITEM	2	SCE	ENC	YES	YES	YES
TRANSACTION-DATE	ITEM	2	SCE	ENC	YES	YES	YES
TRANSACTION-TOTAL	ITEM	1	SCE	ENC	YES	YES	YES

LIST CONTAINS 32 ITEMS  
1 DUMMY

00234 REMOVE TAX-CODE.  
DM00090S TAX-CODE INSUFFICIENT AUTHORITY

no rights to remove members owned by PERSONNEL (although may edit them)

00235 PROTECT EMPLOYEE-DATA ACC 100.  
DM00090S INSUFFICIENT AUTHORITY

and no rights to protect members.

X300

00238 AUTHORITY "P-MNGR".  
DM010601 AUTHORITY RECOGNISED

The Personnel Manager - P-MNGR - has  
full access rights to the dictionary.

00237 LIST.

LIST OF MEMBERS  
MEMBER NAME TYPE USAGE CONDITION AC ALT REM OWNER

MEMBER NAME	TYPE	USAGE	CONDITION	AC	ALT	REM	OWNER
COLLEGE-NAME	ITEM	1	SCE	ENC	YES		
EDUCATION	GROUP	1	SCE	ENC	YES		
EMPLOYEE-AFTER-UPDATE	ITEM	1	SCE	ENC	YES		
EMPLOYEE-BEFORE-UPDATE	ITEM	2	SCE	ENC	YES		
EMPLOYEE-CODE	ITEM	8	SCE	ENC	YES		PERSONNEL
EMPLOYEE-DATA	GROUP	1	SCE	ENC	YES		
EMPLOYEE-DEPARTMENT	ITEM	4	SCE	ENC	YES		PERSONNEL
EMPLOYEE-HISTORY-REPORT	FILE	2	SCE	ENC	YES		
EMPLOYEE-IDENTIFICATION	GROUP	1	SCE	ENC	YES		
EMPLOYEE-LEAVERS	ITEM	1	SCE	ENC	YES		
EMPLOYEE-MASTER-RECORD	GROUP	1	SCE	ENC	YES		
EMPLOYEE-NAME	ITEM	2	SCE	ENC	YES		PERSONNEL
EMPLOYEE-NEWCOMERS	ITEM	2	SCE	ENC	YES		
EMPLOYEE-REPORT	FILE	3	SCE	ENC	YES		
EMPLOYEE-REPORT-DATA	GROUP	1	SCE	ENC	YES		
EMPLOYEE-REPORT-HEADER	GROUP	3	SCE	ENC	YES		
EMPLOYEE-SALARY	ITEM	2	SCE	ENC	YES		PERSONNEL
EMPLOYEE-STREET	ITEM	1	SCE	ENC	YES		
EMPLOYEE-TELEPHONE	ITEM	1	SCE	ENC	YES		
EMPLOYEE-TOWN	ITEM	1	SCE	ENC	YES		
EMPLOYEE-TRANSACTIONS-FORM	GROUP	2	SCE	ENC	YES		
EMPLOYING-COMPANY	ITEM	1	SCE	ENC	YES		
EXPERIENCE	GROUP	1	SCE	ENC	YES		
EXPERIENCE-CODE	ITEM	1	SCE	ENC	YES		
EXPERIENCE-YRS	ITEM	1	SCE	ENC	YES		
PM1	ITEM	2	SCE	ENC	YES		
PM2	ITEM	2	SCE	ENC	YES		
PM3	ITEM	2	SCE	ENC	YES		
PM4	ITEM	2	SCE	ENC	YES		
PM5	ITEM	1	SCE	DUM	YES		
P1-ERS	SYSTEM	0	SCE	ENC	YES		
P1-ERS-NEW-MEMBERS	COMMAND-STRM	1	SCE	ENC	YES		
P1I01	MODULE	1	SCE	ENC	YES		
P1P01	PROGRAM	1	SCE	ENC	YES		
P1S01	PROGRAM	1	SCE	ENC	YES		
P1S01TSORT	FILE	3	SCE	ENC	YES		
P1U01	PROGRAM	1	SCE	ENC	YES		
P1U02	MODULE	2	SCE	ENC	YES		
P1U02MEMP	FILE	5	SCE	ENC	YES		
P1V01	PROGRAM	1	SCE	ENC	YES		
P1V01WVAL	FILE	2	SCE	ENC	YES		
P2-EHS	SYSTEM	0	SCE	ENC	YES		
P2P01	PROGRAM	1	SCE	ENC	YES		
P2U01	PROGRAM	1	SCE	ENC	YES		
P2U01TEMP	FILE	3	SCE	ENC	YES		
QUALIFICATIONS	ITEM	1	SCE	ENC	YES		
REPORT-PAGE	ITEM	1	SCE	ENC	YES		
REPORT-TITLE	ITEM	1	SCE	ENC	YES		
SALARY-AFTER-UPDATE	ITEM	1	SCE	ENC	YES		
SALARY-BEFORE-UPDATE	ITEM	2	SCE	ENC	YES		
SOCIAL-SECURITY-CODE	ITEM	2	SCE	ENC	YES		PERSONNEL
STANDARD-DATE	ITEM	4	SCE	ENC	YES		
TAX-CODE	ITEM	2	SCE	ENC	YES		PERSONNEL
TRANSACTION-CODE	ITEM	4	SCE	ENC	YES		
TRANSACTION-DATA	ITEM	2	SCE	ENC	YES		
TRANSACTION-DATE	ITEM	2	SCE	ENC	YES		
TRANSACTION-RECORD	GROUP	4	SCE	ENC	YES		
TRANSACTION-TOTAL	ITEM	1	SCE	ENC	YES		
UPDATE-CONTROL-DATA	GROUP	1	SCE	ENC	YES		
UPDATE-CONTROL-REPORT	FILE	2	SCE	ENC	YES		

LIST CONTAINS  
 32 ITEMS  
 10 GROUPS  
 7 FILES  
 2 MODULES  
 6 PROGRAMS  
 2 SYSTEMS  
 1 COMMAND-STREAM  
 1 DUMMY  
 60 MEMBERS IN TOTAL

↑↑  
 full rights  
 not shown.

COMMANDS DEMONSTRATED	DESCRIPTION								
<p>AUTHORITY "ANALYST".                      STATUS "TEST".                      KEEP AND LIST MEMBERS EMPLOYEE-JOB-DATA, JOB-COUNT,                      EMPLOYEE-JOB, EMPLOYEE-JOB-CODE, EMPLOYEE-DATE.                      BULK ENCODE KEPT-DATA.                      LIST NEW ITEMS.                      PRINT EMPLOYEE-MASTER-RECORD.                      ENCODE EMPLOYEE-MASTER-RECORD.                      PRINT EMPLOYEE-CODE.                      MODIFY EMPLOYEE-CODE.                      CHANGE ALL "4" TO "6"</p> <p>WHAT CONSTITUTES EMPLOYEE-MASTER-RECORD.                      STATUS "CONV".                      WHAT CONSTITUTES EMPLOYEE-MASTER-RECORD.                      PRODUCE RECORD-LAYOUTS FROM EMPLOYEE-MASTER-RECORD                      PRINT.                      STATUS "TEST".                      PRODUCE RECORD-LAYOUTS FROM EMPLOYEE-MASTER-RECORD                      PRINT.                      PRODUCE COBOL FROM EMPLOYEE-MASTER-RECORD NOGEN                      PRINT USING HELD-AS GIVING CONDITION-NAMES.</p>	<p>DATAMANAGER EXAMPLE DICTIONARY - STATUS DEMONSTRATION</p> <p>To demonstrate some basic aspects of the DATAMANAGER status feature, and to show the definition of EMPLOYEE-MASTER-RECORD as viewed from the TEST status.</p> <div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;">EMPLOYEE-MASTER-RECORD</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">STATUS CONV</th> <th style="width: 50%;">STATUS TEST</th> </tr> </thead> <tbody> <tr> <td style="border: 1px solid black; padding: 2px;">                     EMPLOYEE-MASTER-RECORD                      EMPLOYEE-CODE                      EMPLOYEE-IDENTIFICATION                      EMPLOYEE-NAME                      EMPLOYEE-STREET                      EMPLOYEE-TOWN                      EMPLOYEE-TELEPHONE                 </td> <td style="border: 1px solid black; padding: 2px;">                     EMPLOYEE-MASTER-RECORD                      EMPLOYEE-CODE*                      EMPLOYEE-IDENTIFICATION                      EMPLOYEE-NAME                      EMPLOYEE-STREET                      EMPLOYEE-TOWN                      EMPLOYEE-TELEPHONE                 </td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">                     EMPLOYEE-DEPARTMENT                      EMPLOYEE-SALARY                 </td> <td style="border: 1px solid black; padding: 2px;">                     EMPLOYEE-JOB-DATA                      JOB-COUNT -                      EMPLOYEE-JOB -                      EMPLOYEE-DEPARTMENT x                      EMPLOYEE-JOB-CODE -                      EMPLOYEE-SALARY x                      EMPLOYEE-DATE -                 </td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">                     EDUCATION                      COLLEGE-NAME                      QUALIFICATIONS                      EXPERIENCE                      EMPLOYING-COMPANY                      EXPERIENCE-CODE                      EXPERIENCE-YRS                      TAX-CODE                      SOCIAL-SECURITY-CODE                 </td> <td style="border: 1px solid black; padding: 2px;">                     EDUCATION                      COLLEGE-NAME                      QUALIFICATIONS                      EXPERIENCE                      EMPLOYING-COMPANY                      EXPERIENCE-CODE                      EXPERIENCE-YRS                      TAX-CODE                      SOCIAL-SECURITY-CODE                 </td> </tr> </tbody> </table> <p>* increased from 4 to 6 characters</p> </div>	STATUS CONV	STATUS TEST	EMPLOYEE-MASTER-RECORD EMPLOYEE-CODE EMPLOYEE-IDENTIFICATION EMPLOYEE-NAME EMPLOYEE-STREET EMPLOYEE-TOWN EMPLOYEE-TELEPHONE	EMPLOYEE-MASTER-RECORD EMPLOYEE-CODE* EMPLOYEE-IDENTIFICATION EMPLOYEE-NAME EMPLOYEE-STREET EMPLOYEE-TOWN EMPLOYEE-TELEPHONE	EMPLOYEE-DEPARTMENT EMPLOYEE-SALARY	EMPLOYEE-JOB-DATA JOB-COUNT - EMPLOYEE-JOB - EMPLOYEE-DEPARTMENT x EMPLOYEE-JOB-CODE - EMPLOYEE-SALARY x EMPLOYEE-DATE -	EDUCATION COLLEGE-NAME QUALIFICATIONS EXPERIENCE EMPLOYING-COMPANY EXPERIENCE-CODE EXPERIENCE-YRS TAX-CODE SOCIAL-SECURITY-CODE	EDUCATION COLLEGE-NAME QUALIFICATIONS EXPERIENCE EMPLOYING-COMPANY EXPERIENCE-CODE EXPERIENCE-YRS TAX-CODE SOCIAL-SECURITY-CODE
STATUS CONV	STATUS TEST								
EMPLOYEE-MASTER-RECORD EMPLOYEE-CODE EMPLOYEE-IDENTIFICATION EMPLOYEE-NAME EMPLOYEE-STREET EMPLOYEE-TOWN EMPLOYEE-TELEPHONE	EMPLOYEE-MASTER-RECORD EMPLOYEE-CODE* EMPLOYEE-IDENTIFICATION EMPLOYEE-NAME EMPLOYEE-STREET EMPLOYEE-TOWN EMPLOYEE-TELEPHONE								
EMPLOYEE-DEPARTMENT EMPLOYEE-SALARY	EMPLOYEE-JOB-DATA JOB-COUNT - EMPLOYEE-JOB - EMPLOYEE-DEPARTMENT x EMPLOYEE-JOB-CODE - EMPLOYEE-SALARY x EMPLOYEE-DATE -								
EDUCATION COLLEGE-NAME QUALIFICATIONS EXPERIENCE EMPLOYING-COMPANY EXPERIENCE-CODE EXPERIENCE-YRS TAX-CODE SOCIAL-SECURITY-CODE	EDUCATION COLLEGE-NAME QUALIFICATIONS EXPERIENCE EMPLOYING-COMPANY EXPERIENCE-CODE EXPERIENCE-YRS TAX-CODE SOCIAL-SECURITY-CODE								

```

00083 AUTHORITY "ANALYST".
DM01060I AUTHORITY RECOGNISED

00084 STATUS "TEST".
DM00096I NON-FROZEN STATUS TEST RECOGNISED

00085 KEEP AND LIST MEMBERS EMPLOYEE-JOB-DATA, JOB-COUNT,
00086 EMPLOYEE-JOB, EMPLOYEE-JOB-CODE, EMPLOYEE-DATE.

LIST OF SELECTED MEMBERS
MEMBER NAME TYPE USAGE CONDITION AC ALT REM OWNER

EMPLOYEE-JOB-DATA SOURCE *SCE YES YES YES
JOB-COUNT SOURCE *SCE YES YES YES
EMPLOYEE-JOB SOURCE *SCE YES YES YES
EMPLOYEE-JOB-CODE SOURCE *SCE YES YES YES
EMPLOYEE-DATE SOURCE *SCE YES YES YES

LIST CONTAINS 5 CONTAINING SOURCE DETAILS ONLY
5 MEMBERS IN TOTAL

DM01541I 5 ENTRIES ADDED TO KEPT-DATA LIST

00087 BULK ENCODE KEPT-DATA.

DM01296I ENCODING OF EMPLOYEE-JOB-DATA
00100 GROUP
00200 HELD-AS
00300 CONTAINS JOB-COUNT,
00400 (JOB-COUNT) EMPLOYEE-JOB INDEXED-BY JHIST
00500 ALIAS LOW-LEVEL 'EMPWORK'
00600 DESCRIPTION
00700 'VARIABLE LENGTH WORK HISTORY SEGMENT'
EMPLOYEE-JOB-DATA SUCCESSFULLY ENCODED

DM01280I

DM01296I ENCODING OF JOB-COUNT
00100 ITEM
00200 HELD-AS NUMERIC 2 CONTENTS IS 3
DM01280I JOB-COUNT SUCCESSFULLY ENCODED

DM01296I ENCODING OF EMPLOYEE-JOB
00100 GROUP
00200 HELD-AS
00300 CONTAINS EMPLOYEE-DEPARTMENT,
00400 EMPLOYEE-JOB-CODE,
00500 EMPLOYEE-SALARY,
    
```

Select status "TEST".

Status TEST already has new definitions inserted for a group EMPLOYEE-JOB-DATA. Let us encode the new definitions, if not already encoded.

X320

```

00600 EMPLOYEE-DATE KNOWN-AS AS-OF-DATE
00700 ALIAS LOW-LEVEL 'EMPJOB'
00800 DESCRIPTION
00900 'EMPLOYEE JOB ENTRY AS OF EMPLOYEE-DATE.'
DMO1280I EMPLOYEE-JOB SUCCESSFULLY ENCODED

DMO1296I ENCODING OF EMPLOYEE-JOB-CODE
00100 ITEM
00200 REPORTED-AS PICTURE 'AAA'
00300 HELD-AS NUMERIC 3 CONTENTS
00400 RANGE 100 TO 109 CONDITION-NAME TRAINEE-TECH-OFFICER
00500 ELSE RANGE 110 TO 119 CONDITION-NAME JNR-TECH-OFFICER
00600 ELSE RANGE 120 TO 149 CONDITION-NAME SNR-TECH-OFFICER
00700 ALIAS LOW-LEVEL 'EMPJOB'
00800 DESCRIPTION
00900 'EMPLOYEE JOB TITLE CODE'
DMO1280I EMPLOYEE-JOB-CODE SUCCESSFULLY ENCODED

DMO1296I ENCODING OF EMPLOYEE-DATE
00100 ITEM
00200 HELD-AS NAME STANDARD-DATE
00300 REPORTED-AS NAME STANDARD-DATE
00400 ALIAS LOW-LEVEL 'EMPDATE'
00500 DESCRIPTION
00600 'EMPLOYEE WORD DATE.'
DMO1280I EMPLOYEE-DATE SUCCESSFULLY ENCODED

DMO1520I 5 MEMBERS PROCESSED BY BULK ENCODE

```

00088 LIST NEW ITEMS.

MEMBER NAME	TYPE	USAGE	CONDITION	AC	ALT	REM	OWNER
EMPLOYEE-DATE	ITEM	1	SCE	ENC	YES	YES	YES
EMPLOYEE-JOB-CODE	ITEM	1	SCE	ENC	YES	YES	YES
JOB-COUNT	ITEM	2	SCE	ENC	YES	YES	YES

LIST CONTAINS 3 ITEMS

00089 PRINT EMPLOYEE-MASTER-RECORD.

```

PRINT OF EMPLOYEE-MASTER-RECORD
00100 GROUP
00200 HELD-AS
00300 CONTAINS EMPLOYEE-CODE,
00400 EMPLOYEE-IDENTIFICATION,
00500 EMPLOYEE-JOB-DATA,
00700 EDUCATION,
00800 EXPERIENCE,
00900 TAX-CODE,
01000 SOCIAL-SECURITY-CODE
07000 ALIAS LOW-LEVEL 'EMPMSARC'
09000 DESCRIPTION
09100 'EMPLOYEE MASTER FILE RECORD'
END OF PRINT

```

00090 ENCODE EMPLOYEE-MASTER-RECORD.

```

DMO1296I ENCODING OF EMPLOYEE-MASTER-RECORD
00100 GROUP
00200 HELD-AS
00300 CONTAINS EMPLOYEE-CODE,
00400 EMPLOYEE-IDENTIFICATION,
00500 EMPLOYEE-JOB-DATA,
00700 EDUCATION,
00800 EXPERIENCE,
00900 TAX-CODE,
01000 SOCIAL-SECURITY-CODE
07000 ALIAS LOW-LEVEL 'EMPMSARC'
09000 DESCRIPTION
09100 'EMPLOYEE MASTER FILE RECORD'
DMO1280I EMPLOYEE-MASTER-RECORD SUCCESSFULLY ENCODED

```

*Using the status-related selection clause of the LIST command, we can obtain a LIST of those items new to the dictionary in the TEST status.*

*Now let us check that EMPLOYEE-MASTER-RECORD contains the new groups and items in its structure, and the new version is encoded.*

X320

00091 PRINT EMPLOYEE-CODE.

00100 PRINT OF EMPLOYEE-CODE  
 00200 ITEM  
 00300 ENTERED-AS ALPHANUMERIC 4  
 00400 HELD-AS NUMERIC 4 CONTENTS RANGE 1000 TO 8000  
 00700 REPORTED-AS PICTURE '9999'  
 00800 ALIAS LOW-LEVEL 'EMPCODE'  
 00900 CATALOG 'EMPLOYEE', 'CODE'  
 01000 DESCRIPTION  
 01100 'STANDARD EMPLOYEE CODE'  
 10000 NOTE  
 10100 'INPUT FORM'  
 10200 'EMPLOYEE-TRANSACTIONS-FORM'  
 END OF PRINT

00092 MODIFY EMPLOYEE-CODE.  
 00093 CHANGE ALL "4" TO "6"  
 2 CHANGES MADE

DMO1157I

00094 ALTERATION HAS CREATED NEW SOURCE RECORD  
 ENCODING OF EMPLOYEE-CODE

DMO1180I  
DMO1296I

00100 ITEM  
 00200 ENTERED-AS ALPHANUMERIC 6  
 00300 HELD-AS NUMERIC 6 CONTENTS RANGE 1000 TO 8000  
 00400 REPORTED-AS PICTURE '9999'  
 00700 ALIAS LOW-LEVEL 'EMPCODE'  
 00800 CATALOG 'EMPLOYEE', 'CODE'  
 00900 DESCRIPTION  
 01000 'STANDARD EMPLOYEE CODE'  
 10000 NOTE  
 10100 'INPUT FORM'  
 10200 'EMPLOYEE-TRANSACTIONS-FORM'  
 EMPLOYEE-CODE SUCCESSFULLY ENCODED

DMO1280I

*In addition to new items, let us  
 increase the field length of  
 EMPLOYEE-CODE from four to six  
 characters in status TEST.*

*what about this?*

X320

00096 WHAT CONSTITUTES EMPLOYEE-MASTER-RECORD.

*Let us see what now constitutes  
EMPLOYEE-MASTER-RECORD in TEST status,*

GROUP	EMPLOYEE-MASTER-RECORD REFERS TO
ITEM	EMPLOYEE-CODE
GROUP	EMPLOYEE-IDENTIFICATION
GROUP	EMPLOYEE-JOB-DATA
GROUP	EDUCATION
GROUP	EXPERIENCE
ITEM	TAX-CODE
ITEM	SOCIAL-SECURITY-CODE
ITEM	EMPLOYEE-CODE REFERS TO NO MEMBERS
GROUP	EMPLOYEE-IDENTIFICATION REFERS TO
ITEM	EMPLOYEE-NAME
ITEM	EMPLOYEE-STREET
ITEM	EMPLOYEE-TOWN
ITEM	EMPLOYEE-TELEPHONE
GROUP	EMPLOYEE-JOB-DATA REFERS TO
ITEM	JOB-COUNT
GROUP	EMPLOYEE-JOB
ITEM	JOB-COUNT
GROUP	EDUCATION REFERS TO
ITEM	COLLEGE-NAME
ITEM	QUALIFICATIONS
GROUP	EXPERIENCE REFERS TO
ITEM	EMPLOYING-COMPANY
ITEM	EXPERIENCE-CODE
ITEM	EXPERIENCE-YRS
ITEM	TAX-CODE REFERS TO NO MEMBERS
ITEM	SOCIAL-SECURITY-CODE REFERS TO NO MEMBERS
ITEM	EMPLOYEE-NAME REFERS TO NO MEMBERS
ITEM	EMPLOYEE-STREET REFERS TO NO MEMBERS
ITEM	EMPLOYEE-TOWN REFERS TO NO MEMBERS
ITEM	EMPLOYEE-TELEPHONE REFERS TO NO MEMBERS
ITEM	JOB-COUNT REFERS TO NO MEMBERS
GROUP	EMPLOYEE-JOB REFERS TO
ITEM	EMPLOYEE-DEPARTMENT
ITEM	EMPLOYEE-JOB-CODE
ITEM	EMPLOYEE-SALARY
ITEM	EMPLOYEE-DATE
ITEM	COLLEGE-NAME REFERS TO NO MEMBERS
ITEM	QUALIFICATIONS REFERS TO NO MEMBERS
ITEM	EMPLOYING-COMPANY REFERS TO NO MEMBERS
ITEM	EXPERIENCE-CODE REFERS TO NO MEMBERS
ITEM	EXPERIENCE-YRS REFERS TO
ITEM	EMPLOYEE-DEPARTMENT
ITEM	EMPLOYEE-DEPARTMENT REFERS TO NO MEMBERS
ITEM	EMPLOYEE-JOB-CODE REFERS TO NO MEMBERS
ITEM	EMPLOYEE-SALARY REFERS TO NO MEMBERS
ITEM	EMPLOYEE-DATE REFERS TO
ITEM	STANDARD-DATE
ITEM	STANDARD-DATE
ITEM	STANDARD-DATE REFERS TO NO MEMBERS

X320

00096  
DM00096I

STATUS "CONV".  
NON-FROZEN STATUS CONV RECOGNISED

... and compare this with ...

00097

WHAT CONSTITUTES EMPLOYEE-MASTER-RECORD.

what constitutes EMPLOYEE-MASTER-RECORD in status CONV.

GROUP	EMPLOYEE-MASTER-RECORD REFERS TO
ITEM	EMPLOYEE-CODE
GROUP	EMPLOYEE-IDENTIFICATION
ITEM	EMPLOYEE-DEPARTMENT
ITEM	EMPLOYEE-SALARY
GROUP	EDUCATION
GROUP	EXPERIENCE
ITEM	TAX-CODE
ITEM	SOCIAL-SECURITY-CODE
ITEM	EMPLOYEE-CODE
ITEM	EMPLOYEE-DEPARTMENT
MODULE	P1U02
ITEM	EMPLOYEE-CODE REFERS TO NO MEMBERS
GROUP	EMPLOYEE-IDENTIFICATION REFERS TO
ITEM	EMPLOYEE-NAME
ITEM	EMPLOYEE-STREET
ITEM	EMPLOYEE-TOWN
ITEM	EMPLOYEE-TELEPHONE
ITEM	EMPLOYEE-DEPARTMENT REFERS TO NO MEMBERS
ITEM	EMPLOYEE-SALARY REFERS TO NO MEMBERS
GROUP	EDUCATION REFERS TO
ITEM	COLLEGE-NAME
ITEM	QUALIFICATIONS
GROUP	EXPERIENCE REFERS TO
ITEM	EMPLOYING-COMPANY
ITEM	EXPERIENCE-CODE
ITEM	EXPERIENCE-YRS
ITEM	TAX-CODE REFERS TO NO MEMBERS
ITEM	SOCIAL-SECURITY-CODE REFERS TO NO MEMBERS
ITEM	EMPLOYEE-NAME REFERS TO NO MEMBERS
ITEM	EMPLOYEE-STREET REFERS TO NO MEMBERS
ITEM	EMPLOYEE-TOWN REFERS TO NO MEMBERS
ITEM	EMPLOYEE-TELEPHONE REFERS TO NO MEMBERS
ITEM	COLLEGE-NAME REFERS TO NO MEMBERS
ITEM	QUALIFICATIONS REFERS TO NO MEMBERS
ITEM	EMPLOYING-COMPANY REFERS TO NO MEMBERS
ITEM	EXPERIENCE-CODE REFERS TO NO MEMBERS
ITEM	EXPERIENCE-YRS REFERS TO
ITEM	EMPLOYEE-DEPARTMENT



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00100 STATUS "TEST".  
DM00096I NON-FROZEN STATUS TEST RECOGNISED

... with those in status TEST.

00101 PRODUCE RECORD-LAYOUTS FROM EMPLOYEE-MASTER-RECORD  
00102 PRINT.

```

.....
*
*   DESCRIPTION OF EMPLOYEE-MASTER-RECORD
*
*.....
*   *DEC *HEX *
*   *OFFSET*OFFSET* LEVEL & NAME *LENGTH* TYPE ALIGN *REMARKS
*.....
*   0 * 0 * 1 * EMPLOYEE-MASTER-RECORD * 252 * GROUP *
*-----*-----*-----*-----*-----*-----*-----*-----*
*   0 * 0 * 2 * EMPLOYEE-CODE * 6 * NUM * * 6 DIGITS
*-----*-----*-----*-----*-----*-----*-----*-----*
*   6 * 6 * 2 * EMPLOYEE-IDENTIFICATION * 100 * GROUP *
*-----*-----*-----*-----*-----*-----*-----*-----*
*   6 * 6 * 3 * EMPLOYEE-NAME * 30 * CHAR *
*-----*-----*-----*-----*-----*-----*-----*-----*
*   36 * 24 * 3 * EMPLOYEE-STREET * 40 * CHAR *
*-----*-----*-----*-----*-----*-----*-----*-----*
*   76 * 4C * 3 * EMPLOYEE-TOWN * 20 * CHAR *
*-----*-----*-----*-----*-----*-----*-----*-----*
*   96 * 60 * 3 * EMPLOYEE-TELEPHONE * 10 * NUM * * 10 DIGITS
*-----*-----*-----*-----*-----*-----*-----*-----*
*   106 * 6A * 2 * EMPLOYEE-JOB-DATA * 53 * GROUP *
*-----*-----*-----*-----*-----*-----*-----*-----*
*   106 * 6A * 3 * JOB-COUNT * 2 * NUM * * 2 DIGITS
*-----*-----*-----*-----*-----*-----*-----*-----*
*   108 * 6C * 3 * EMPLOYEE-JOB * 17 * GROUP * * OCCURS JOB-COUNT TIMES (3)
*-----*-----*-----*-----*-----*-----*-----*-----*
*   108 * 6C * 4 * EMPLOYEE-DEPARTMENT * 3 * NUM * * 3 DIGITS
*-----*-----*-----*-----*-----*-----*-----*-----*
*   111 * 6F * 4 * EMPLOYEE-JOB-CODE * 3 * NUM * * 3 DIGITS
*-----*-----*-----*-----*-----*-----*-----*-----*
*   114 * 72 * 4 * EMPLOYEE-SALARY * 5 * NUM * * 5 DIGITS
*-----*-----*-----*-----*-----*-----*-----*-----*
*   119 * 77 * 4 * EMPLOYEE-DATE * 6 * NUM * * 6 DIGITS
*-----*-----*-----*-----*-----*-----*-----*-----*
*   159 * 9F * 2 * EDUCATION * 40 * GROUP *
*-----*-----*-----*-----*-----*-----*-----*-----*
*   159 * 9F * 3 * COLLEGE-NAME * 30 * CHAR *
*-----*-----*-----*-----*-----*-----*-----*-----*
*   189 * BD * 3 * QUALIFICATIONS * 10 * CHAR *
*-----*-----*-----*-----*-----*-----*-----*-----*
*   199 * C7 * 2 * EXPERIENCE * 34 * GROUP *
*-----*-----*-----*-----*-----*-----*-----*-----*
*   199 * C7 * 3 * EMPLOYING-COMPANY * 30 * CHAR *
*-----*-----*-----*-----*-----*-----*-----*-----*
*   229 * E5 * 3 * EXPERIENCE-CODE * 2 * NUM * * 2 DIGITS
*-----*-----*-----*-----*-----*-----*-----*-----*
*   231 * E7 * 3 * EXPERIENCE-YRS * 2 * NUM * * 2 DIGITS
*-----*-----*-----*-----*-----*-----*-----*-----*
*   233 * E9 * 2 * TAX-CODE * 4 * NUM * * 4 DIGITS
*-----*-----*-----*-----*-----*-----*-----*-----*
*   237 * ED * 2 * SOCIAL-SECURITY-CODE * 15 * ALNUM *
*.....

```

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00103 PRODUCE COBOL FROM EMPLOYEE-MASTER-RECORD NOGEN  
00104 PRINT USING HELD-AS GIVING CONDITION-NAMES.

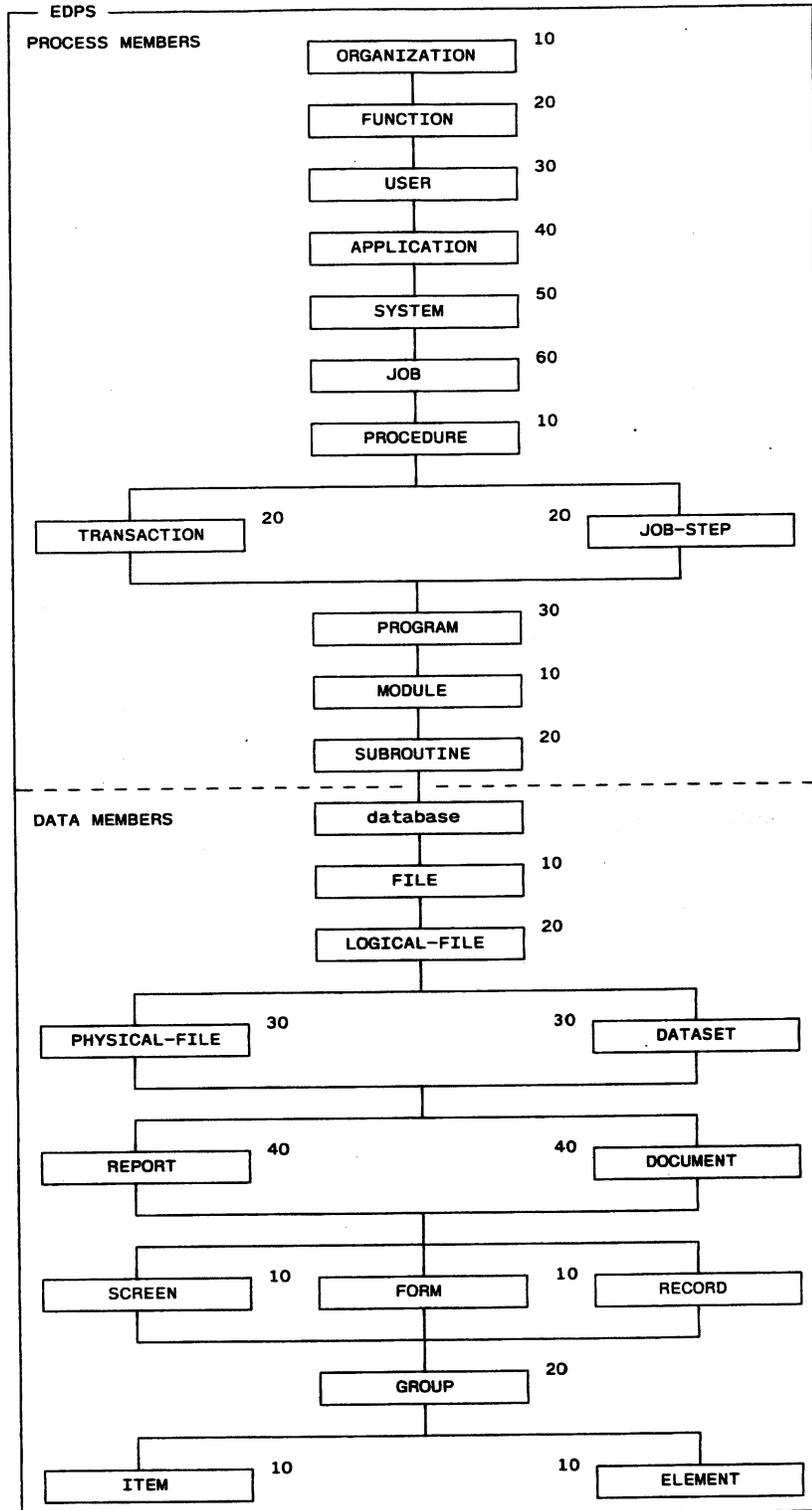
```
01 EMPLOYEE-MASTER-RECORD.  
02 EMPLOYEE-CODE PIC 9(6).  
02 EMPLOYEE-IDENTIFICATION.  
04 EMPLOYEE-NAME PIC X(30).  
04 EMPLOYEE-STREET PIC X(40).  
04 EMPLOYEE-TOWN PIC X(20).  
04 EMPLOYEE-TELEPHONE PIC 9(10).  
02 EMPLOYEE-JOB-DATA.  
04 JOB-COUNT PIC 99.  
04 EMPLOYEE-JOB OCCURS 1 TO 3 TIMES  
DEPENDING ON JOB-COUNT  
INDEXED JHIST.  
06 EMPLOYEE-DEPARTMENT PIC 999.  
06 EMPLOYEE-JOB-CODE PIC 999.  
88 TRAINEE-TECH-OFFICER VALUE 100  
THRU 109.  
88 JNR-TECH-OFFICER VALUE 110  
THRU 119.  
88 SNR-TECH-OFFICER VALUE 120  
THRU 149.  
06 EMPLOYEE-SALARY PIC 9(5).  
06 EMPLOYEE-DATE PIC 9(6).  
02 EDUCATION.  
04 COLLEGE-NAME PIC X(30).  
04 QUALIFICATIONS PIC X(10).  
02 EXPERIENCE.  
04 EMPLOYING-COMPANY PIC X(30).  
04 EXPERIENCE-CODE PIC 99.  
04 EXPERIENCE-YRS PIC 99.  
02 TAX-CODE PIC 9(4).  
02 SOCIAL-SECURITY-CODE PIC X(15).
```

*The test definition of EMPLOYEE-JOB-CODE uses CONDITION-NAME clauses for specific job code value ranges. We can produce COBOL level-88s from such clauses:*

DM02217I

EMPLOYEE-MASTER-RECORD SUCCESSFULLY GENERATED

COMMANDS DEMONSTRATED	DESCRIPTION
<p>AUTHORITY "ANALYST".  STATUS "UDS".  REPORT P1-ERS.  KEEP WHAT CONSTITUTES P1-ERS.  LIST KEPT-DATA ALPHABETICALLY.  REPORT P2-EHS.  LIST JOBS.  WHICH JOBS CONSTITUTE P1-ERS.  GLOSSARY JOBS GIVING DESCRIPTIONS.  LIST REPORTS.  GLOSSARY REPORTS GIVING ADMINISTRATIVE-DATA.  LIST PHYSICAL-FILES.  LIST RECORDS.  WHICH PHYSICAL-FILES USE TRANSACTION-RECORD.  GLOSSARY PHYSICAL-FILES GIVING REFERENCES.  LIST ATTRIBUTES.  GLOSSARY FOR REPORTS GIVING TITLE, CIRCULATION  PRINT-RUN.  WHICH JOBS HAVE SUPPORT-PROGRAMMER SPECIFIED.  WHICH MEMBERS HAVE CIRCULATION INCLUDING  'SALARY &amp; WAGES DEPARTMENT'.  KEEP LIST PHYSICAL-FILES.  PERFORM "PROD COBOL FR * NOGE PR G FD."  ,"SPACE 5." KEPT-DATA.</p>	<p>DATAMANAGER EXAMPLE DICTIONARY - USER DEFINED SYNTAX DEMONSTRATION</p> <p>To show use of the UDS facility of DATAMANAGER for recording a view of the conventional file systems defined in the DATAMANAGER example dictionary using the Extended Data Processing Structure (EDPS).</p> <p>Specification of the User Defined Attributes contained in the following demonstration is illustrated in the forms UDS 50-1 and UDS 60-1 to 60-5 which follow the EDPS diagram.</p>







**DATAMANAGER**  
USER DEFINED SYNTAX  
Attribute Specification

Organization (short name): MSP  
 Date: 8/20/82  
 Page: UDS40-2  
 y y m m d d

IMPORTANT: Ensure that each section of this form is completed.

A IDENTIFYING KEYWORD OR ATTRIBUTE NAME:		MSP use
TITLE		TABLE-
B ATTRIBUTE TYPE (✓ one box only):		
DATE	IDENTIFIED INTEGER	
<input type="checkbox"/>	<input type="checkbox"/>	
NAME	TIME	
<input type="checkbox"/>	<input type="checkbox"/>	
STRING	UNIDENTIFIED KEYWORD	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	
FREE FORM TEXT		
<input type="checkbox"/>		
C ATTRIBUTE SPECIFICATIONS:		
1 MANDATORY	v1 MUTUALLY EXCLUSIVE WITH THE FOLLOWING ATTRIBUTES:	
with ERROR	<input type="checkbox"/>	
with WARNING	<input type="checkbox"/>	
OPTIONAL	<input checked="" type="checkbox"/>	
11 INDEXED		
by PRESENCE	<input type="checkbox"/>	
by VALUE	<input type="checkbox"/>	
NOT INDEXED	<input checked="" type="checkbox"/>	
OR	NOT MUTUALLY EXCLUSIVE.	<input type="checkbox"/>
111 CHARACTER LENGTH	v11 ALLOWED VALUES OR KEYWORDS	
Min no.	<input type="checkbox"/>	
Max no.	<input type="checkbox"/>	
as default/ not applicable	<input checked="" type="checkbox"/>	
1v TEXT LINES		
Min no.	<input type="checkbox"/>	
Max no.	<input type="checkbox"/>	
as default/ not applicable	<input checked="" type="checkbox"/>	
v VALUE RANGE		
Min value	<input type="checkbox"/>	
Max value	<input type="checkbox"/>	
as default/ not applicable	<input checked="" type="checkbox"/>	
OR	No allowed values or keywords.	<input type="checkbox"/>



**DATAMANAGER**  
USER DEFINED SYNTAX  
Attribute Specification

Organization (short name): MSP  
 Date: 8/20/82  
 Page: UDS40-3  
 y y m m d d

IMPORTANT: Ensure that each section of this form is completed.

A IDENTIFYING KEYWORD OR ATTRIBUTE NAME:		MSP use
PRINT-RUN		TABLE-
B ATTRIBUTE TYPE (✓ one box only):		
DATE	IDENTIFIED INTEGER	
<input type="checkbox"/>	<input type="checkbox"/>	
NAME	TIME	
<input type="checkbox"/>	<input type="checkbox"/>	
STRING	UNIDENTIFIED KEYWORD	
<input type="checkbox"/>	<input type="checkbox"/>	
FREE FORM TEXT		
<input type="checkbox"/>		
C ATTRIBUTE SPECIFICATIONS:		
1 MANDATORY	v1 MUTUALLY EXCLUSIVE WITH THE FOLLOWING ATTRIBUTES:	
with ERROR	<input type="checkbox"/>	
with WARNING	<input type="checkbox"/>	
OPTIONAL	<input checked="" type="checkbox"/>	
11 INDEXED		
by PRESENCE	<input type="checkbox"/>	
by VALUE	<input type="checkbox"/>	
NOT INDEXED	<input checked="" type="checkbox"/>	
OR	NOT MUTUALLY EXCLUSIVE.	<input type="checkbox"/>
111 CHARACTER LENGTH	v11 ALLOWED VALUES OR KEYWORDS	
Min no.	<input type="checkbox"/>	
Max no.	<input type="checkbox"/>	
as default/ not applicable	<input checked="" type="checkbox"/>	
1v TEXT LINES		
Min no.	<input type="checkbox"/>	
Max no.	<input type="checkbox"/>	
as default/ not applicable	<input checked="" type="checkbox"/>	
v VALUE RANGE		
Min value	<input type="checkbox"/>	
Max value	<input type="checkbox"/>	
as default/ not applicable	<input checked="" type="checkbox"/>	
OR	No allowed values or keywords.	<input type="checkbox"/>



**DATAMANAGER**  
USER DEFINED SYNTAX  
Attribute Specification

Organization (short name):  
MSP  
Date: 8 | 2 | 0 8 | 2 | 0  
y y m m d d  
Page: ussd-4

IMPORTANT Ensure that each section of this form is completed.

A IDENTIFYING KEYWORD OR ATTRIBUTE NAME: AUDITED		MSP use TABLE=
B ATTRIBUTE TYPE (✓ one box only):		
DATE	DECIMAL NUMBER	FREE FORM TEXT
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NAME	STRING	TEXT
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		IDENTIFIED INTEGER KEYWORD
		<input type="checkbox"/>
		UNIDENTIFIED KEYWORD
		<input type="checkbox"/>
C ATTRIBUTE SPECIFICATIONS:		
I MANDATORY	V1 MUTUALLY EXCLUSIVE WITH THE FOLLOWING ATTRIBUTES:	
with ERROR	<input checked="" type="checkbox"/>	<input type="checkbox"/>
with WARNING	<input type="checkbox"/>	<input type="checkbox"/>
OPTIONAL	<input type="checkbox"/>	<input type="checkbox"/>
II INDEXED	by PRESENCE	
	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	by VALUE	<input type="checkbox"/>
	NOT INDEXED	<input type="checkbox"/>
		OR NOT MUTUALLY EXCLUSIVE
		<input checked="" type="checkbox"/>
III CHARACTER LENGTH	V11 ALLOWED VALUES OF KEYWORDS	
Min no.	<input type="checkbox"/>	<input type="checkbox"/>
Max no.	<input type="checkbox"/>	<input type="checkbox"/>
as default/not applicable	<input checked="" type="checkbox"/>	<input type="checkbox"/>
IV TEXT LINES	Min no.	
	<input type="checkbox"/>	<input type="checkbox"/>
	Max no.	<input type="checkbox"/>
	as default/not applicable	<input checked="" type="checkbox"/>
V VALUE RANGE	Min value	
	<input type="checkbox"/>	<input type="checkbox"/>
	Max value	<input type="checkbox"/>
	as default/not applicable	<input checked="" type="checkbox"/>
		OR No allowed values or keywords
		<input checked="" type="checkbox"/>



**DATAMANAGER**  
USER DEFINED SYNTAX  
Attribute Specification

Organization (short name):  
MSP  
Date: 8 | 2 | 0 8 | 2 | 0  
y y m m d d  
Page: ussd-5

IMPORTANT Ensure that each section of this form is completed.

A IDENTIFYING KEYWORD OR ATTRIBUTE NAME: SUPPORT-PROGRAMMER		MSP use TABLE=
B ATTRIBUTE TYPE (✓ one box only):		
DATE	DECIMAL NUMBER	FREE FORM TEXT
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NAME	STRING	TEXT
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		IDENTIFIED INTEGER KEYWORD
		<input type="checkbox"/>
		UNIDENTIFIED KEYWORD
		<input type="checkbox"/>
C ATTRIBUTE SPECIFICATIONS:		
I MANDATORY	V1 MUTUALLY EXCLUSIVE WITH THE FOLLOWING ATTRIBUTES:	
with ERROR	<input type="checkbox"/>	<input checked="" type="checkbox"/>
with WARNING	<input checked="" type="checkbox"/>	<input type="checkbox"/>
OPTIONAL	<input type="checkbox"/>	<input type="checkbox"/>
II INDEXED	by PRESENCE	
	<input type="checkbox"/>	<input type="checkbox"/>
	by VALUE	<input checked="" type="checkbox"/>
	NOT INDEXED	<input type="checkbox"/>
		OR NOT MUTUALLY EXCLUSIVE
		<input checked="" type="checkbox"/>
III CHARACTER LENGTH	V11 ALLOWED VALUES OF KEYWORDS	
Min no.	<input type="checkbox"/>	<input type="checkbox"/>
Max no.	<input type="checkbox"/>	<input type="checkbox"/>
as default/not applicable	<input checked="" type="checkbox"/>	<input type="checkbox"/>
IV TEXT LINES	Min no.	
	<input type="checkbox"/>	<input type="checkbox"/>
	Max no.	<input type="checkbox"/>
	as default/not applicable	<input checked="" type="checkbox"/>
V VALUE RANGE	Min value	
	<input type="checkbox"/>	<input type="checkbox"/>
	Max value	<input type="checkbox"/>
	as default/not applicable	<input checked="" type="checkbox"/>
		OR No allowed values or keywords
		<input checked="" type="checkbox"/>

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DM01060I 00111 AUTHORITY "ANALYST".  
AUTHORITY RECOGNISED  
DM00096I 00112 STATUS "UDS".  
NON-FROZEN STATUS UDS RECOGNISED  
00113 REPORT P1-ERS.

REPORT OF SYSTEM P1-ERS

EDITION 8 ENCODED BY MASTER AT 10.55.16 ON 09 MAR 1982  
STATUS UDS  
PROTECTION: NONE

ALIAS  
EMPLOYEE-RECORDS-SYSTEM

CATALOGUED AS  
PERSONNEL

DESCRIPTION  
THIS SYSTEM MAINTAINS PRODUCTION DIVISION EMPLOYEE RECORDS

NOTE  
DATES DEVELOPED  
JANUARY 1979 TO AUGUST 1979

SYSTEM EFFORT  
2 MAN-MONTHS FOR SYSTEM DESIGN  
1 MAN-MONTHS FOR PROGRAM SPECIFICATIONS  
3 MAN-MONTHS FOR SYSTEM TESTING,  
USER TRAINING AND IMPLEMENTATION

PROGRAMMING EFFORT  
4 MAN-MONTHS

PROJECT LEADER  
ALAN JOHNSON (EXT. 253)

COMPUTER TIME USED  
TESTED PROGRAMS USING HEAD OFFICE  
IBM S/370-158 OS/MVS INSTALLATION  
PROGRAM TESTING 1 HOUR 30 MINUTES  
SYSTEM TESTING 0 HOUR 40 MINUTES  
DEMONSTRATION 0 HOUR 25 MINUTES

OTHER COSTS  
1 MAN-MONTH ORGANISATION AND METHODS STAFF  
3 BOXES OF PLAIN ONE PART STATIONERY

LESSONS LEARNT  
1: DO NOT TEST ON-LINE PROGRAMS IN BATCH  
MODE BY SIMULATING CARD READER AS INPUT  
TERMINAL  
2: ALWAYS CONSULT AUDITORS BEFORE FINALISING  
DATA CONTROL REPORTS

PROCEDURES  
THIS SYSTEM IS MADE UP OF TWO JOBS  
JOB 1 IS RUN IN ON-LINE MODE DAILY  
JOB 2 IS RUN IN BATCH MODE AT THE END OF A  
WEEK

THIS MEMBER IS DIRECTLY REFERRED TO 0 TIMES  
THIS MEMBER CONTAINS 2 DIRECT REFERENCES

SYSTEM P1-ERS

PARAMETERS NO DATA

INPUTS NO DATA

OUTPUTS NO DATA

UPDATES NO DATA

CALLS NO MEMBERS

CONTAINS  
JOB P1J01  
JOB P1J02

*In status UDS we have a view of the conventional file systems using the EDPS members JOB, FORM, REPORT, PHYSICAL-FILE ELEMENT and RECORD in addition to the standard DATAMANAGER member types.*

*The reader may care to compare this formatted report of system P1-ERS, and*

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00114 KEEP WHAT CONSTITUTES P1-ERS.  
DM01541I 47 ENTRIES ADDED TO KEPT-DATA LIST

00115 LIST KEPT-DATA ALPHABETICALLY.

... a list of the members that constitute it, with that shown at the start of demonstration X200 for P1-ERS in the standard conventional file environment.

LIST OF SELECTED MEMBERS  
MEMBER NAME

MEMBER NAME	TYPE	USAGE	CONDITION	AC	ALT	REM	OWNER
COLLEGE-NAME	ELEMENT	1	SCE ENC YES YES YES				
EDUCATION	GROUP	1	SCE ENC YES YES YES				
EMPLOYEE-AFTER-UPDATE	ELEMENT	1	SCE ENC YES YES YES				
EMPLOYEE-BEFORE-UPDATE	ELEMENT	2	SCE ENC YES YES YES				
EMPLOYEE-CODE	ELEMENT	8	SCE ENC YES YES				PERSONNEL
EMPLOYEE-DEPARTMENT	ELEMENT	4	SCE ENC YES YES				PERSONNEL
EMPLOYEE-IDENTIFICATION	GROUP	1	SCE ENC YES YES YES				
EMPLOYEE-LEAVERS	ELEMENT	1	SCE ENC YES YES YES				
EMPLOYEE-MASTER-RECORD	RECORD	1	SCE ENC YES YES YES				
EMPLOYEE-NAME	ELEMENT	2	SCE ENC YES YES				PERSONNEL
EMPLOYEE-NEWCOMERS	ELEMENT	2	SCE ENC YES YES YES				
EMPLOYEE-REPORT	REPORT	2	SCE ENC YES YES YES				
EMPLOYEE-REPORT-DATA	GROUP	1	SCE ENC YES YES YES				
EMPLOYEE-REPORT-HEADER	GROUP	3	SCE ENC YES YES YES				
EMPLOYEE-SALARY	ELEMENT	2	SCE ENC YES YES				PERSONNEL
EMPLOYEE-STREET	ELEMENT	1	SCE ENC YES YES YES				
EMPLOYEE-TELEPHONE	ELEMENT	1	SCE ENC YES YES YES				
EMPLOYEE-TOWN	ELEMENT	1	SCE ENC YES YES YES				
EMPLOYEE-TRANSACTIONS-FORM	FORM	2	SCE ENC YES YES YES				
EMPLOYING-COMPANY	ELEMENT	1	SCE ENC YES YES YES				
EXPERIENCE	GROUP	1	SCE ENC YES YES YES				
EXPERIENCE-CODE	ELEMENT	1	SCE ENC YES YES YES				
EXPERIENCE-YRS	ELEMENT	1	SCE ENC YES YES YES				
P1J01	JOB	1	SCE ENC YES YES YES				
P1J02	JOB	1	SCE ENC YES YES YES				
P1P01	PROGRAM	1	SCE ENC YES YES YES				
P1S01	PROGRAM	1	SCE ENC YES YES YES				
P1S01SORT	PHYSICAL FIL	3	SCE ENC YES YES YES				
P1U02	MODULE	2	SCE ENC YES YES YES				
P1U02MEMP	PHYSICAL FIL	5	SCE ENC YES YES YES				
P1V01	PROGRAM	2	SCE ENC YES YES YES				
P1V01WVAL	PHYSICAL FIL	2	SCE ENC YES YES YES				
QUALIFICATIONS	ELEMENT	1	SCE ENC YES YES YES				
REPORT-PAGE	ELEMENT	1	SCE ENC YES YES YES				
REPORT-TITLE	ELEMENT	1	SCE ENC YES YES YES				
SALARY-AFTER-UPDATE	ELEMENT	1	SCE ENC YES YES YES				
SALARY-BEFORE-UPDATE	ELEMENT	2	SCE ENC YES YES YES				
SOCIAL-SECURITY-CODE	ELEMENT	2	SCE ENC YES YES				PERSONNEL
STANDARD-DATE	ELEMENT	4	SCE ENC YES YES YES				
TAX-CODE	ELEMENT	2	SCE ENC YES YES				PERSONNEL
TRANSACTION-CODE	ELEMENT	4	SCE ENC YES YES YES				
TRANSACTION-DATA	ELEMENT	2	SCE ENC YES YES YES				
TRANSACTION-DATE	ELEMENT	2	SCE ENC YES YES YES				
TRANSACTION-RECORD	GROUP	4	SCE ENC YES YES YES				
TRANSACTION-TOTAL	ELEMENT	1	SCE ENC YES YES YES				
UPDATE-CONTROL-DATA	GROUP	1	SCE ENC YES YES YES				
UPDATE-CONTROL-REPORT	REPORT	2	SCE ENC YES YES YES				

LIST CONTAINS 27 ELEMENTS  
 7 GROUPS  
 1 FORM  
 1 RECORD  
 3 PHYSICAL FILES  
 2 REPORTS  
 1 MODULE  
 3 PROGRAMS  
 2 JOBS  
 47 MEMBERS IN TOTAL

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00116 REPORT P2-EHS.

*Here is the second system, P2-EHS,  
using EDPS members.*

REPORT OF SYSTEM P2-EHS

EDITION 8 ENCODED BY MASTER AT 10.55.58 ON 09 MAR 1982  
STATUS UDS  
PROTECTION: NONE

ALIAS  
EMPLOYEE-HISTORY-SYSTEM

CATALOGUED AS  
PERSONNEL

DESCRIPTION  
THIS SYSTEM MAINTAINS PRODUCTION DIVISION EMPLOYEE HISTORY

NOTE  
DATES DEVELOPED  
SEPTEMBER 1979

SYSTEM EFFORT  
2 MAN-WEEKS FOR SYSTEM DESIGN  
2 MAN-WEEKS FOR PROGRAM SPECIFICATIONS  
2 MAN-WEEKS FOR SYSTEM TESTING

PROGRAMMING EFFORT  
4 MAN-WEEKS

PROJECT LEADER  
LYNDA SMITH OF UNIVERSAL SOFTWARE COMPANY,  
NEW TOWN (TEL. 836 8399)

COMPUTER TIME USED  
TESTED PROGRAMS USING IBM NEW TOWN CUSTOMER  
CENTRE S/370-165 OS/SVS INSTALLATION  
PROGRAM TESTING 0 HOUR 35 MINUTES  
SYSTEM TESTING 0 HOUR 20 MINUTES

OTHER COSTS  
1 BOX OF PLAIN ONE PART STATIONERY

LESSONS LEARNT  
1: DO NOT USE DISK FILES FOR HISTORY RECORDS  
  
2: ALWAYS ALLOW FOR A TRANSACTION TYPE CODE  
IN A HISTORY RECORD  
3: ALWAYS STUDY LEGAL REQUIREMENTS BEFORE  
RECORDING PERSONAL DETAILS ON A  
HISTORY FILE

PROCEDURES  
THIS SYSTEM IS MADE UP OF ONLY ONE JOB  
IT IS RUN IN BATCH MODE AT THE END OF A  
MONTH

THIS MEMBER IS DIRECTLY REFERRED TO 0 TIMES  
THIS MEMBER CONTAINS 1 DIRECT REFERENCE

SYSTEM P2-EHS

PARAMETERS NO DATA

INPUTS NO DATA

OUTPUTS NO DATA

UPDATES NO DATA

CALLS NO MEMBERS

CONTAINS  
JOB

P2J01

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00117 LIST JOBS.

LIST OF JOBS MEMBER NAME	TYPE	USAGE	CONDITION	AC	ALT	REM	OWNER
P1J01	JOB	1	SCE ENC YES YES YES				
P1J02	JOB	1	SCE ENC YES YES YES				
P2J01	JOB	1	SCE ENC YES YES YES				

LIST CONTAINS 3 JOBS

00118 WHICH JOBS CONSTITUTE P1-ERS.

THE FOLLOWING JOBS SATISFY THE GIVEN CRITERIA

JOB	
JOB	P1J01
JOB	P1J02

2 MEMBERS IN TOTAL

00119 GLOSSARY JOBS GIVING DESCRIPTIONS.

GLOSSARY OF JOBS

P1J01  
JOB  
DESCRIPTION  
THIS JOB INPUTS AND VALIDATES EMPLOYEE TRANSACTIONS

P1J02  
JOB  
DESCRIPTION  
THIS JOB UPDATES MASTER FILE AND PRINTS EMPLOYEE REPORT

P2J01  
JOB  
DESCRIPTION  
THIS JOB UPDATES HISTORY FILE AND PRINTS HISTORY REPORT

GLOSSARY CONTAINS 3 JOBS

00120 LIST REPORTS.

LIST OF REPORTS MEMBER NAME	TYPE	USAGE	CONDITION	AC	ALT	REM	OWNER
EMPLOYEE-HISTORY-REPORT	REPORT	2	SCE ENC YES YES YES				
EMPLOYEE-REPORT	REPORT	2	SCE ENC YES YES YES				
UPDATE-CONTROL-REPORT	REPORT	2	SCE ENC YES YES YES				

LIST CONTAINS 3 REPORTS

00121 GLOSSARY REPORTS GIVING ADMINISTRATIVE-DATA.

GLOSSARY OF REPORTS

EMPLOYEE-HISTORY-REPORT  
REPORT  
ADMINISTRATIVE-DATA  
REPORT IDENTIFICATION  
STANDARD COMPUTER STATIONERY

INSTRUCTIONS - USER  
1: FOR EACH EMPLOYEE, THE REPORT SHOWS  
ALL TRANSACTIONS FOR THE YEAR-TO-DATE

2: FILE THE REPORT IN THE FILE MARKED -  
MONTHLY HISTORY REPORT  
DESTROY THE OLD REPORT

INSTRUCTIONS - CONTROL  
NONE

EMPLOYEE-REPORT  
REPORT  
ADMINISTRATIVE-DATA  
REPORT IDENTIFICATION  
PRE-PRINTED STATIONERY BLUE  
REORDER CODE PER/893

INSTRUCTIONS - USER  
EACH LINE REFERS TO AN EMPLOYEE.  
ENSURE THAT AMENDMENTS ARE CORRECTLY  
REFLECTED IN THE REPORT

INSTRUCTIONS - CONTROL  
1: USING A GUILLOTINE, CUT THE REPORT  
TO 10" X 6" SIZE

2: REMOVE LINE-UP PAGES

UPDATE-CONTROL-REPORT

EDPS members can be used in standard DATAMANAGER interrogation and documentation commands, shown here for JOBS,

... and REPORTS,

X360

REPORT  
ADMINISTRATIVE-DATA  
REPORT IDENTIFICATION  
STANDARD COMPUTER STATIONERY

INSTRUCTIONS - USER

- 1: NUMBER OF TRANSACTIONS SHOULD BE  
EQUAL TO TOTAL EMPLOYEE ENTRIES  
MADE DURING LAST WEEK
- 2: FILE THE REPORT IN THE FILE MARKED -  
WEEKLY CONTROL REPORTS

INSTRUCTIONS - CONTROL  
CHECK THE FOLLOWING ITEMS:

- 1: NUMBER OF EMPLOYEE RECORDS AFTER  
UPDATE SHOULD BE EQUAL TO NUMBER  
OF EMPLOYEE RECORDS BEFORE UPDATE  
PLUS NUMBER OF NEWCOMERS MINUS  
NUMBER OF LEAVERS
- 2: IF INCREASE IN YEARLY SALARY AMOUNT  
IS MORE THAN 5% OF TOTAL YEARLY SALARY  
AMOUNT, MARK THE VALUE WITH A RED  
PEN AND INITIAL

GLOSSARY CONTAINS 3 REPORTS

X360

00122 LIST PHYSICAL-FILES.

... and PHYSICAL-FILES and RECORDS.

LIST OF PHYSICAL FILES  
MEMBER NAME

TYPE USAGE CONDITION AC ALT REM OWNER

P1S01TSORT	PHYSICAL FIL	3	SCE	ENC	YES	YES	YES
P1U02MEMP	PHYSICAL FIL	5	SCE	ENC	YES	YES	YES
P1V01WVAL	PHYSICAL FIL	2	SCE	ENC	YES	YES	YES
P2U01TEMP	PHYSICAL FIL	3	SCE	ENC	YES	YES	YES

LIST CONTAINS 4 PHYSICAL FILES

00123 LIST RECORDS.

LIST OF RECORDS  
MEMBER NAME

TYPE USAGE CONDITION AC ALT REM OWNER

EMPLOYEE-MASTER-RECORD	RECORD	1	SCE	ENC	YES	YES	YES
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LIST CONTAINS 1 RECORD

00124 WHICH PHYSICAL-FILES USE TRANSACTION-RECORD.

THE FOLLOWING PHYSICAL FILES SATISFY THE GIVEN CRITERIA

PHYSICAL FILE	P1S01TSORT
PHYSICAL FILE	P1V01WVAL
PHYSICAL FILE	P2U01TEMP

3 MEMBERS IN TOTAL

00125 GLOSSARY PHYSICAL-FILES GIVING REFERENCES.

GLOSSARY OF PHYSICAL FILES

P1S01TSORT  
PHYSICAL FILE

PHYSICAL FILE	P1S01TSORT REFERS TO
GROUP	TRANSACTION-RECORD
ELEMENT	EMPLOYEE-CODE
ELEMENT	TRANSACTION-CODE
GROUP	TRANSACTION-RECORD REFERS TO
ELEMENT	TRANSACTION-CODE
ELEMENT	EMPLOYEE-CODE
ELEMENT	TRANSACTION-DATA
ELEMENT	TRANSACTION-DATE
ELEMENT	EMPLOYEE-CODE REFERS TO NO MEMBERS
ELEMENT	TRANSACTION-CODE REFERS TO NO MEMBERS
ELEMENT	TRANSACTION-DATA REFERS TO NO MEMBERS
ELEMENT	TRANSACTION-DATE REFERS TO
ELEMENT	STANDARD-DATE
ELEMENT	STANDARD-DATE
ELEMENT	STANDARD-DATE
ELEMENT	STANDARD-DATE REFERS TO NO MEMBERS

P1U02MEMP  
PHYSICAL FILE

PHYSICAL FILE	P1U02MEMP REFERS TO
RECORD	EMPLOYEE-MASTER-RECORD
ELEMENT	EMPLOYEE-CODE
RECORD	EMPLOYEE-MASTER-RECORD REFERS TO
ELEMENT	EMPLOYEE-CODE
GROUP	EMPLOYEE-IDENTIFICATION
ELEMENT	EMPLOYEE-DEPARTMENT
ELEMENT	EMPLOYEE-SALARY
GROUP	EDUCATION
GROUP	EXPERIENCE
ELEMENT	TAX-CODE
ELEMENT	SOCIAL-SECURITY-CODE
ELEMENT	EMPLOYEE-CODE
ELEMENT	EMPLOYEE-DEPARTMENT
MODULE	P1U02
ELEMENT	EMPLOYEE-CODE REFERS TO NO MEMBERS
GROUP	EMPLOYEE-IDENTIFICATION REFERS TO
ELEMENT	EMPLOYEE-NAME
ELEMENT	EMPLOYEE-STREET
ELEMENT	EMPLOYEE-TOWN
ELEMENT	EMPLOYEE-TELEPHONE
ELEMENT	EMPLOYEE-DEPARTMENT REFERS TO NO MEMBERS
ELEMENT	EMPLOYEE-SALARY REFERS TO NO MEMBERS

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GROUP	EDUCATION REFERS TO
ELEMENT	COLLEGE-NAME
ELEMENT	QUALIFICATIONS
GROUP	EXPERIENCE REFERS TO
ELEMENT	EMPLOYING-COMPANY
ELEMENT	EXPERIENCE-CODE
ELEMENT	EXPERIENCE-YRS
ELEMENT	TAX-CODE REFERS TO NO MEMBERS
ELEMENT	SOCIAL-SECURITY-CODE REFERS TO NO MEMBERS
ELEMENT	EMPLOYEE-NAME REFERS TO NO MEMBERS
ELEMENT	EMPLOYEE-STREET REFERS TO NO MEMBERS
ELEMENT	EMPLOYEE-TOWN REFERS TO NO MEMBERS
ELEMENT	EMPLOYEE-TELEPHONE REFERS TO NO MEMBERS
ELEMENT	COLLEGE-NAME REFERS TO NO MEMBERS
ELEMENT	QUALIFICATIONS REFERS TO NO MEMBERS
ELEMENT	EMPLOYING-COMPANY REFERS TO NO MEMBERS
ELEMENT	EXPERIENCE-CODE REFERS TO NO MEMBERS
ELEMENT	EXPERIENCE-YRS REFERS TO
ELEMENT	EMPLOYEE-DEPARTMENT
P1V01WVAL	
PHYSICAL FILE	
PHYSICAL FILE	P1V01WVAL REFERS TO
GROUP	TRANSACTION-RECORD
ELEMENT	TRANSACTION-RECORD REFERS TO
ELEMENT	TRANSACTION-CODE
ELEMENT	EMPLOYEE-CODE
ELEMENT	TRANSACTION-DATA
ELEMENT	TRANSACTION-DATE
ELEMENT	TRANSACTION-CODE REFERS TO NO MEMBERS
ELEMENT	EMPLOYEE-CODE REFERS TO NO MEMBERS
ELEMENT	TRANSACTION-DATA REFERS TO NO MEMBERS
ELEMENT	TRANSACTION-DATE REFERS TO
ELEMENT	STANDARD-DATE
ELEMENT	STANDARD-DATE
ELEMENT	STANDARD-DATE
ELEMENT	STANDARD-DATE REFERS TO NO MEMBERS
P2U01TEMP	
PHYSICAL FILE	
PHYSICAL FILE	P2U01TEMP REFERS TO
GROUP	TRANSACTION-RECORD
ELEMENT	TRANSACTION-RECORD
ELEMENT	EMPLOYEE-CODE
ELEMENT	TRANSACTION-CODE
GROUP	TRANSACTION-RECORD REFERS TO
ELEMENT	TRANSACTION-CODE
ELEMENT	EMPLOYEE-CODE
ELEMENT	TRANSACTION-DATA
ELEMENT	TRANSACTION-DATE
ELEMENT	EMPLOYEE-CODE REFERS TO NO MEMBERS
ELEMENT	TRANSACTION-CODE REFERS TO NO MEMBERS
ELEMENT	TRANSACTION-DATA REFERS TO NO MEMBERS
ELEMENT	TRANSACTION-DATE REFERS TO
ELEMENT	STANDARD-DATE
ELEMENT	STANDARD-DATE
ELEMENT	STANDARD-DATE
ELEMENT	STANDARD-DATE REFERS TO NO MEMBERS

GLOSSARY CONTAINS 4 PHYSICAL FILES

X360

00126 LIST ATTRIBUTES.

MEMBER NAME	TYPE	USAGE	CONDITION	AC	ALT	REM	OWNER
AUDITED	ATTRIBUTE	31					
AUDITED=CONTROL-2 15 SEP 1981	ATTRIBUTE	6					
AUDITED=CONTROL-2 16 SEP 1981	ATTRIBUTE	25					
CIRCULATION	ATTRIBUTE	3					

LIST CONTAINS 4 ATTRIBUTES  
0 MEMBERS IN TOTAL

00127 GLOSSARY FOR REPORTS GIVING TITLE, CIRCULATION  
00128 , PRINT-RUN.

GLOSSARY OF REPORTS

EMPLOYEE-HISTORY-REPORT  
 REPORT  
 TITLE MONTHLY EMPLOYEE HISTORY REPORT  
 CIRCULATION  
 PERSONNEL DEPARTMENT  
 SALARY & WAGES DEPARTMENT  
 PRINT-RUN 2

EMPLOYEE-REPORT  
 REPORT  
 TITLE WEEKLY EMPLOYEE DETAILS REPORT  
 CIRCULATION  
 PERSONNEL DEPARTMENT  
 PRINT-RUN 1

UPDATE-CONTROL-REPORT  
 REPORT  
 TITLE WEEKLY EMPLOYEE UPDATE CONTROL REPORT  
 CIRCULATION  
 PERSONNEL DEPARTMENT  
 AUDITING SECTION  
 CONTROL FILE  
 PRINT-RUN 3

GLOSSARY CONTAINS 3 REPORTS

00129 WHICH JOBS HAVE SUPPORT-PROGRAMMER SPECIFIED.

THE FOLLOWING JOBS SATISFY THE GIVEN CRITERIA

JOB	P1J01
JOB	P1J02
JOB	P2J01

3 MEMBERS IN TOTAL

00130 WHICH MEMBERS HAVE CIRCULATION INCLUDING  
00131 'SALARY & WAGES DEPARTMENT'.

THE FOLLOWING SELECTED MEMBERS SATISFY THE GIVEN CRITERIA

REPORT	EMPLOYEE-HISTORY-REPORT
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1 MEMBER IN TOTAL

*User Defined Attributes can be displayed by using the LIST ATTRIBUTES command. The list only contains attributes that have been specified as being indexed (see forms UDS 60-1, 60-4 section Cii); values for attributes may also be displayed if so specified (see form UDS 60-4 section Cii).*

*User Defined Attributes can be requested as part of the GLOSSARY command*

*... or WHICH command.*

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```
DM01541I 00132 KEEP LIST PHYSICAL-FILES.  
          4 ENTRIES ADDED TO KEPT-DATA LIST  
  
          00133 PERFORM "PROD COBOL FR * NOGE PR G FD."  
          00134 "SPACE 5." KEPT-DATA.  
DM01551I          8 GENERATED INPUT LINES  
  
          FD P1S01TSORT  
          BLOCK CONTAINS 46 CHARACTERS  
          LABEL RECORDS ARE STANDARD  
          DATA RECORD IS TRANSACTION-RECORD.  
DM02217I          P1S01TSORT SUCCESSFULLY GENERATED  
  
  
  
          FD P1U02MEMP  
          BLOCK CONTAINS 205 CHARACTERS  
          LABEL RECORDS ARE STANDARD  
          DATA RECORD IS EMPLOYEE-MASTER-RECORD.  
DM02217I          P1U02MEMP SUCCESSFULLY GENERATED  
  
  
  
          FD P1V01WVAL  
          BLOCK CONTAINS 46 CHARACTERS  
          LABEL RECORDS ARE STANDARD  
          DATA RECORD IS TRANSACTION-RECORD.  
DM02217I          P1V01WVAL SUCCESSFULLY GENERATED  
  
  
  
          FD P2U01TEMP  
          BLOCK CONTAINS 50 CHARACTERS  
          LABEL RECORDS ARE OMITTED  
          DATA RECORD IS TRANSACTION-RECORD.  
DM02217I          P2U01TEMP SUCCESSFULLY GENERATED
```

*Let us produce COBOL file descriptions for all PHYSICAL-FILES, by using a combination of KEEP and PERFORM "PRODUCE ...". Note that the PRODUCE command shown uses permitted keyword truncation. Note also the use of SPACE to improve the layout of the generated output.*

**CHAPTER 4**

**DATAMANAGER/TOTAL DEMONSTRATION (X400)**



<p><b>COMMANDS DEMONSTRATED</b></p> <p>STATUS "TOT".          AUTHORITY "ANALYST".          LIST TOTAL-DATABASES.          REPORT EMPLOYEE-DATABASE.          KEEP WHAT CONSTITUTES EMPLOYEE-DATABASE.          LIST KEPT-DATA ALPHABETICALLY.          BULK PRINT KEPT-DATA ALPHABETICALLY.          WHICH TOTAL-FILES CONSTITUTE EMPLOYEE-DATABASE.          WHICH FILE USES EMPLOYEE-CODE VIA LINK.          REPORT EMPLOYEE-MASTER-DATA.          PRODUCE TOTAL-4 FROM EMPLOYEE-DATABASE PRINT          NOGEN WITH-ALIAS TOTAL.          PRODUCE TOTAL-7 FROM EMPLOYEE-DATABASE PRINT          WITH-ALIAS TOTAL NOGEN.          PRODUCE TOTAL-8 FROM EMPLOYEE-DATABASE PRINT          WITH-ALIAS TOTAL NOGEN.</p>	<p><b>DESCRIPTION</b></p> <p>DATAMANAGER EXAMPLE DICTIONARY - TOTAL DATABASE SUPPLEMENT</p> <p>To show the TOTAL database defined in the DATAMANAGER example dictionary in status TOT, and to show various forms of documentation and interrogation and source language generation outputs from it.</p> <div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;">EMPLOYEE-DATABASE</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; border: 1px solid black; padding: 2px;"> <p style="text-align: center;">TOTAL MASTER FILE</p> <div style="border: 1px solid black; padding: 2px;"> <p style="text-align: center;">EMPLOYEE-MASTER-DATA</p> <p>EMPLOYEE-CODE*                      EMPLOYEE-IDENTIFICATION                      EMPLOYEE-NAME                      EMPLOYEE-STREET                      EMPLOYEE-TOWN                      EMPLOYEE-TELEPHONE                      EMPLOYEE-DEPARTMENT                      EMPLOYEE-SALARY                      EDUCATION                      COLLEGE-NAME                      QUALIFICATIONS                      EXPERIENCE                      EMPLOYING-COMPANY                      EXPERIENCE-CODE                      EXPERIENCE-YRS                      TAX-CODE                      SOCIAL-SECURITY-CODE</p> </div> </td> <td style="width: 10%; text-align: center; vertical-align: middle;"> <p>L1 - - - - -</p> </td> <td style="width: 40%; border: 1px solid black; padding: 2px;"> <p style="text-align: center;">TOTAL VARIABLE FILE</p> <div style="border: 1px solid black; padding: 2px;"> <p style="text-align: center;">EMPLOYEE-HISTORY-DATA</p> <p>TRANSACTION-CODE                      EMPLOYEE-HISTORY-RECORD                      EMPLOYEE-CODE                      TRANSACTION-RECORD                      TRANSACTION-DATA                      TRANSACTION-DATE                      LEAVING-DATA</p> </div> <p style="text-align: center;">* control-key L1 is EMPLOYEE-CODE</p> </td> </tr> </table> </div> <p>EMPLOYEE-DATABASE is intended for simple demonstration only.</p>	<p style="text-align: center;">TOTAL MASTER FILE</p> <div style="border: 1px solid black; padding: 2px;"> <p style="text-align: center;">EMPLOYEE-MASTER-DATA</p> <p>EMPLOYEE-CODE*                      EMPLOYEE-IDENTIFICATION                      EMPLOYEE-NAME                      EMPLOYEE-STREET                      EMPLOYEE-TOWN                      EMPLOYEE-TELEPHONE                      EMPLOYEE-DEPARTMENT                      EMPLOYEE-SALARY                      EDUCATION                      COLLEGE-NAME                      QUALIFICATIONS                      EXPERIENCE                      EMPLOYING-COMPANY                      EXPERIENCE-CODE                      EXPERIENCE-YRS                      TAX-CODE                      SOCIAL-SECURITY-CODE</p> </div>	<p>L1 - - - - -</p>	<p style="text-align: center;">TOTAL VARIABLE FILE</p> <div style="border: 1px solid black; padding: 2px;"> <p style="text-align: center;">EMPLOYEE-HISTORY-DATA</p> <p>TRANSACTION-CODE                      EMPLOYEE-HISTORY-RECORD                      EMPLOYEE-CODE                      TRANSACTION-RECORD                      TRANSACTION-DATA                      TRANSACTION-DATE                      LEAVING-DATA</p> </div> <p style="text-align: center;">* control-key L1 is EMPLOYEE-CODE</p>
<p style="text-align: center;">TOTAL MASTER FILE</p> <div style="border: 1px solid black; padding: 2px;"> <p style="text-align: center;">EMPLOYEE-MASTER-DATA</p> <p>EMPLOYEE-CODE*                      EMPLOYEE-IDENTIFICATION                      EMPLOYEE-NAME                      EMPLOYEE-STREET                      EMPLOYEE-TOWN                      EMPLOYEE-TELEPHONE                      EMPLOYEE-DEPARTMENT                      EMPLOYEE-SALARY                      EDUCATION                      COLLEGE-NAME                      QUALIFICATIONS                      EXPERIENCE                      EMPLOYING-COMPANY                      EXPERIENCE-CODE                      EXPERIENCE-YRS                      TAX-CODE                      SOCIAL-SECURITY-CODE</p> </div>	<p>L1 - - - - -</p>	<p style="text-align: center;">TOTAL VARIABLE FILE</p> <div style="border: 1px solid black; padding: 2px;"> <p style="text-align: center;">EMPLOYEE-HISTORY-DATA</p> <p>TRANSACTION-CODE                      EMPLOYEE-HISTORY-RECORD                      EMPLOYEE-CODE                      TRANSACTION-RECORD                      TRANSACTION-DATA                      TRANSACTION-DATE                      LEAVING-DATA</p> </div> <p style="text-align: center;">* control-key L1 is EMPLOYEE-CODE</p>		

DM00096I 00143 STATUS "TOT".  
NON-FROZEN STATUS TOT RECOGNISED

DM01060I 00144 AUTHORITY "ANALYST".  
AUTHORITY RECOGNISED

00145 LIST TOTAL-DATABASES.

LIST OF TOTAL DATABASES

MEMBER NAME	TYPE	USAGE	CONDITION	AC	ALT	REM	OWNER
EMPLOYEE-DATABASE	TOTAL DB	0	SCE ENC	YES	YES	YES	YES
LIST CONTAINS	1 TOTAL DATABASE						

X400

00146 REPORT EMPLOYEE-DATABASE.

Report EMPLOYEE-DATABASE.

REPORT OF TOTAL DATABASE EMPLOYEE-DATABASE

EDITION 3 ENCODED BY MASTER AT 13.51.39 ON 26 NOV 1981  
STATUS TOT  
PROTECTION: NONE

ALIAS  
TOTAL EMPDBS

THIS MEMBER IS DIRECTLY REFERRED TO 0 TIMES  
THIS MEMBER CONTAINS 2 DIRECT REFERENCES

TOTAL DATABASE EMPLOYEE-DATABASE

SHARE-IOAREA 'EMPI'

CONTAINS  
TOTAL MASTER FILE EMPLOYEE-MASTER-DATA  
TOTAL VARIABLE FILE EMPLOYEE-HISTORY-DATA

X400

00147 KEEP WHAT CONSTITUTES EMPLOYEE-DATABASE.  
DM01541I 26 ENTRIES ADDED TO KEPT-DATA LIST

Produce a list of contained members

00148 LIST KEPT-DATA ALPHABETICALLY.

LIST OF SELECTED MEMBERS  
MEMBER NAME

MEMBER NAME	TYPE	USAGE	CONDITION	AC	ALT	REM	OWNER
COLLEGE-NAME	ITEM	1	SCE	ENC	YES	YES	YES
EDUCATION	GROUP	2	SCE	ENC	YES	YES	YES
EMPLOYEE-CODE	ITEM	7	SCE	ENC	YES	YES	PERSONNEL
EMPLOYEE-DEPARTMENT	ITEM	3	SCE	ENC	YES	YES	PERSONNEL
EMPLOYEE-HISTORY-DATA	TOTAL VARBLE	2	SCE	ENC	YES	YES	YES
EMPLOYEE-HISTORY-RECORD	GROUP	1	SCE	ENC	YES	YES	YES
EMPLOYEE-IDENTIFICATION	GROUP	2	SCE	ENC	YES	YES	YES
EMPLOYEE-MASTER-DATA	TOTAL MASTER	2	SCE	ENC	YES	YES	YES
EMPLOYEE-NAME	ITEM	2	SCE	ENC	YES	YES	PERSONNEL
EMPLOYEE-SALARY	ITEM	3	SCE	ENC	YES	YES	PERSONNEL
EMPLOYEE-STREET	ITEM	1	SCE	ENC	YES	YES	YES
EMPLOYEE-TELEPHONE	ITEM	1	SCE	ENC	YES	YES	YES
EMPLOYEE-TOWN	ITEM	1	SCE	ENC	YES	YES	YES
EMPLOYING-COMPANY	ITEM	1	SCE	ENC	YES	YES	YES
EXPERIENCE	GROUP	2	SCE	ENC	YES	YES	YES
EXPERIENCE-CODE	ITEM	1	SCE	ENC	YES	YES	YES
EXPERIENCE-YRS	ITEM	1	SCE	ENC	YES	YES	YES
LEAVING-DATA	ITEM	1	SCE	ENC	YES	YES	YES
QUALIFICATIONS	ITEM	1	SCE	ENC	YES	YES	YES
SOCIAL-SECURITY-CODE	ITEM	3	SCE	ENC	YES	YES	PERSONNEL
STANDARD-DATE	ITEM	3	SCE	ENC	YES	YES	YES
TAX-CODE	ITEM	3	SCE	ENC	YES	YES	PERSONNEL
TRANSACTION-CODE	ITEM	3	SCE	ENC	YES	YES	YES
TRANSACTION-DATA	ITEM	2	SCE	ENC	YES	YES	YES
TRANSACTION-DATE	ITEM	2	SCE	ENC	YES	YES	YES
TRANSACTION-RECORD	GROUP	1	SCE	ENC	YES	YES	YES

LIST CONTAINS  
 19 ITEMS  
 5 GROUPS  
 2 TOTAL FILES  
 26 MEMBERS IN TOTAL

X400

00149 BULK PRINT KEPT-DATA ALPHABETICALLY.

... and a print of contained members.

PRINT OF COLLEGE-NAME  
00100 ITEM  
00200 DEFAULTED-AS CHARACTER 30  
07000 ALIAS TOTAL 'COME'  
08000 CATALOG 'EMPLOYEE', 'DESCRIPTION'  
09000 DESCRIPTION  
09100 'NAME OF COLLEGE/FACULTY'  
END OF PRINT

PRINT OF EDUCATION  
00100 GROUP  
00200 CONTAINS COLLEGE-NAME,  
00300 QUALIFICATIONS  
07000 ALIAS TOTAL 'EDON'  
09000 DESCRIPTION  
09100 'EDUCATION RECEIVED BY EMPLOYEE INCLUDING PROFESSIONAL TRAINING'  
10000 NOTE  
10100 'ACCURACY'  
10200 ' ALL COLLEGE CERTIFICATES CHECKED'  
10300 ' AND REFERENCES OBTAINED'  
END OF PRINT

PRINT OF EMPLOYEE-CODE  
00100 ITEM  
00200 ENTERED-AS ALPHANUMERIC 4  
00300 HELD-AS NUMERIC 4 CONTENTS RANGE 1000 TO 8000  
00400 REPORTED-AS PICTURE '9999'  
07000 ALIAS TOTAL 'EMPC'  
08000 CATALOG 'EMPLOYEE', 'CODE'  
09000 DESCRIPTION  
09100 'STANDARD EMPLOYEE CODE'  
10000 NOTE  
10100 'INPUT FORM'  
10200 ' EMPLOYEE-TRANSACTIONS-FORM'  
END OF PRINT

PRINT OF EMPLOYEE-DEPARTMENT  
00100 ITEM  
00200 HELD-AS NUMERIC-CHARACTER 3 CONTENTS  
00300 RANGE 100 TO 150  
00400 ELSE IS 180  
00500 ELSE RANGE 200 TO 900  
00600 REPORTED-AS PICTURE '999'  
00700 ENTERED-AS NUMERIC-CHARACTER 3  
07000 ALIAS TOTAL 'EMPD'  
08000 CATALOG 'EMPLOYEE', 'CODE'  
09000 DESCRIPTION  
09100 'EMPLOYEE DEPARTMENT CODE'  
END OF PRINT

PRINT OF EMPLOYEE-HISTORY-DATA  
00100 FILE TOTAL VARIABLE  
00200 CONTAINS TRANSACTION-CODE, EMPLOYEE-HISTORY-RECORD, TRANSACTION-RECORD ELSE  
00300 LEAVING-DATA IF TRANSACTION-CODE = '99'  
00400 LINK EMPLOYEE-CODE TO EMPLOYEE-MASTER-DATA LINK-NAME 'L1'  
00500 DEVICE 3340  
00600 LOGICAL-BLOCKS-PER-TRACK 1  
00700 ALIAS TOTAL 'EMPV'  
END OF PRINT

PRINT OF EMPLOYEE-HISTORY-RECORD  
00100 GROUP  
00200 REPORTED-AS  
00300 CONTAINS EMPLOYEE-CODE  
00400 ALIAS TOTAL 'HREC'  
00500 DESCRIPTION  
00600 'EMPLOYEE HISTORY REPORT DATA'  
END OF PRINT

PRINT OF EMPLOYEE-IDENTIFICATION  
00100 GROUP  
00200 CONTAINS EMPLOYEE-NAME,  
00300 EMPLOYEE-STREET,  
00400 EMPLOYEE-TOWN,  
00500 EMPLOYEE-TELEPHONE  
07000 ALIAS TOTAL 'EMPI'  
09000 DESCRIPTION  
09100 'NAME, ADDRESS AND TELEPHONE NUMBER OF AN EMPLOYEE'  
10000 NOTE  
10100 'ACCURACY'  
10200 ' NAME CHECKED AGAINST BIRTH CERTIFICATE'  
10300 ' ADDRESS AND TELEPHONE NUMBER NOT CHECKED'  
END OF PRINT

PRINT OF EMPLOYEE-MASTER-DATA

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00100 FILE TOTAL MASTER  
00200 CONTAINS EMPLOYEE-CODE,  
00300 EMPLOYEE-IDENTIFICATION,  
00500 EMPLOYEE-SALARY,  
00600 EDUCATION,  
00700 EXPERIENCE,  
00800 TAX-CODE,  
00900 SOCIAL-SECURITY-CODE  
01000 CONTROL EMPLOYEE-CODE  
01100 LINKED-TO EMPLOYEE-HISTORY-DATA LINK-NAME 'L1'  
01200 DEVICE 3340  
01300 IOAREA 'EMPI'  
01400 LOGICAL-BLOCKS-PER-TRACK 1  
07000 ALIAS TOTAL 'EMPM'  
END OF PRINT

PRINT OF EMPLOYEE-NAME  
00100 ITEM  
00200 HELD-AS CHARACTER 30  
00300 REPORTED-AS PICTURE 'X(10)B(5)X(10)B(3)X(10)'  
07000 ALIAS TOTAL 'EMPN'  
08000 CATALOG 'EMPLOYEE', 'DESCRIPTION'  
09000 DESCRIPTION  
09100 'EMPLOYEE SURNAME, FIRST NAME AND MIDDLE NAME'  
END OF PRINT

PRINT OF EMPLOYEE-SALARY  
00100 ITEM  
00200 HELD-AS NUMERIC 5 CONTENTS RANGE 10000 TO 50000  
00300 REPORTED-AS PICTURE '£B99,999'  
07000 ALIAS TOTAL 'EMPY'  
08000 CATALOG 'SALARY', 'NUMERIC'  
09000 DESCRIPTION  
09100 'YEARLY SALARY. INCLUDES GEOGRAPHICAL ALLOWANCES'  
END OF PRINT

PRINT OF EMPLOYEE-STREET  
00100 ITEM  
00200 DEFAULTED-AS CHARACTER 40  
07000 ALIAS TOTAL 'EMPS'  
08000 CATALOG 'EMPLOYEE', 'DESCRIPTION'  
09000 DESCRIPTION  
09100 'EMPLOYEE STREET NAME INCLUDING ANY APARTMENT NUMBER'  
END OF PRINT

PRINT OF EMPLOYEE-TELEPHONE  
00100 ITEM  
00200 HELD-AS NUMERIC 10  
00300 REPORTED-AS PICTURE '9998899989999'  
07000 ALIAS TOTAL 'EMPE'  
08000 CATALOG 'EMPLOYEE', 'DESCRIPTION'  
09000 DESCRIPTION  
09100 'EMPLOYEE TELEPHONE NUMBER INCLUDING CODE'  
END OF PRINT

PRINT OF EMPLOYEE-TOWN  
00100 ITEM  
00200 DEFAULTED-AS CHARACTER 20  
07000 ALIAS TOTAL 'EMPT'  
08000 CATALOG 'EMPLOYEE', 'DESCRIPTION'  
09000 DESCRIPTION  
09100 'EMPLOYEE HOME TOWN NAME AND POST CODE'  
END OF PRINT

PRINT OF EMPLOYING-COMPANY  
00100 ITEM  
00200 DEFAULTED-AS CHARACTER 30  
07000 ALIAS TOTAL 'EMNY'  
08000 CATALOG 'EMPLOYEE', 'DESCRIPTION'  
09000 DESCRIPTION  
09100 'NAME OF OUTSIDE COMPANY OR INTERNAL DEPARTMENT OF THIS ORGANISATION'  
END OF PRINT

PRINT OF EXPERIENCE  
00100 GROUP  
00200 CONTAINS EMPLOYING-COMPANY,  
00300 EXPERIENCE-CODE,  
00400 EXPERIENCE-YRS  
07000 ALIAS TOTAL 'EEXP'  
09000 DESCRIPTION  
09100 'EXPERIENCE GAINED (INCLUDING EXPERIENCE GAINED WITHIN THIS ORGANISATION)'  
10000 NOTE  
10100 'ACCURACY'  
10200 'REFERENCES OBTAINED FROM LAST TWO'  
10300 'EMPLOYING ORGANISATIONS'  
END OF PRINT

X400

00100 PRINT OF EXPERIENCE-CODE  
00200 ITEM  
07000 DEFAULTED-AS NUMERIC 2 CONTENTS RANGE 01 TO 99  
08000 ALIAS TOTAL 'EMCY'  
09000 CATALOG 'EMPLOYEE', 'CODE'  
09100 DESCRIPTION  
'EXPERIENCE CODE TAKEN FROM STANDARD CODING BOOK'  
END OF PRINT

00100 PRINT OF EXPERIENCE-YRS  
00200 ITEM  
00300 DEFAULTED-AS NUMERIC 4 CONTENTS  
00400 RANGE 01 TO 10  
00500 ELSE RANGE 01 TO 15  
07000 IF EMPLOYEE-DEPARTMENT EQ 180  
08000 ALIAS TOTAL 'EXPY'  
09000 CATALOG 'EMPLOYEE', 'NUMERIC'  
09100 DESCRIPTION  
'NUMBER OF YEARS EXPERIENCE'  
END OF PRINT

00100 PRINT OF LEAVING-DATA  
00200 ITEM  
00300 ENTERED-AS CHARACTER 60  
07000 HELD-AS CHARACTER 60  
08000 ALIAS TOTAL 'LETA'  
09000 CATALOG 'EMPLOYEE', 'DESCRIPTION'  
09100 DESCRIPTION  
'LEAVING DATA INPUT VIA V.D.U.'  
10000 NOTE  
10100 'INPUT FORM'  
10200 'EMPLOYEE-LEAVING-FORM'  
20000 ACCESS-AUTHORITY  
20100 'ACCOUNTS' READ-ONLY,  
20200 'AUDITOR' READ-ONLY,  
20300 'PERSONNEL' UPDATE,  
20400 'PERSONNEL-MANAGER' SECURITY-CONTROL  
23000 FREQUENCY WEEKLY  
25000 SECURITY-CLASSIFICATION 'CONFIDENTIAL'  
END OF PRINT

00100 PRINT OF QUALIFICATIONS  
00200 ITEM  
07000 DEFAULTED-AS CHARACTER 10  
08000 ALIAS TOTAL 'QUNS'  
09000 CATALOG 'EMPLOYEE', 'DESCRIPTION'  
09100 DESCRIPTION  
'QUALIFICATION OBTAINED AND DATE OF CERTIFICATE (SHOWN AS MM/YY)'  
END OF PRINT

00100 PRINT OF SOCIAL-SECURITY-CODE  
00200 ITEM  
00300 ENTERED-AS 1 ALPHANUMERIC 15  
00400 ENTERED-AS 2 CHARACTER 15  
00500 HELD-AS ALPHANUMERIC 15  
07000 REPORTED-AS PICTURE 'XXXBX(5)B999BXXXX'  
ALIAS TOTAL 'SOSC'

08000 CATALOG 'SALARY', 'CODE'  
09000 DESCRIPTION  
09100 'CURRENT EMPLOYEE SOCIAL SECURITY CODE'  
END OF PRINT

00100 PRINT OF STANDARD-DATE  
00200 ITEM  
00300 ENTERED-AS CHARACTER 8 CONTENTS FORMAT 'DD/MM/YY'  
00400 HELD-AS NUMERIC-CHARACTER 6  
07000 REPORTED-AS PICTURE '99X99X99' CONTENTS FORMAT 'DD/MM/YY'  
08000 ALIAS LOW-LEVEL 'STDATE'  
09000 CATALOG 'EMPLOYEE', 'DATE'  
09100 DESCRIPTION  
'PERSONNEL STANDARD DATE FORMATS'  
END OF PRINT

00100 PRINT OF TAX-CODE  
00200 ITEM  
00300 DEFAULTED-AS NUMERIC 4 CONTENTS IS 538  
00400 ELSE IS 670  
00500 ELSE RANGE 1000 TO 6000  
07000 ALIAS TOTAL 'TAXC'  
08000 CATALOG 'SALARY', 'CODE'  
09000 DESCRIPTION  
09100 'EMPLOYEE TAX CODE SENT BY TAX OFFICE'  
10000 NOTE  
10100 'ACCURACY'  
10200 'TAX CODE IS ONE MONTH OUT OF DATE'

X400

END OF PRINT

PRINT OF TRANSACTION-CODE  
00100 ITEM  
00200 ENTERED-AS CHARACTER 2  
00300 HELD-AS NUMERIC 2 CONTENTS RANGE 10 TO 90  
00400 REPORTED-AS PICTURE '99'  
00500 ALIAS TOTAL 'CODE'  
00600 CATALOG 'EMPLOYEE', 'CODE'  
00700 DESCRIPTION  
00800 'EMPLOYEE TRANSACTION CODE'  
END OF PRINT

PRINT OF TRANSACTION-DATA  
00100 ITEM  
00200 ENTERED-AS CHARACTER 40  
00300 HELD-AS CHARACTER 40  
07000 ALIAS TOTAL 'TRTA'  
08000 CATALOG 'EMPLOYEE', 'DESCRIPTION', 'NUMERIC'  
09000 DESCRIPTION  
09100 'TRANSACTION DATA INPUT VIA V.D.U.'  
10000 NOTE  
10100 'INPUT FORM'  
10200 ' EMPLOYEE-TRANSACTIONS-FORM'  
10300 ', '  
10400 'ACCURACY'  
10500 ' PERSONNEL DEPARTMENT IS RESPONSIBLE'  
10600 ' FOR ENSURING THAT DATA IS COMPLETELY'  
10700 ' CORRECT'  
END OF PRINT

PRINT OF TRANSACTION-DATE  
00100 ITEM  
00200 ENTERED-AS NAME STANDARD-DATE  
00300 HELD-AS NAME STANDARD-DATE  
00400 REPORTED-AS NAME STANDARD-DATE  
07000 ALIAS TOTAL 'TRTE'  
08000 CATALOG 'EMPLOYEE', 'DATE'  
09000 DESCRIPTION  
09100 'EMPLOYEE TRANSACTION DATE'  
10000 NOTE  
10100 'ACCURACY'  
10200 ' DATE IS TAKEN FROM OPERATING SYSTEM'  
10300 ' SUPERVISOR AT THE TIME OF INPUT'  
END OF PRINT

PRINT OF TRANSACTION-RECORD  
00100 GROUP  
00200 CONTAINS TRANSACTION-DATA,  
00300 TRANSACTION-DATE  
07000 ALIAS TOTAL 'TRRD'  
09000 DESCRIPTION  
09100 'EMPLOYEE HISTORY REPORT DATA'  
END OF PRINT

26 MEMBERS PROCESSED BY BULK PRINT

X400

00150 WHICH TOTAL-FILES CONSTITUTE EMPLOYEE-DATABASE.

Interrogation of TOTAL members.

THE FOLLOWING TOTAL FILES SATISFY THE GIVEN CRITERIA

TOTAL MASTER FILE	EMPLOYEE-MASTER-DATA
TOTAL VARIABLE FILE	EMPLOYEE-HISTORY-DATA

2 MEMBERS IN TOTAL

00151 WHICH FILE USES EMPLOYEE-CODE VIA LINK.

THE FOLLOWING SELECTED MEMBERS SATISFY THE GIVEN CRITERIA

TOTAL VARIABLE FILE	EMPLOYEE-HISTORY-DATA
TOTAL MASTER FILE	EMPLOYEE-MASTER-DATA

2 MEMBERS IN TOTAL

00152 REPORT EMPLOYEE-MASTER-DATA.

REPORT OF TOTAL MASTER FILE EMPLOYEE-MASTER-DATA

EDITION 6 ENCODED BY MASTER AT 13.51.46 ON 26 NOV 1981  
STATUS TOT  
PROTECTION: NONE

ALIAS  
TOTAL EMPW

THIS MEMBER IS DIRECTLY REFERRED TO 2 TIMES  
THIS MEMBER CONTAINS 9 DIRECT REFERENCES

TOTAL MASTER FILE EMPLOYEE-MASTER-DATA

TYPE IS TOTAL MASTER  
DEVICE 3340  
LOGICAL-BLOCKS-PER-TRACK 1  
IOAREA 'EMP1'

CONTROL EMPLOYEE-CODE  
LINKED-TO EMPLOYEE-HISTORY-DATA LINK-NAME 'L1'

CONTAINS  
ITEM EMPLOYEE-CODE  
GROUP EMPLOYEE-IDENTIFICATION  
ITEM EMPLOYEE-SALARY  
GROUP EDUCATION  
GROUP EXPERIENCE  
ITEM TAX-CODE  
ITEM SOCIAL-SECURITY-CODE

X400

00153 PRODUCE TOTAL-4 FROM EMPLOYEE-DATABASE PRINT  
00154 NOGEN WITH-ALIAS TOTAL.

Produce TOTAL/4.

BEGIN-DATA-BASE-GENERATION:

DATA-BASE-NAME=EMPDBS

SHARE-IO:

IOAREA=EMP1

BEGIN-MASTER-DATA-SET:

DATA-SET-NAME=EMPM

IOAREA=EMP1

MASTER-DATA:

EMPMROOT=8

EMPMCTRL=4

DM02366W EMPM CONTROL FIELD - NAME HAS BEEN CHANGED

EMPMKL1=8=EMPV

EMPMEMPI=100

EMPMEMPW=(30)

EMPMEMPS=(40)

EMPMEMPT=(20)

EMPMEMPE=(10)

EMPMEMPY=5

EMPMEDON=40

EMPMEDON=(30)

EMPMQUNS=(10)

EMPMEXP=36

EMPMEMNY=(30)

EMPMENCY=(2)

EMPMEXPY=(4)

EMPMTAXC=4

EMPMOSOC=15

END-DATA:

DEVICE=3340

LOGICAL-BLOCKS-PER-TRACK=1

END-MASTER-DATA-SET:

BEGIN-VARIABLE-ENTRY-DATA-SET:

DATA-SET-NAME=EMPV

BASE-DATA:

EMPVCODE=2

EMPVHREC=4

EMPVEMPC=4=EMPMCTRL

EMPMKL1=8=EMPVEMPC

EMPVTRRD=60

EMPVTRTA=(40)

EMPVTRTE=(6)

EMPV0001=(14)

RECORD-CODE=99

EMPVLETA=(60)

END-DATA:

DEVICE=3340

LOGICAL-BLOCKS-PER-TRACK=1

END-VARIABLE-ENTRY-DATA-SET:

END-DATA-BASE-GENERATION:

DM02217I EMPLOYEE-DATABASE SUCCESSFULLY GENERATED

X400

00155 PRODUCE TOTAL-7 FROM EMPLOYEE-DATABASE PRINT  
00156 WITH-ALIAS TOTAL NOGEN.

Produce TOTAL/7.

```
BEGIN-DATA-BASE-GENERATION:  
DATA-BASE-NAME=EMPDBS  
SHARE-IO:  
IOAREA=EMP1  
BEGIN-MASTER-DATA-SET:  
DATA-SET-NAME=EMPM  
IOAREA=EMP1  
MASTER-DATA:  
EMPMROOT=8  
EMPMCTRL=4  
DM02366W EMPM CONTROL FIELD - NAME HAS BEEN CHANGED  
EMPMKL1=8  
EMPMEMPI=100  
.2. EMPMEMPN=30  
.2. EMPMEMPS=40  
.2. EMPMEMPT=20  
.2. EMPMEMPE=10  
EMPMEMPY=5  
EMPMEDON=40  
.2. EMPMCOME=30  
.2. EMPMQUNS=10  
EMPMEXP=36  
.2. EMPMEMNY=30  
.2. EMPMEMCY=2  
.2. EMPMEXPY=4  
EMPMTAXC=4  
EMPMOSOC=15  
END-DATA:  
DEVICE=3340  
LOGICAL-BLOCKS-PER-TRACK=1  
END-MASTER-DATA-SET:  
BEGIN-VARIABLE-ENTRY-DATA-SET:  
DATA-SET-NAME=EMPV  
BASE-DATA:  
EMPVCODE=2  
EMPVHREC=4  
.2. EMPVEMPC=4  
EMPMKL1=8  
EMPVTRRD=60  
.2. EMPVTRTA=40  
.2. EMPVTRTE=6  
.2. EMPV001=14  
RECORD-CODE=99  
.2. EMPVLETA=60  
END-DATA:  
DEVICE=3340  
LOGICAL-BLOCKS-PER-TRACK=1  
END-VARIABLE-ENTRY-DATA-SET:  
END-DATA-BASE-GENERATION:  
DM02217I EMPLOYEE-DATABASE SUCCESSFULLY GENERATED
```

X400

00157      PRODUCE TOTAL-8 FROM EMPLOYEE-DATABASE PRINT  
00158      WITH-ALIAS TOTAL NOGEN.

Produce TOTAL/8.

BEGIN-DATA-BASE-GENERATION:  
DATA-BASE-NAME=EMPDBS  
SHARE-IO:  
IOAREA=EMP1  
BEGIN-MASTER-DATA-SET:  
DATA-SET-NAME=EMPM  
IOAREA=EMP1  
MASTER-DATA:  
EMPMROOT=8  
EMPMCTRL=4

DM02366W      EMPC CONTROL FIELD - NAME HAS BEEN CHANGED

EMPMLKL1=8  
EMPMEMPI=100  
  .2. EMPMEMPN=30  
  .2. EMPMEMPS=40  
  .2. EMPMEMPT=20  
  .2. EMPMEMPE=10  
EMPMEMPY=5  
EMPMEDON=40  
  .2. EMPMCOME=30  
  .2. EMPMQUNS=10  
EMPMEEEXP=36  
  .2. EMPMEMNY=30  
  .2. EMPMEMCY=2  
  .2. EMPMEXPY=4  
EMPMTAXC=4  
EMPMOSOC=15  
END-DATA:  
DEVICE=3340  
LOGICAL-BLOCKS-PER-TRACK=1  
END-MASTER-DATA-SET:  
BEGIN-VARIABLE-ENTRY-DATA-SET:  
DATA-SET-NAME=EMPV  
BASE-DATA:  
EMPVCODE=2  
EMPVHREC=4  
  .2. EMPVEMPC=4=EMPMCTRL  
EMPMLKL1=8=EMPVEMPC  
EMPVTRRD=60  
  .2. EMPVTRTA=40  
  .2. EMPVTRTE=6  
  .2. \*FILLER\*=14  
RECORD-CODE=99  
EMPVLETA=60  
END-DATA:  
DEVICE=3340  
LOGICAL-BLOCKS-PER-TRACK=1  
END-VARIABLE-ENTRY-DATA-SET:  
END-DATA-BASE-GENERATION:

DM02217I      EMPLOYEE-DATABASE SUCCESSFULLY GENERATED



**CHAPTER 5**

**DATAMANAGER/ADABAS DEMONSTRATION (X500)**



COMMANDS DEMONSTRATED	DESCRIPTION					
<p>STATUS "ADA".                      AUTHORITY "ANALYST".                      LIST ADABAS-DATABASES.                      REPORT EMPLOYEE-DB.                      KEEP WHAT CONSTITUTES EMPLOYEE-DB.                      LIST KEPT-DATA ALPHABETICALLY.                      BULK PRINT KEPT-DATA ALPHABETICALLY.                      WHICH ADABAS-FILES CONSTITUTE EMPLOYEE-DB.                      REPORT MDATA.                      WHICH FILES USE EMPLOYEE-CODE VIA DESCRIPTORS.                      WHICH PROGRAMS USE MDATA.                      REPORT P9D01.                      PRODUCE ADABAS LOADER-DEFINITIONS FROM MDATA, HDATA                      NOGEN PRINT USING HELD-AS.                      PRODUCE ADABAS BUFFERS FROM EMPDAT USED-IN P9D01                      NOGEN PRINT.</p>	<p>DATAMANAGER EXAMPLE DICTIONARY - ADABAS DATABASE SUPPLEMENT</p> <p>To show the ADABAS database defined in the DATAMANAGER example dictionary in status ADA, and to show various forms of documentation and interrogation and source language generation outputs from it.</p> <div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;">EMPLOYEE-DB</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; border: 1px solid black; padding: 5px;"> <p style="text-align: center;">ADABAS FILE</p> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;"> <p style="text-align: center;">MDATA*</p> </div> <p>EMPLOYEE-CODE**                              EMPLOYEE-DEPARTMENT**                              EMPLOYEE-SALARY                              TAX-CODE                              SOCIAL-SECURITY-CODE                              EMPLOYEE-IDENTIFICATION                              EMPLOYEE-NAME***                              EMPLOYEE-STREET                              EMPLOYEE-TOWN                              EMPLOYEE-TELEPHONE</p> </td> <td style="width: 10%; text-align: center; vertical-align: middle;">EC</td> <td style="width: 40%; border: 1px solid black; padding: 5px;"> <p style="text-align: center;">ADABAS FILE</p> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;"> <p style="text-align: center;">HDATA</p> </div> <p>EMPLOYEE-CODE**                              EMPLOYEE-DEPARTMENT**                              JOB-HISTORY                              JOB-COUNTER                              EMPLOYEE-JOB-CODE                              EXPERIENCE                              EMPLOYING-COMPANY                              EXPERIENCE-CODE                              EXPERIENCE-YRS</p> </td> </tr> </table> <p style="text-align: center;">* ciphered    ** descriptors    *** sub-descriptors</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;"> <p>FIELD NAMES:</p> <p>EC EMPLOYEE-CODE                              ED EMPLOYEE-DEPARTMENT                              ES EMPLOYEE-SALARY                              TX TAX-CODE                              SS SOCIAL-SECURITY-CODE                              EA EMPLOYEE-NAME                              ET EMPLOYEE-STREET                              EW EMPLOYEE-TOWN                              EE EMPLOYEE-TELEPHONE</p> </td> <td style="width: 50%; border: none;"> <p>JT JOB-HISTORY                              JR JOB-COUNTER                              EJ EMPLOYEE-JOB-CODE                              EX EXPERIENCE                              EY EMPLOYING-COMPANY                              EO EXPERIENCE-CODE                              ER EXPERIENCE-YRS                              EI EMPLOYEE-IDENTIFICATION</p> </td> </tr> </table> <p style="text-align: center;">EMPLOYEE-CODE (EC) is phonetic with EMPLOYEE-NUMBER (EN)</p> </div> <p>EMPLOYEE-DB is intended for simple demonstration only.</p>	<p style="text-align: center;">ADABAS FILE</p> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;"> <p style="text-align: center;">MDATA*</p> </div> <p>EMPLOYEE-CODE**                              EMPLOYEE-DEPARTMENT**                              EMPLOYEE-SALARY                              TAX-CODE                              SOCIAL-SECURITY-CODE                              EMPLOYEE-IDENTIFICATION                              EMPLOYEE-NAME***                              EMPLOYEE-STREET                              EMPLOYEE-TOWN                              EMPLOYEE-TELEPHONE</p>	EC	<p style="text-align: center;">ADABAS FILE</p> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;"> <p style="text-align: center;">HDATA</p> </div> <p>EMPLOYEE-CODE**                              EMPLOYEE-DEPARTMENT**                              JOB-HISTORY                              JOB-COUNTER                              EMPLOYEE-JOB-CODE                              EXPERIENCE                              EMPLOYING-COMPANY                              EXPERIENCE-CODE                              EXPERIENCE-YRS</p>	<p>FIELD NAMES:</p> <p>EC EMPLOYEE-CODE                              ED EMPLOYEE-DEPARTMENT                              ES EMPLOYEE-SALARY                              TX TAX-CODE                              SS SOCIAL-SECURITY-CODE                              EA EMPLOYEE-NAME                              ET EMPLOYEE-STREET                              EW EMPLOYEE-TOWN                              EE EMPLOYEE-TELEPHONE</p>	<p>JT JOB-HISTORY                              JR JOB-COUNTER                              EJ EMPLOYEE-JOB-CODE                              EX EXPERIENCE                              EY EMPLOYING-COMPANY                              EO EXPERIENCE-CODE                              ER EXPERIENCE-YRS                              EI EMPLOYEE-IDENTIFICATION</p>
<p style="text-align: center;">ADABAS FILE</p> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;"> <p style="text-align: center;">MDATA*</p> </div> <p>EMPLOYEE-CODE**                              EMPLOYEE-DEPARTMENT**                              EMPLOYEE-SALARY                              TAX-CODE                              SOCIAL-SECURITY-CODE                              EMPLOYEE-IDENTIFICATION                              EMPLOYEE-NAME***                              EMPLOYEE-STREET                              EMPLOYEE-TOWN                              EMPLOYEE-TELEPHONE</p>	EC	<p style="text-align: center;">ADABAS FILE</p> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;"> <p style="text-align: center;">HDATA</p> </div> <p>EMPLOYEE-CODE**                              EMPLOYEE-DEPARTMENT**                              JOB-HISTORY                              JOB-COUNTER                              EMPLOYEE-JOB-CODE                              EXPERIENCE                              EMPLOYING-COMPANY                              EXPERIENCE-CODE                              EXPERIENCE-YRS</p>				
<p>FIELD NAMES:</p> <p>EC EMPLOYEE-CODE                              ED EMPLOYEE-DEPARTMENT                              ES EMPLOYEE-SALARY                              TX TAX-CODE                              SS SOCIAL-SECURITY-CODE                              EA EMPLOYEE-NAME                              ET EMPLOYEE-STREET                              EW EMPLOYEE-TOWN                              EE EMPLOYEE-TELEPHONE</p>	<p>JT JOB-HISTORY                              JR JOB-COUNTER                              EJ EMPLOYEE-JOB-CODE                              EX EXPERIENCE                              EY EMPLOYING-COMPANY                              EO EXPERIENCE-CODE                              ER EXPERIENCE-YRS                              EI EMPLOYEE-IDENTIFICATION</p>					

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00161 STATUS "ADA".
DM00096I NON-FROZEN STATUS ADA RECOGNISED

00162 AUTHORITY "ANALYST".
DM01060I AUTHORITY RECOGNISED

00163 LIST ADABAS-DATABASES.
    
```

MEMBER NAME	TYPE	USAGE	CONDITION	AC	ALT	REM	OWNER
EMPLOYEE-DB	ADABAS DB	0	SCE	ENC	YES	YES	YES
LIST CONTAINS	1 ADABAS DATABASE						

X500

00164 REPORT EMPLOYEE-DB.

Report EMPLOYEE-DB.

REPORT OF ADABAS DATABASE EMPLOYEE-DB

EDITION 3 ENCODED BY PERSONNEL-MANAGER AT 12.23.40 ON 31 MAR 1980  
STATUS ADA  
PROTECTION: NONE

THIS MEMBER IS DIRECTLY REFERRED TO 0 TIMES  
THIS MEMBER CONTAINS 7 DIRECT REFERENCES

ADABAS DATABASE EMPLOYEE-DB

DEVICE 3340

COUPLING OF FILES

HDATA TO  
MDATA  
BY EMPLOYEE-CODE

CIPHERING OF FILES

MDATA  
BY CIPHER-CODE

CONTAINS FILES

1 MDATA  
2 HDATA

X500

00165 KEEP WHAT CONSTITUTES EMPLOYEE-DB.  
DM01541I 20 ENTRIES ADDED TO KEPT-DATA LIST

Produce a list of contained members

00166 LIST KEPT-DATA ALPHABETICALLY.

LIST OF SELECTED MEMBERS

MEMBER NAME	TYPE	USAGE	CONDITION	AC	ALT	REM	OWNER
CIPHER-CODE							PERSONNEL
EMPLOYEE-CODE	ITEM	16	SCE ENC	YES	YES		PERSONNEL
EMPLOYEE-DEPARTMENT	ITEM	11	SCE ENC	YES	YES		PERSONNEL
EMPLOYEE-IDENTIFICATION	GROUP	4	SCE ENC	YES	YES	YES	
EMPLOYEE-JOB-CODE	ITEM	2	SCE ENC	YES	YES	YES	
EMPLOYEE-NAME	ITEM	4	SCE ENC	YES	YES		PERSONNEL
EMPLOYEE-SALARY	ITEM	4	SCE ENC	YES	YES		PERSONNEL
EMPLOYEE-STREET	ITEM	2	SCE ENC	YES	YES	YES	
EMPLOYEE-TELEPHONE	ITEM	2	SCE ENC	YES	YES	YES	
EMPLOYEE-TOWN	ITEM	2	SCE ENC	YES	YES	YES	
EMPLOYING-COMPANY	ITEM	2	SCE ENC	YES	YES	YES	
EXPERIENCE	GROUP	4	SCE ENC	YES	YES	YES	
EXPERIENCE-CODE	ITEM	2	SCE ENC	YES	YES	YES	
EXPERIENCE-YRS	ITEM	2	SCE ENC	YES	YES	YES	
HDATA	ADABAS FILE	3	SCE ENC	YES	YES	YES	
JOB-COUNTER	ITEM	3	SCE ENC	YES	YES	YES	
JOB-HISTORY	GROUP	2	SCE ENC	YES	YES	YES	
MDATA	ADABAS FILE	5	SCE ENC	YES	YES	YES	
SOCIAL-SECURITY-CODE	ITEM	5	SCE ENC	YES	YES		PERSONNEL
TAX-CODE	ITEM	4	SCE ENC	YES	YES		PERSONNEL

LIST CONTAINS  
14 ITEMS  
3 GROUPS  
2 ADABAS FILES  
19 MEMBERS IN TOTAL  
1 MEMBER INACCESSIBLE TO THIS USER

X500

00167 BULK PRINT KEPT-DATA ALPHABETICALLY.

... and a print of contained members.

```
PRINT OF EMPLOYEE-CODE
00100 ITEM
00200 ENTERED-AS ALPHANUMERIC 4
00300 HELD-AS NUMERIC NULL-SUPPRESSED 4
00400 CONTENTS RANGE 1000 TO 8000
00500 REPORTED-AS PICTURE '9999'
00600 ALIAS LOW-LEVEL 'EMPCODE'
00700 CATALOG 'EMPLOYEE', 'CODE'
00800 DESCRIPTION
00900 'STANDARD EMPLOYEE CODE'
01000 NOTE
01100 'INPUT FORM'
01200 'EMPLOYEE-TRANSACTIONS-FORM'
END OF PRINT

PRINT OF EMPLOYEE-DEPARTMENT
00100 ITEM
00200 HELD-AS NUMERIC-CHARACTER NULL-SUPPRESSED 3
00300 CONTENTS RANGE 100 TO 150
00400 ELSE IS 180
00500 ELSE RANGE 200 TO 900
00600 REPORTED-AS PICTURE '999'
00700 ENTERED-AS NUMERIC-CHARACTER 3
00800 ALIAS LOW-LEVEL 'EMPDEPT'
00900 CATALOG 'EMPLOYEE', 'CODE'
01000 DESCRIPTION
01100 'EMPLOYEE DEPARTMENT CODE'
END OF PRINT

PRINT OF EMPLOYEE-IDENTIFICATION
00100 GROUP
00150 HELD-AS
00200 CONTAINS EMPLOYEE-NAME,
00300 EMPLOYEE-STREET,
00400 EMPLOYEE-TOWN,
00500 EMPLOYEE-TELEPHONE
07000 ALIAS LOW-LEVEL 'EMPIDEN'
09000 DESCRIPTION
09100 'NAME, ADDRESS AND TELEPHONE NUMBER OF AN EMPLOYEE'
10000 NOTE
10100 'ACCURACY'
10200 'NAME CHECKED AGAINST BIRTH CERTIFICATE'
10300 'ADDRESS AND TELEPHONE NUMBER NOT CHECKED'
END OF PRINT

PRINT OF EMPLOYEE-JOB-CODE
00100 ITEM
00200 REPORTED-AS PICTURE 'AAA'
00300 HELD-AS NUMERIC NULL-SUPPRESSED 3 CONTENTS
00400 RANGE 100 TO 109 CONDITION-NAME TRAINEE-TECH-OFFICER
00500 ELSE RANGE 110 TO 119 CONDITION-NAME JNR-TECH-OFFICER
00600 ELSE RANGE 120 TO 149 CONDITION-NAME SNR-TECH-OFFICER
00700 ALIAS LOW-LEVEL 'EMPJOB'
00800 DESCRIPTION
00900 'EMPLOYEE JOB TITLE CODE'
END OF PRINT

PRINT OF EMPLOYEE-NAME
00100 ITEM
00200 HELD-AS CHARACTER 30
00300 REPORTED-AS PICTURE 'X(10)B(5)X(10)B(3)X(10)'
00400 ENTERED-AS CHARACTER 30
07000 ALIAS LOW-LEVEL 'EMPNAME'
08000 CATALOG 'EMPLOYEE', 'DESCRIPTION'
09000 DESCRIPTION
09100 'EMPLOYEE SURNAME, FIRST NAME AND MIDDLE NAME'
END OF PRINT

PRINT OF EMPLOYEE-SALARY
00100 ITEM
00200 HELD-AS NUMERIC NULL-SUPPRESSED 5
00300 CONTENTS RANGE 10000 TO 50000
00400 REPORTED-AS PICTURE '£B99,999'
00500 ENTERED-AS NUMERIC 5
00600 ALIAS LOW-LEVEL 'EMPSAL'
00700 CATALOG 'SALARY', 'NUMERIC'
00800 DESCRIPTION
00900 'YEARLY SALARY. INCLUDES GEOGRAPHICAL ALLOWANCES'
END OF PRINT

PRINT OF EMPLOYEE-STREET
00100 ITEM
00200 HELD-AS CHARACTER 40
00300 REPORTED-AS PICTURE 'X(40)'
00400 ENTERED-AS CHARACTER 40
07000 ALIAS LOW-LEVEL 'EMPSTR'
```

X500

08000 CATALOG 'EMPLOYEE', 'DESCRIPTION'  
09000 DESCRIPTION  
09100 'EMPLOYEE STREET NAME INCLUDING ANY APARTMENT NUMBER'  
END OF PRINT

PRINT OF EMPLOYEE-TELEPHONE  
ITEM  
00100 HELD-AS NUMERIC NULL-SUPPRESSED 10  
00200 REPORTED-AS PICTURE '9998899989999'  
00300 ENTERED-AS NUMERIC-CHARACTER 10  
00400 ALIAS LOW-LEVEL 'EMPTLNO'  
00500 CATALOG 'EMPLOYEE', 'DESCRIPTION'  
00600 DESCRIPTION  
00700 'EMPLOYEE TELEPHONE NUMBER INCLUDING CODE'  
00800 END OF PRINT

PRINT OF EMPLOYEE-TOWN  
ITEM  
00100 HELD-AS CHARACTER 20  
00200 ENTERED-AS CHARACTER 20  
00300 REPORTED-AS PICTURE 'X(20)'  
00400 ALIAS LOW-LEVEL 'EMPTOWN'  
07000 CATALOG 'EMPLOYEE', 'DESCRIPTION'  
08000 DESCRIPTION  
09000 'EMPLOYEE HOME TOWN NAME AND POST CODE'  
09100 END OF PRINT

PRINT OF EMPLOYING-COMPANY  
ITEM  
00100 ENTERED-AS CHARACTER 30  
00200 HELD-AS CHARACTER 30  
00300 REPORTED-AS PICTURE 'X(30)'  
00400 ALIAS LOW-LEVEL 'EMPEMP'  
07000 CATALOG 'EMPLOYEE', 'DESCRIPTION'  
08000 DESCRIPTION  
09000 'NAME OF OUTSIDE COMPANY OR INTERNAL DEPARTMENT OF THIS ORGANISATION'  
09100 END OF PRINT

PRINT OF EXPERIENCE  
GROUP  
00100 HELD-AS  
00150 CONTAINS EMPLOYING-COMPANY,  
00200 EXPERIENCE-CODE,  
00300 EXPERIENCE-YRS  
00400 ALIAS LOW-LEVEL 'EMPEXP'  
07000 DESCRIPTION  
09000 'EXPERIENCE GAINED (INCLUDING EXPERIENCE GAINED WITHIN THIS ORGANISATION)'  
09100 NOTE  
10000 'ACCURACY'  
10100 ' REFERENCES OBTAINED FROM LAST TWO'  
10200 ' EMPLOYING ORGANISATIONS'  
10300 END OF PRINT

PRINT OF EXPERIENCE-CODE  
ITEM  
00100 HELD-AS NUMERIC NULL-SUPPRESSED 2  
00200 CONTENTS RANGE 01 TO 99  
00300 ENTERED-AS NUMERIC-CHARACTER 2  
00400 REPORTED-AS PICTURE '99'  
00500 ALIAS LOW-LEVEL 'EMPOST'  
00600 CATALOG 'EMPLOYEE', 'CODE'  
00700 DESCRIPTION  
00800 'EXPERIENCE CODE TAKEN FROM STANDARD CODING BOOK'  
00900 END OF PRINT

PRINT OF EXPERIENCE-YRS  
ITEM  
00100 HELD-AS NUMERIC NULL-SUPPRESSED 2  
00200 CONTENTS RANGE 01 TO 10  
00300 ELSE RANGE 01 TO 15  
00400 IF EMPLOYEE-DEPARTMENT EQ 180  
00500 ENTERED-AS NUMERIC-CHARACTER 2  
00600 REPORTED-AS PICTURE '99'  
00700 ALIAS LOW-LEVEL 'EMPYRS'  
00800 CATALOG 'EMPLOYEE', 'NUMERIC'  
00900 DESCRIPTION  
01000 'NUMBER OF YEARS EXPERIENCE'  
01100 END OF PRINT

PRINT OF HDATA  
FILE ADABAS  
00100 CONTAINS EMPLOYEE-CODE,  
00200 (1) EMPLOYEE-DEPARTMENT,  
00300 JOB-HISTORY,  
00400 (3) EXPERIENCE  
00500 DESCRIPTORS EMPLOYEE-CODE, EMPLOYEE-DEPARTMENT UNIQUE  
00600 SUB-DESCRIPTORS S1 IS EMPLOYEE-CODE BYTES 1 TO 2  
00700 FIELD-NAMES  
00800

X500

00900 EC IS EMPLOYEE-CODE,  
01000 EX IS EXPERIENCE,  
01100 ED IS EMPLOYEE-DEPARTMENT,  
01200 ER IS EXPERIENCE-YRS,  
01300 JT IS JOB-HISTORY,  
01400 JR IS JOB-COUNTER,  
01500 EJ IS EMPLOYEE-JOB-CODE,  
01600 EY IS EMPLOYING-COMPANY,  
01700 EO IS EXPERIENCE-CODE  
01800 PHONETIC-NAME EN IS EMPLOYEE-CODE  
01900 DESCRIPTION  
02000 'ADABAS EMPLOYEE-HISTORY FILE'  
02100 NOTE  
02200 'EMPLOYEE-NUMBER IS PHONETIC WITH EMPLOYEE-CODE'  
END OF PRINT

PRINT OF JOB-COUNTER  
00100 ITEM  
00200 HELD-AS NUMERIC NULL-SUPPRESSED 1  
00300 CONTENTS IS 3  
END OF PRINT

PRINT OF JOB-HISTORY  
00100 GROUP  
00200 CONTAINS JOB-COUNTER,  
00300 (JOB-COUNTER) EMPLOYEE-JOB-CODE  
END OF PRINT

PRINT OF MDATA  
00100 FILE ADABAS  
00200 CONTAINS EMPLOYEE-CODE,  
00300 EMPLOYEE-DEPARTMENT,  
00400 EMPLOYEE-SALARY,  
00500 TAX-CODE,  
00600 SOCIAL-SECURITY-CODE,  
00700 EMPLOYEE-IDENTIFICATION  
00800 DESCRIPTORS EMPLOYEE-CODE, EMPLOYEE-DEPARTMENT  
00900 SUB-DESCRIPTORS S2 IS EMPLOYEE-NAME BYTES 1 TO 5  
01000 FIELD-NAMES  
01100 EC IS EMPLOYEE-CODE,  
01200 ED IS EMPLOYEE-DEPARTMENT,  
01300 EA IS EMPLOYEE-NAME,  
01400 SS IS SOCIAL-SECURITY-CODE,  
01500 EI IS EMPLOYEE-IDENTIFICATION,  
01600 ES IS EMPLOYEE-SALARY,  
01700 TX IS TAX-CODE,  
01800 ET IS EMPLOYEE-STREET,  
01900 EW IS EMPLOYEE-TOWN,  
02000 EE IS EMPLOYEE-TELEPHONE  
02100 PHONETIC-NAMES EN IS EMPLOYEE-CODE  
09000 DESCRIPTION  
09100 'ADABAS EMPLOYEE-MASTER FILE'  
10000 NOTE  
10100 'EMPLOYEE-NUMBER IS PHONETIC WITH EMPLOYEE-CODE'  
END OF PRINT

PRINT OF SOCIAL-SECURITY-CODE

00100 ITEM  
00200 ENTERED-AS 1 ALPHANUMERIC 15  
00300 ENTERED-AS 2 CHARACTER 15  
00400 HELD-AS ALPHANUMERIC 15  
00500 REPORTED-AS PICTURE 'XXXBX(5)B999BXXXX'  
07000 ALIAS LOW-LEVEL 'EMPSSC'  
08000 CATALOG 'SALARY', 'CODE'  
09000 DESCRIPTION  
09100 'CURRENT EMPLOYEE SOCIAL SECURITY CODE'  
END OF PRINT

PRINT OF TAX-CODE  
00100 ITEM  
00200 HELD-AS NUMERIC NULL-SUPPRESSED 4  
00300 CONTENTS IS 538  
00400 ELSE IS 670  
00500 ELSE RANGE 1000 TO 6000  
00600 ENTERED-AS NUMERIC-CHARACTER 4  
00700 REPORTED-AS PICTURE '9999'  
00800 ALIAS LOW-LEVEL 'EMPTAX'  
00900 CATALOG 'SALARY', 'CODE'  
01000 DESCRIPTION  
01100 'EMPLOYEE TAX CODE SENT BY TAX OFFICE'  
01200 NOTE  
01300 'ACCURACY'  
01400 ' TAX CODE IS ONE MONTH OUT OF DATE'  
END OF PRINT

X500

19 MEMBERS PROCESSED BY BULK PRINT  
1 MEMBERS INACCESSIBLE TO THIS USER

00168 WHICH ADABAS-FILES CONSTITUTE EMPLOYEE-DB.

*Interrogation of ADABAS members.*

THE FOLLOWING ADABAS FILES SATISFY THE GIVEN CRITERIA

ADABAS FILE	MDATA
ADABAS FILE	HDATA

2 MEMBERS IN TOTAL

00169 REPORT MDATA.

REPORT OF ADABAS FILE MDATA

EDITION 4 ENCODED BY MASTER AT 15.45.42 ON 25 NOV 1981  
STATUS ADA  
PROTECTION: NONE

DESCRIPTION  
ADABAS EMPLOYEE-MASTER FILE

NOTE  
EMPLOYEE-NUMBER IS PHONETIC WITH EMPLOYEE-CODE

THIS MEMBER IS DIRECTLY REFERRED TO 5 TIMES  
THIS MEMBER CONTAINS 20 DIRECT REFERENCES

ADABAS FILE MDATA

TYPE IS ADABAS

DESCRIPTORS  
EMPLOYEE-CODE  
EMPLOYEE-DEPARTMENT

SUB-DESCRIPTORS  
S2 EMPLOYEE-NAME BYTES 1 TO 5

PHONETIC ITEMS  
EN EMPLOYEE-CODE

FIELD-NAMES  
EC EMPLOYEE-CODE  
ED EMPLOYEE-DEPARTMENT  
EA EMPLOYEE-NAME  
SS SOCIAL-SECURITY-CODE  
EI EMPLOYEE-IDENTIFICATION  
ES EMPLOYEE-SALARY  
TX TAX-CODE  
ET EMPLOYEE-STREET  
EW EMPLOYEE-TOWN  
EE EMPLOYEE-TELEPHONE

CONTAINS  
ITEM EMPLOYEE-CODE  
ITEM EMPLOYEE-DEPARTMENT  
ITEM EMPLOYEE-SALARY  
ITEM TAX-CODE  
ITEM SOCIAL-SECURITY-CODE  
GROUP EMPLOYEE-IDENTIFICATION

X500

00170 WHICH FILES USE EMPLOYEE-CODE VIA DESCRIPTORS.

Further interrogation.

THE FOLLOWING SELECTED MEMBERS SATISFY THE GIVEN CRITERIA

ADABAS FILE	HDATA
ADABAS FILE	MDATA

2 MEMBERS IN TOTAL

00171 WHICH PROGRAMS USE MDATA.

THE FOLLOWING PROGRAMS SATISFY THE GIVEN CRITERIA

PROGRAM	P9D01
---------	-------

1 MEMBER IN TOTAL

00172 REPORT P9D01.

REPORT OF PROGRAM P9D01

EDITION 3 ENCODED BY MASTER AT 16.27.31 ON 18 JAN 1982  
STATUS ADA  
PROTECTION: NONE

THIS MEMBER IS DIRECTLY REFERRED TO 0 TIMES  
THIS MEMBER CONTAINS 10 DIRECT REFERENCES

PROGRAM P9D01

LANGUAGE COBOL

PARAMETERS NO DATA

INPUTS NO DATA

OUTPUTS NO DATA

UPDATES NO DATA

PROCESSES ADABAS

ACCESS EMPFIN  
ADABAS FILE MDATA  
USING/GIVING  
ITEM EMPLOYEE-CODE  
THRU  
ITEM SOCIAL-SECURITY-CODE

ACCESS EMPLOC  
ADABAS FILE MDATA  
USING/GIVING  
ITEM EMPLOYEE-CODE  
ITEM EMPLOYEE-DEPARTMENT  
GROUP EMPLOYEE-IDENTIFICATION

ACCESS EMPDAT  
ADABAS FILE HDATA  
USING/GIVING  
GROUP EXPERIENCE  
OCCURRENCES 1 THRU 3  
ITEM EMPLOYEE-DEPARTMENT

CALLS NO MEMBERS

CONTAINS NO MEMBERS

X500

00173 PRODUCE ADABAS LOADER-DEFINITIONS FROM MDATA, HDATA  
00174 NOGEN PRINT USING HELD-AS.

Produce ADABAS LOADER-DEFINITIONS.

DM02614I	01, EC, 4, U, DE, NU	EMPLOYEE-CODE	1
	A CIPHER CONTROL CARD HAS BEEN PRODUCED		
	01, ED, 3, U, DE, NU	EMPLOYEE-DEPARTMENT	2
	01, ES, 5, U, NU	EMPLOYEE-SALARY	3
	01, TX, 4, U, NU	TAX-CODE	4
	01, SS, 15, A, FI	SOCIAL-SECURITY-CODE	5
	01, EI	EMPLOYEE-IDENTIFICATION	6
	02, EA, 30, A, FI	EMPLOYEE-NAME	7
	02, ET, 40, A, FI	EMPLOYEE-STREET	8
	02, EW, 20, A, FI	EMPLOYEE-TOWN	9
	02, EE, 10, U, NU	EMPLOYEE-TELEPHONE	10
	S2=EA(1, 5)		11
	EN=PHON(EC)		12

DM02217I MDATA SUCCESSFULLY GENERATED

	01, EC, 4, U, DE, NU	EMPLOYEE-CODE	1
	01, ED, 3, U, DE, UQ, NU, MU(1)	EMPLOYEE-DEPARTMENT	2
	01, JT	JOB-HISTORY	3
	02, JR, 1, U, NU	JOB-COUNTER	4
	02, EJ, 3, U, NU, MU	EMPLOYEE-JOB-CODE	5
	01, EX, PE(3)	EXPERIENCE	6
	02, EY, 30, A, FI	EMPLOYING-COMPANY	7
	02, EO, 2, U, NU	EXPERIENCE-CODE	8
	02, ER, 2, U, NU	EXPERIENCE-YRS	9
	S1=EC(1, 2)		10
	EN=PHON(EC)		11

DM02217I HDATA SUCCESSFULLY GENERATED

00175 PRODUCE ADABAS BUFFERS FROM EMPDAT USED-IN P9D01  
00176 NOGEN PRINT.

Produce ADABAS BUFFERS.

DM02641W NO OCCURRENCE INDEX SPECIFIED FOR ITEM EMPLOYEE-DEPARTMENT  
DM02653W OCCURRENCE INDEX GENERATED FOR EMPLOYEE-DEPARTMENT

01	EMPDAT-FORMAT-BUFFER.	
02	EMPDAT-EXPERIENCE-FB	PIC X(6) VALUE "EX1-3,".
02	EMPDAT-EMPLOYEE-DEPARTMENT-FB	PIC X(4) VALUE "ED1,".

DM02217I EMPDAT SUCCESSFULLY GENERATED

01	EMPDAT-RECORD-BUFFER.	
02	EMPDAT-EXPERIENCE-RB	OCCURS 3 TIMES.
04	EMPDAT-EMPLOYING-COMPANY-RB	PIC X(30).
04	EMPDAT-EXPERIENCE-CODE-RB	PIC 99.
04	EMPDAT-EXPERIENCE-YRS-RB	PIC 99.
02	EMPDAT-EMPLOYEE-DEPARTMENT-RB	PIC 999.

DM02217I EMPDAT SUCCESSFULLY GENERATED



CHAPTER 6  
DATAMANAGER/IMS DEMONSTRATION (X600)



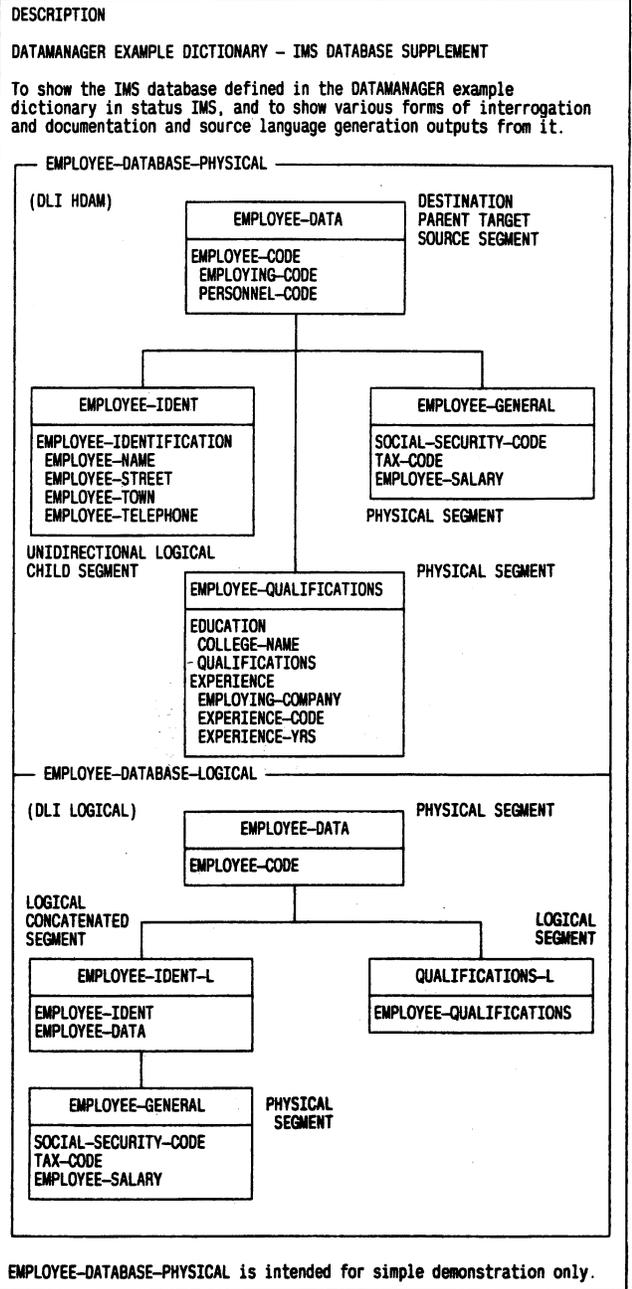
**COMMANDS DEMONSTRATED**

AUTHORITY "ANALYST".  
 STATUS "IMS".  
 LIST IMS-DATABASES.  
 REPORT EMPLOYEE-DATABASE-PHYSICAL.  
 MODIFY EMPLOYEE-IDENT.  
 170 CONCATENATED-KEY-NAME EMP-KEY

WHICH MEMBERS CONSTITUTE EMPLOYEE-IDENT  
 VIA CONCATENATED-KEY-NAME.  
 KEEP WHAT CONSTITUTES EMPLOYEE-DATABASE-PHYSICAL.  
 LIST KEPT-DATA ALPHABETICALLY.  
 BULK PRINT KEPT-DATA ALPHABETICALLY.  
 WHICH SEGMENTS CONSTITUTE EMPLOYEE-DATABASE-PHYSICAL.  
 REPORT EMPLOYEE-GENERAL.  
 WHICH PCBs USE EMPLOYEE-DATABASE-PHYSICAL.  
 MODIFY PCB-PERSONNEL.  
 100 PCB STRUCTURE BY GET REPLACE

MODIFY PCB-DATA.  
 200 BY UPDATE

REPORT PCB-PAYROLL.  
 REPORT EMPLOYEE-DATABASE-LOGICAL.  
 KEEP WHAT CONSTITUTES EMPLOYEE-DATABASE-LOGICAL.  
 LIST KEPT-DATA ALPHABETICALLY.  
 WHICH SEGMENTS CONSTITUTE EMPLOYEE-DATABASE-LOGICAL.  
 REPORT EMPLOYEE-IDENT-L.  
 WHICH PCBs USE EMPLOYEE-DATABASE-LOGICAL.  
 PRODUCE COBOL USED-IN PCB-PERSONNEL FROM  
 EMPLOYEE-IDENT, EMPLOYEE-GENERAL NOGEN  
 PRINT GIVING DESCRIPTIONS.  
 PRODUCE IMS DBDGEN SEARCH-FIELDS FROM  
 EMPLOYEE-DATABASE-PHYSICAL AS EDP NOGEN  
 PRINT WITH-ALIAS LOW-LEVEL.  
 PRODUCE IMS DBDGEN ALL-FIELDS FROM  
 EMPLOYEE-DATABASE-INDEX AS EDI NOGEN  
 PRINT WITH-ALIAS LOW-LEVEL.  
 PRODUCE IMS PSBGEN FROM PAYROLL NOGEN  
 PRINT WITH-ALIAS LOW-LEVEL.



00179 STATUS "IMS".  
 DMO0096I NON-FROZEN STATUS IMS RECOGNISED

00180 AUTHORITY "ANALYST".  
 DMO1060I AUTHORITY RECOGNISED

00181 LIST IMS-DATABASES.

LIST OF DL1 DATABASES

MEMBER NAME	TYPE	USAGE	CONDITION	AC	ALT	REM	OWNER
EMPLOYEE-DATABASE-INDEX	DL1 INDEX DB	0	SCE ENC YES YES YES				
EMPLOYEE-DATABASE-LOGICAL	DL1 LOGCL DB	1	SCE ENC YES YES YES				
EMPLOYEE-DATABASE-PHYSICAL	DL1 HDAM DB	2	SCE ENC YES YES YES				

LIST CONTAINS 3 DL1 DATABASES

REPORT OF DL1 HDAM DATABASE EMPLOYEE-DATABASE-PHYSICAL

EDITION 9 ENCODED BY ANALYST AT 15.39.24 ON 06 NOV 1981  
 STATUS IMS  
 PROTECTION: NONE

ALIAS  
 LOW-LEVEL EMPDBS

CATALOGUED AS  
 PHYSICAL DATABASE

DESCRIPTION  
 THIS PHYSICAL DATABASE DEFINES EMPLOYEE DATA.

THIS MEMBER IS DIRECTLY REFERRED TO 2 TIMES  
 THIS MEMBER CONTAINS 9 DIRECT REFERENCES

DL1 HDAM DATABASE EMPLOYEE-DATABASE-PHYSICAL

ACCESS

SUPPORTING ACCESS METHOD FOR DATABASE VSAM

RANDOMISING-MODULE GENLRMD

ANCHOR-POINTS 46

RELATIVE-BLOCK-MAXIMUM 60976

DATA SET GROUP

PRIME DDNAME EMPDD

DEVICE 3350

BLOCK SIZE 1024

SCAN CYLINDER LIMIT 3

CONTAINS PHYSICAL SEGMENTS

EMPLOYEE-DATA  
 EMPLOYEE-IDENT PARENT EMPLOYEE-DATA  
 EMPLOYEE-QUALIFICATIONS PARENT EMPLOYEE-DATA  
 EMPLOYEE-GENERAL PARENT EMPLOYEE-DATA

	00183	MODIFY EMPLOYEE-IDENT.
	00184	170 CONCATENATED-KEY-NAME EMP-KEY
	00185	
DMO1180I		ALTERATION HAS CREATED NEW SOURCE RECORD
DMO1296I		ENCODING OF EMPLOYEE-IDENT
	00100	SEGMENT PHYSICAL
	00150	RELATED-AS UNIDIRECTIONAL-CHILD-SEGMENT
	00160	TO EMPLOYEE-DATA
	00170	CONCATENATED-KEY-NAME EMP-KEY
DMO1826I		CONCATENATED-KEY EMP-KEY CREATED AS AN INTERNAL MEMBER
	00200	ATTRIBUTES
DMO0126W		DELETE RULE ENTRY MISSING OR INCOMPLETE
DMO1902W		LOGICAL RULE ASSUMED
DMO0126W		INSERT RULE ENTRY MISSING OR INCOMPLETE
DMO1902W		LOGICAL RULE ASSUMED
DMO0126W		REPLACE RULE ENTRY MISSING OR INCOMPLETE
DMO1902W		VIRTUAL RULE ASSUMED
	00300	CONTAINS EMPLOYEE-IDENTIFICATION
	00400	SEQUENCE-KEY EMPLOYEE-NAME UNIQUELY
	00500	POINTERS SINGLE
	00600	GENERATES EMPLOYEE-NAME IN EMPLOYEE-IDENTIFICATION
	07000	ALIAS LOW-LEVEL 'EMPENT'
	08000	CATALOG 'PHYSICAL SEGMENT'
	09000	DESCRIPTION
	09100	'THIS PHYSICAL SEGMENT CONTAINS EMPLOYEE IDENTIFICATION.'
DMO1280I		EMPLOYEE-IDENT SUCCESSFULLY ENCODED
	00186	WHICH MEMBERS CONSTITUTE EMPLOYEE-IDENT
	00187	VIA CONCATENATED-KEY-NAME.

*Let us add a new keyword to the  
 EMPLOYEE-IDENT definition, if not  
 already present in the definition.*

*This new keyword can be used when  
 interrogating the dictionary using  
 the WHAT and WHICH commands.*

THE FOLLOWING SELECTED MEMBERS SATISFY THE GIVEN CRITERIA

CONCATENATED-KEY	EMP-KEY
------------------	---------

1 MEMBER IN TOTAL

X600

00188 KEEP WHAT CONSTITUTES EMPLOYEE-DATABASE-PHYSICAL.  
DM015411 28 ENTRIES ADDED TO KEPT-DATA LIST

Produce a list of contained members

00189 LIST KEPT-DATA ALPHABETICALLY.

LIST OF SELECTED MEMBERS  
MEMBER NAME

MEMBER NAME	TYPE	USAGE	CONDITION	AC	ALT	REM	OWNER
CK001	SYS REL FLD	2	DMR	YES	YES	YES	
COLLEGE-NAME	ITEM	2	SCE	ENC	YES	YES	YES
EDUCATION	GROUP	2	SCE	ENC	YES	YES	YES
EMP-KEY	CONC-KEY	1	DMR	YES	YES	YES	
EMPDD	DL1 DATASET	1	DMR	YES	YES	YES	
EMPLOYEE-CODE	GROUP	5	SCE	ENC	YES	YES	PERSONNEL
EMPLOYEE-DATA	DST/SRC/TARG	13	SCE	ENC	YES	YES	YES
EMPLOYEE-DEPARTMENT	ITEM	3	SCE	ENC	YES	YES	PERSONNEL
EMPLOYEE-GENERAL	PHYSICAL SEG	7	SCE	ENC	YES	YES	YES
EMPLOYEE-IDENT	UNID L.CHILD	4	SCE	ENC	YES	YES	YES
EMPLOYEE-IDENTIFICATION	GROUP	3	SCE	ENC	YES	YES	YES
EMPLOYEE-NAME	ITEM	5	SCE	ENC	YES	YES	PERSONNEL
EMPLOYEE-QUALIFICATIONS	PHYSICAL SEG	5	SCE	ENC	YES	YES	YES
EMPLOYEE-SALARY	ITEM	4	SCE	ENC	YES	YES	PERSONNEL
EMPLOYEE-STREET	ITEM	1	SCE	ENC	YES	YES	YES
EMPLOYEE-TELEPHONE	ITEM	1	SCE	ENC	YES	YES	YES
EMPLOYEE-TOWN	ITEM	2	SCE	ENC	YES	YES	YES
EMPLOYING-CODE	ITEM	3	SCE	ENC	YES	YES	YES
EMPLOYING-COMPANY	ITEM	2	SCE	ENC	YES	YES	YES
EXPERIENCE	GROUP	3	SCE	ENC	YES	YES	YES
EXPERIENCE-CODE	ITEM	1	SCE	ENC	YES	YES	YES
EXPERIENCE-YRS	ITEM	1	SCE	ENC	YES	YES	YES
GENLRMD	MODULE	1	SCE	ENC	YES	YES	YES
PERSONNEL-CODE	ITEM	3	SCE	ENC	YES	YES	YES
QUALIFICATIONS	ITEM	1	SCE	ENC	YES	YES	YES
SOCIAL-SECURITY-CODE	ITEM	5	SCE	ENC	YES	YES	PERSONNEL
SX001	SYS REL FLD	3	DMR	YES	YES	YES	
TAX-CODE	ITEM	3	SCE	ENC	YES	YES	PERSONNEL

LIST CONTAINS

- 15 ITEMS
- 4 GROUPS
- 2 SYSTEM RELATED FIELDS
- 1 CONCATENATED-KEY
- 4 SEGMENTS
- 1 DL1 DATASET
- 1 MODULE
- 28 MEMBERS IN TOTAL

X600

00190 BULK PRINT KEPT-DATA ALPHABETICALLY.

... and a print of contained members.

00100 PRINT OF COLLEGE-NAME  
00200 ITEM  
00300 HELD-AS CHARACTER 30  
00400 REPORTED-AS PICTURE "X(30)"  
00500 ENTERED-AS CHARACTER 30  
07000 ALIAS LOW-LEVEL 'EMPCOL'  
08000 CATALOG 'EMPLOYEE', 'DESCRIPTION'  
09000 DESCRIPTION  
09100 'NAME OF COLLEGE/FACULTY'  
END OF PRINT

00100 PRINT OF EDUCATION  
00150 GROUP  
00200 HELD-AS  
00300 CONTAINS COLLEGE-NAME,  
00400 QUALIFICATIONS  
07000 ALIAS LOW-LEVEL 'EMPEDU'  
09000 DESCRIPTION  
09100 'EDUCATION RECEIVED BY EMPLOYEE INCLUDING PROFESSIONAL TRAINING'  
10000 NOTE  
10100 'ACCURACY'  
10200 ' ALL COLLEGE CERTIFICATES CHECKED'  
10300 ' AND REFERENCES OBTAINED'  
END OF PRINT

00100 PRINT OF EMPLOYEE-CODE  
00200 GROUP  
00300 HELD-AS  
00400 CONTAINS EMPLOYING-CODE,  
00500 PERSONNEL-CODE  
00600 ALIAS LOW-LEVEL 'EMPCODE'  
00700 CATALOG 'EMPLOYEE', 'CODE'  
00800 DESCRIPTION  
'STANDARD EMPLOYEE CODE'  
END OF PRINT

00100 PRINT OF EMPLOYEE-DATA  
00200 SEGMENT PHYSICAL  
00300 RELATED-AS DESTINATION-PARENT-SEGMENT  
00400 TARGET-SEGMENT SOURCE-SEGMENT  
00500 CONCATENATED-KEY-FIELD PERSONNEL-CODE AS CK001  
00600 UNIQUE-KEY-FIELD SX001  
00700 ATTRIBUTES  
00800 CONTAINS EMPLOYEE-CODE  
00900 SEQUENCE-KEY EMPLOYEE-CODE  
01000 POINTERS SINGLE  
01100 ALIAS LOW-LEVEL 'EMPLDATA'  
01200 CATALOG 'PHYSICAL SEGMENT'  
01300 DESCRIPTION  
'THIS PHYSICAL SEGMENT IS THE ROOT SEGMENT OF EMPDBS.'  
END OF PRINT

00100 PRINT OF EMPLOYEE-DEPARTMENT  
00200 ITEM  
00300 HELD-AS NUMERIC-CHARACTER 3 CONTENTS  
00400 RANGE 100 TO 150  
00500 ELSE IS 180  
00600 ELSE RANGE 200 TO 900  
00700 REPORTED-AS PICTURE '999'  
00800 ENTERED-AS NUMERIC-CHARACTER 3  
00900 ALIAS LOW-LEVEL 'EMPDEPT'  
01000 CATALOG 'EMPLOYEE', 'CODE'  
01100 DESCRIPTION  
01200 'EMPLOYEE DEPARTMENT CODE'  
01300 END OF PRINT

00100 PRINT OF EMPLOYEE-GENERAL  
00200 SEGMENT PHYSICAL  
00300 ATTRIBUTES  
00400 CONTAINS SOCIAL-SECURITY-CODE,  
00500 TAX-CODE,  
00600 EMPLOYEE-SALARY  
00700 SEQUENCE-KEY SOCIAL-SECURITY-CODE UNIQUELY  
00800 POINTERS SINGLE  
00900 GENERATES EMPLOYEE-SALARY  
01000 ALIAS LOW-LEVEL 'EMPRAL'  
01100 CATALOG 'PHYSICAL SEGMENT'  
01200 DESCRIPTION  
01300 'THIS PHYSICAL SEGMENT CONTAINS EMPLOYEE GENERAL DATA.'  
END OF PRINT

00100 PRINT OF EMPLOYEE-IDENT  
00150 SEGMENT PHYSICAL  
00160 RELATED-AS UNIDIRECTIONAL-CHILD-SEGMENT  
00170 TO EMPLOYEE-DATA  
CONCATENATED-KEY-NAME EMP-KEY

X600

00200 ATTRIBUTES  
00300 CONTAINS EMPLOYEE-IDENTIFICATION  
00400 SEQUENCE-KEY EMPLOYEE-NAME UNIQUELY  
00500 POINTERS SINGLE  
00600 GENERATES EMPLOYEE-NAME IN EMPLOYEE-IDENTIFICATION  
07000 ALIAS LOW-LEVEL 'EMPENT'  
08000 CATALOG 'PHYSICAL SEGMENT'  
09000 DESCRIPTION  
09100 'THIS PHYSICAL SEGMENT CONTAINS EMPLOYEE IDENTIFICATION.'  
END OF PRINT

PRINT OF EMPLOYEE-IDENTIFICATION  
00100 GROUP  
00150 HELD-AS  
00200 CONTAINS EMPLOYEE-NAME,  
00300 EMPLOYEE-STREET,  
00400 EMPLOYEE-TOWN,  
00500 EMPLOYEE-TELEPHONE  
07000 ALIAS LOW-LEVEL 'EMPIDEN'  
09000 DESCRIPTION  
09100 'NAME, ADDRESS AND TELEPHONE NUMBER OF AN EMPLOYEE'  
10000 NOTE  
10100 'ACCURACY'  
10200 'NAME CHECKED AGAINST BIRTH CERTIFICATE'  
10300 'ADDRESS AND TELEPHONE NUMBER NOT CHECKED'  
END OF PRINT

PRINT OF EMPLOYEE-NAME  
00100 ITEM  
00200 HELD-AS CHARACTER 30  
00300 REPORTED-AS PICTURE 'X(10)B(5)X(10)B(3)X(10)'  
00400 ENTERED-AS CHARACTER 30  
00500 ALIAS LOW-LEVEL 'EMPNAME',IMS 'IMS','NONSPEC'  
00600 CATALOG 'EMPLOYEE','DESCRIPTION'  
00700 DESCRIPTION  
00800 'EMPLOYEE SURNAME, FIRST NAME AND MIDDLE NAME'  
END OF PRINT

PRINT OF EMPLOYEE-QUALIFICATIONS  
00100 SEGMENT PHYSICAL  
00200 ATTRIBUTES  
00300 CONTAINS EDUCATION,  
00400 EXPERIENCE  
00500 SEQUENCE-KEY COLLEGE-NAME UNIQUELY  
00600 POINTERS SINGLE  
00700 GENERATES EMPLOYING-COMPANY IN EXPERIENCE  
07000 ALIAS LOW-LEVEL 'EMPLIONS'  
08000 CATALOG 'PHYSICAL SEGMENT'  
END OF PRINT

PRINT OF EMPLOYEE-SALARY  
00100 ITEM  
00200 HELD-AS NUMERIC 5 CONTENTS RANGE 10000 TO 50000  
00300 REPORTED-AS PICTURE 'EB99,999'  
00400 ENTERED-AS NUMERIC 5  
07000 ALIAS LOW-LEVEL 'EMPSAL'  
08000 CATALOG 'SALARY','NUMERIC'  
09000 DESCRIPTION  
09100 'YEARLY SALARY. INCLUDES GEOGRAPHICAL ALLOWANCES'  
END OF PRINT

PRINT OF EMPLOYEE-STREET  
00100 ITEM  
00200 HELD-AS CHARACTER 40  
00300 REPORTED-AS PICTURE "X(40)"  
00400 ENTERED-AS CHARACTER 40  
07000 ALIAS LOW-LEVEL 'EMPSTR'  
08000 CATALOG 'EMPLOYEE','DESCRIPTION'  
09000 DESCRIPTION  
09100 'EMPLOYEE STREET NAME INCLUDING ANY APARTMENT NUMBER'  
END OF PRINT

PRINT OF EMPLOYEE-TELEPHONE  
00100 ITEM  
00200 HELD-AS NUMERIC 10  
00300 REPORTED-AS PICTURE '999888999999'  
00400 ENTERED-AS NUMERIC-CHARACTER 10  
07000 ALIAS LOW-LEVEL 'EMPTELNO'  
08000 CATALOG 'EMPLOYEE','DESCRIPTION'  
09000 DESCRIPTION  
09100 'EMPLOYEE TELEPHONE NUMBER INCLUDING CODE'  
END OF PRINT

PRINT OF EMPLOYEE-TOWN  
00100 ITEM  
00200 HELD-AS CHARACTER 20  
00300 ENTERED-AS CHARACTER 20  
00400 REPORTED-AS PICTURE "X(20)"

X600

00500 ALIAS LOW-LEVEL 'EMPTOWN',IMS 'IMS', 'NONSPEC'  
00600 CATALOG 'EMPLOYEE', 'DESCRIPTION'  
00700 DESCRIPTION  
00800 'EMPLOYEE HOME TOWN NAME AND POST CODE'  
END OF PRINT

PRINT OF EMPLOYING-CODE  
00100 ITEM  
00200 ENTERED-AS ALPHANUMERIC 4  
00300 HELD-AS NUMERIC 4 CONTENTS RANGE 1000 TO 8000  
00400 REPORTED-AS PICTURE '9999'  
00500 ALIAS LOW-LEVEL 'EMPLCODE'  
00600 CATALOG 'CODE'  
END OF PRINT

PRINT OF EMPLOYING-COMPANY  
00100 ITEM  
00200 ENTERED-AS CHARACTER 30  
00300 HELD-AS CHARACTER 30  
00400 REPORTED-AS PICTURE "X(30)"  
07000 ALIAS LOW-LEVEL 'EMPEMP'  
08000 CATALOG 'EMPLOYEE', 'DESCRIPTION'  
09000 DESCRIPTION  
09100 'NAME OF OUTSIDE COMPANY OR INTERNAL DEPARTMENT OF THIS ORGANISATION'  
END OF PRINT

PRINT OF EXPERIENCE  
00100 GROUP  
00150 HELD-AS  
00200 CONTAINS EMPLOYING-COMPANY,  
00300 EXPERIENCE-CODE,  
00400 EXPERIENCE-YRS  
07000 ALIAS LOW-LEVEL 'EMEXP'  
09000 DESCRIPTION  
09100 'EXPERIENCE GAINED (INCLUDING EXPERIENCE GAINED WITHIN THIS ORGANISATION)'  
10000 NOTE  
10100 'ACCURACY'  
10200 ' REFERENCES OBTAINED FROM LAST TWO'  
10300 ' EMPLOYING ORGANISATIONS'  
END OF PRINT

PRINT OF EXPERIENCE-CODE  
00100 ITEM  
00200 HELD-AS NUMERIC 2 CONTENTS RANGE 01 TO 99  
00300 ENTERED-AS NUMERIC-CHARACTER 2  
00400 REPORTED-AS PICTURE "99"  
07000 ALIAS LOW-LEVEL 'EMPOST'  
08000 CATALOG 'EMPLOYEE', 'CODE'  
09000 DESCRIPTION  
09100 'EXPERIENCE CODE TAKEN FROM STANDARD CODING BOOK'  
END OF PRINT

PRINT OF EXPERIENCE-YRS  
00100 ITEM  
00200 HELD-AS NUMERIC 2 CONTENTS  
00300 RANGE 01 TO 10

00400 ELSE RANGE 01 TO 15  
00500 IF EMPLOYEE-DEPARTMENT EQ 180  
00600 ENTERED-AS NUMERIC-CHARACTER 2  
00700 REPORTED-AS PICTURE "99"  
07000 ALIAS LOW-LEVEL 'EMPYRS'  
08000 CATALOG 'EMPLOYEE', 'NUMERIC'  
09000 DESCRIPTION  
09100 'NUMBER OF YEARS EXPERIENCE'  
END OF PRINT

PRINT OF GENLRMD  
00100 MODULE  
00200 LANGUAGE "COBOL"  
00300 ALIAS "GENERAL-RANDOMIZING-MODULE"  
00400 CATALOG "COBOL"  
00500 DESCRIPTION  
00600 'EMPLOYEE-DATABASE-PHYSICAL RANDOMIZING MODULE'  
END OF PRINT

PRINT OF PERSONNEL-CODE  
00100 ITEM  
00200 ENTERED-AS ALPHANUMERIC 4  
00300 HELD-AS NUMERIC 4 CONTENTS RANGE 1000 TO 8000  
00400 REPORTED-AS PICTURE '9999'  
00500 ALIAS LOW-LEVEL 'PRSNCODE'  
00600 CATALOG 'CODE'  
END OF PRINT

X600

```

PRINT OF QUALIFICATIONS
00100 ITEM
00200 HELD-AS CHARACTER 10
00300 ENTERED-AS CHARACTER 10
00400 REPORTED-AS PICTURE "X(10)"
07000 ALIAS LOW-LEVEL 'EMPQUA'
08000 CATALOG 'EMPLOYEE', 'DESCRIPTION'
09000 DESCRIPTION
09100 'QUALIFICATION OBTAINED AND DATE OF CERTIFICATE (SHOWN AS MM/YY)'
      END OF PRINT

```

```

PRINT OF SOCIAL-SECURITY-CODE
00100 ITEM
00200 ENTERED-AS 1 ALPHANUMERIC 15
00300 ENTERED-AS 2 CHARACTER 15
00400 HELD-AS ALPHANUMERIC 15
00500 REPORTED-AS PICTURE 'XXXBX(5)B999BXXXX'
07000 ALIAS LOW-LEVEL 'EMPSSC'
08000 CATALOG 'SALARY', 'CODE'
09000 DESCRIPTION
09100 'CURRENT EMPLOYEE SOCIAL SECURITY CODE'
      END OF PRINT

```

```

PRINT OF TAX-CODE
00100 ITEM
00200 HELD-AS NUMERIC 4 CONTENTS IS 538
00300 ELSE IS 670
00400 ELSE RANGE 1000 TO 6000
00500 ENTERED-AS NUMERIC-CHARACTER 4
00600 REPORTED-AS PICTURE "9999"
07000 ALIAS LOW-LEVEL 'EMPTAX'
08000 CATALOG 'SALARY', 'CODE'
09000 DESCRIPTION
09100 'EMPLOYEE TAX CODE SENT BY TAX OFFICE'
10000 NOTE
10100 'ACCURACY'
10200 'TAX CODE IS ONE MONTH OUT OF DATE'
      END OF PRINT

```

24 MEMBERS PROCESSED BY BULK PRINT

00191 WHICH SEGMENTS CONSTITUTE EMPLOYEE-DATABASE-PHYSICAL.

*Interrogation on IMS segments.*

THE FOLLOWING SEGMENTS SATISFY THE GIVEN CRITERIA

PHYSICAL SEGMENT	EMPLOYEE-DATA
PHYSICAL SEGMENT	EMPLOYEE-IDENT
PHYSICAL SEGMENT	EMPLOYEE-QUALIFICATIONS
PHYSICAL SEGMENT	EMPLOYEE-GENERAL

4 MEMBERS IN TOTAL

00192 REPORT EMPLOYEE-GENERAL.

REPORT OF PHYSICAL SEGMENT EMPLOYEE-GENERAL

EDITION 10 ENCODED BY MASTER AT 12.26.56 ON 13 OCT 1981  
STATUS IMS  
PROTECTION: NONE

ALIAS  
LOW-LEVEL EMPRAL

CATALOGUED AS  
PHYSICAL SEGMENT

DESCRIPTION  
THIS PHYSICAL SEGMENT CONTAINS EMPLOYEE GENERAL DATA.

THIS MEMBER IS DIRECTLY REFERRED TO 7 TIMES  
THIS MEMBER CONTAINS 5 DIRECT REFERENCES

PHYSICAL SEGMENT EMPLOYEE-GENERAL

ATTRIBUTES

SEQUENCE-KEY

ITEM SOCIAL-SECURITY-CODE UNIQUELY

POINTERS SINGLE-TWIN

GENERATES  
ITEM EMPLOYEE-SALARY

CONTAINS  
ITEM SOCIAL-SECURITY-CODE  
ITEM TAX-CODE  
ITEM EMPLOYEE-SALARY

X600

00193 WHICH PCBs USE EMPLOYEE-DATABASE-PHYSICAL.

*Interrogation on PCBs.*

THE FOLLOWING PCBs SATISFY THE GIVEN CRITERIA

STRUCTURE PCB  
STRUCTURE PCB

PCB-PAYROLL  
PCB-PERSONNEL

2 MEMBERS IN TOTAL

X600

```

00194 MODIFY PCB-PERSONNEL.
00195 100 PCB STRUCTURE BY GET REPLACE
00196 .
DM01180I ALTERATION HAS CREATED NEW SOURCE RECORD
DM01296I ENCODING OF PCB-PERSONNEL
00100 PCB STRUCTURE BY GET REPLACE
00200 SINGLE-POSITIONING
00300 DATABASE EMPLOYEE-DATABASE-PHYSICAL
00400 SEGMENT EMPLOYEE-DATA
00500 SEGMENT EMPLOYEE-IDENT
DM01889I STRUCTURE PROCESSING OPTIONS HAVE BEEN VALIDATED
00600 SENSITIVE-FIELDS EMPLOYEE-NAME,40,EMPLOYEE-TOWN
DM01887W REPLACE ASSUMED
00700 SEGMENT EMPLOYEE-QUALIFICATIONS
DM01887W REPLACE ASSUMED
00800 SENSITIVE-FIELDS QUALIFICATION-RATINGS
00900 SEGMENT EMPLOYEE-GENERAL
DM01887W REPLACE ASSUMED
01000 BY GET INSERT REPLACE
01100 ALIAS LOW-LEVEL 'PCBPRSNL'
01200 CATALOG 'STRUCTURE PCB'
01300 DESCRIPTION 'WILL GENERATE FIELD SENSITIVITY'
DM01889I SEGMENT PROCESSING OPTIONS HAVE BEEN VALIDATED
DM01280I PCB-PERSONNEL SUCCESSFULLY ENCODED

00197 MODIFY PCB-DATA.
00198 200 BY UPDATE
00199 .
DM01180I ALTERATION HAS CREATED NEW SOURCE RECORD
DM01296I ENCODING OF PCB-DATA
00100 PCB STRUCTURE
00200 BY UPDATE
00300 SINGLE-POSITIONING
00400 DATABASE EMPLOYEE-DATABASE-LOGICAL
00500 SEGMENT EMPLOYEE-IDENT-L
00600 SEGMENT EMPLOYEE-GENERAL
DM01889I STRUCTURE PROCESSING OPTIONS HAVE BEEN VALIDATED
00700 SEGMENT QUALIFICATIONS-L
00800 ALIAS LOW-LEVEL 'PCBDATA'
00900 CATALOG 'STRUCTURE PCB'
01000 DESCRIPTION 'WILL GENERATE LOGICAL STRUCTURE'
DM01280I PCB-DATA SUCCESSFULLY ENCODED

00200 REPORT PCB-PAYROLL.

```

REPORT OF STRUCTURE PCB PCB-PAYROLL

EDITION 3 ENCODED BY MASTER AT 18.18.40 ON 13 OCT 1981  
STATUS IMS  
PROTECTION: NONE

ALIAS  
LOW-LEVEL PCBPAYRL

CATALOGUED AS  
STRUCTURE PCB

DESCRIPTION  
WILL GENERATE SECONDARY SEQUENCE

THIS MEMBER IS DIRECTLY REFERRED TO ONCE  
THIS MEMBER CONTAINS 3 DIRECT REFERENCES

STRUCTURE PCB PCB-PAYROLL

PROCESSING OPTIONS

WITH GET ONLY

SINGLE-POSITIONING

DATABASE EMPLOYEE-DATABASE-PHYSICAL

SEGMENT EMPLOYEE-DATA

SECONDARY SEQUENCE ON

INDEX POINTER SEGMENT EMPLOYEE-INDEX

*Extra validation features in DATAMANAGER mean that we must change PCB-PERSONNEL in order to produce PSBGEN as demonstrated later. To retain the illustration of the BY UPDATE clause, also change PCB-DATA. (These commands only need to be issued when the dictionary is first used; subsequent users may find the modified clauses already present on the dictionary.)*

## REPORT OF DL1 LOGICAL DATABASE EMPLOYEE-DATABASE-LOGICAL

EDITION 14 ENCODED BY ANALYST AT 15.40.04 ON 06 NOV 1981  
 STATUS IMS  
 PROTECTION: NONE

ALIAS  
 LOW-LEVEL EMPDBL

CATALOGUED AS  
 LOGICAL DATABASE

DESCRIPTION  
 THIS LOGICAL DATABASE DEFINES EMPLOYEE-QUALIFICATIONS.

THIS MEMBER IS DIRECTLY REFERRED TO ONCE  
 THIS MEMBER CONTAINS 7 DIRECT REFERENCES

## DL1 LOGICAL DATABASE EMPLOYEE-DATABASE-LOGICAL

CONTAINS SEGMENTS

EMPLOYEE-DATA  
 EMPLOYEE-IDENT-L PARENT EMPLOYEE-DATA  
 EMPLOYEE-GENERAL PARENT EMPLOYEE-IDENT-L  
 QUALIFICATIONS-L PARENT EMPLOYEE-DATA

00202 KEEP WHAT CONSTITUTES EMPLOYEE-DATABASE-LOGICAL.  
 DM01541I 28 ENTRIES ADDED TO KEPT-DATA LIST

00203 LIST KEPT-DATA ALPHABETICALLY.

## LIST OF SELECTED MEMBERS

MEMBER NAME	TYPE	USAGE	CONDITION	AC	ALT	REM	OWNER
CK001	SYS REL FLD	2	DMR	YES	YES	YES	
COLLEGE-NAME	ITEM	2	SCE	ENC	YES	YES	YES
EDUCATION	GROUP	2	SCE	ENC	YES	YES	YES
EMP-KEY	CONC-KEY	1	DMR	YES	YES	YES	
EMPLOYEE-CODE	GROUP	5	SCE	ENC	YES	YES	PERSONNEL
EMPLOYEE-DATA	DST/SRC/TARG	13	SCE	ENC	YES	YES	YES
EMPLOYEE-DEPARTMENT	ITEM	3	SCE	ENC	YES	YES	PERSONNEL
EMPLOYEE-GENERAL	PHYSICAL SEG	7	SCE	ENC	YES	YES	YES
EMPLOYEE-IDENT	UNID L.CHILD	4	SCE	ENC	YES	YES	YES
EMPLOYEE-IDENT-L	CONCAT SEG	3	SCE	ENC	YES	YES	YES
EMPLOYEE-IDENTIFICATION	GROUP	3	SCE	ENC	YES	YES	YES
EMPLOYEE-NAME	ITEM	5	SCE	ENC	YES	YES	PERSONNEL
EMPLOYEE-QUALIFICATIONS	PHYSICAL SEG	5	SCE	ENC	YES	YES	YES
EMPLOYEE-SALARY	ITEM	4	SCE	ENC	YES	YES	PERSONNEL
EMPLOYEE-STREET	ITEM	1	SCE	ENC	YES	YES	YES
EMPLOYEE-TELEPHONE	ITEM	1	SCE	ENC	YES	YES	YES
EMPLOYEE-TOWN	ITEM	2	SCE	ENC	YES	YES	YES
EMPLOYING-CODE	ITEM	3	SCE	ENC	YES	YES	YES
EMPLOYING-COMPANY	ITEM	2	SCE	ENC	YES	YES	YES
EXPERIENCE	GROUP	3	SCE	ENC	YES	YES	YES
EXPERIENCE-CODE	ITEM	1	SCE	ENC	YES	YES	YES
EXPERIENCE-YRS	ITEM	1	SCE	ENC	YES	YES	YES
PERSONNEL-CODE	ITEM	3	SCE	ENC	YES	YES	YES
QUALIFICATIONS	ITEM	1	SCE	ENC	YES	YES	YES
QUALIFICATIONS-L	LOGICAL SEG	2	SCE	ENC	YES	YES	YES
SOCIAL-SECURITY-CODE	ITEM	5	SCE	ENC	YES	YES	PERSONNEL
SX001	SYS REL FLD	3	DMR	YES	YES	YES	
TAX-CODE	ITEM	3	SCE	ENC	YES	YES	PERSONNEL

LIST CONTAINS 15 ITEMS  
 4 GROUPS  
 2 SYSTEM RELATED FIELDS  
 1 CONCATENATED-KEY  
 6 SEGMENTS  
 28 MEMBERS IN TOTAL

X600

00204 WHICH SEGMENTS CONSTITUTE EMPLOYEE-DATABASE-LOGICAL.

Interrogation on segments

THE FOLLOWING SEGMENTS SATISFY THE GIVEN CRITERIA

PHYSICAL SEGMENT	EMPLOYEE-DATA
LOGICAL SEGMENT	EMPLOYEE-IDENT-L
PHYSICAL SEGMENT	EMPLOYEE-IDENT
PHYSICAL SEGMENT	EMPLOYEE-GENERAL
LOGICAL SEGMENT	QUALIFICATIONS-L
PHYSICAL SEGMENT	EMPLOYEE-QUALIFICATIONS

6 MEMBERS IN TOTAL

00205 REPORT EMPLOYEE-IDENT-L.

REPORT OF LOGICAL SEGMENT EMPLOYEE-IDENT-L

EDITION 6 ENCODED BY ANALYST AT 16.43.56 ON 22 OCT 1981  
STATUS IMS  
PROTECTION: NONE

ALIAS  
LOW-LEVEL EMPIDNTL

CATALOGUED AS  
LOGICAL SEGMENT

DESCRIPTION  
THIS SEGMENT CONTAINS THE CONCATENATED PHYSICAL SEGMENTS

THIS MEMBER IS DIRECTLY REFERRED TO 3 TIMES  
THIS MEMBER CONTAINS 2 DIRECT REFERENCES

LOGICAL SEGMENT EMPLOYEE-IDENT-L

ATTRIBUTES

CONTAINS PHYSICAL SEGMENTS

EMPLOYEE-IDENT  
EMPLOYEE-DATA

00206 WHICH PCBs USE EMPLOYEE-DATABASE-LOGICAL.

... and PCBs.

THE FOLLOWING PCBs SATISFY THE GIVEN CRITERIA

STRUCTURE PCB	PCB-DATA
---------------	----------

1 MEMBER IN TOTAL

X600

00207 PRODUCE COBOL USED-IN PCB-PERSONNEL FROM  
00208 EMPLOYEE-IDENT, EMPLOYEE-GENERAL NOGEN  
00209 PRINT GIVING DESCRIPTIONS.

*Produce COBOL IOGEN.*

- 01 EMPLOYEE-IDENT.
- \* THIS PHYSICAL SEGMENT CONTAINS EMPLOYEE IDENTIFICATION.
- 02 EMPLOYEE-NAME PIC X(30).
- \* EMPLOYEE SURNAME, FIRST NAME AND MIDDLE NAME
- 02 FILLER PIC X(40).
- 02 EMPLOYEE-TOWN PIC X(20).
- \* EMPLOYEE HOME TOWN NAME AND POST CODE

DM02217I EMPLOYEE-IDENT SUCCESSFULLY GENERATED

DM02541W NO SENSITIVE FIELDS ARE DEFINED FOR EMPLOYEE-GENERAL  
DM02302W USED-IN ENTRY IGNORED FOR EMPLOYEE-GENERAL

- 01 EMPLOYEE-GENERAL.
- \* THIS PHYSICAL SEGMENT CONTAINS EMPLOYEE GENERAL DATA.
- 02 SOCIAL-SECURITY-CODE PIC X(15).
- \* CURRENT EMPLOYEE SOCIAL SECURITY CODE
- 02 TAX-CODE PIC 9(4).
- \* EMPLOYEE TAX CODE SENT BY TAX OFFICE
- 02 EMPLOYEE-SALARY PIC 9(5).
- \* YEARLY SALARY. INCLUDES GEOGRAPHICAL ALLOWANCES

DM02217I EMPLOYEE-GENERAL SUCCESSFULLY GENERATED

X600

00210 PRODUCE IMS DBDGEN SEARCH-FIELDS FROM  
00211 EMPLOYEE-DATABASE-PHYSICAL AS EDP NOGEN  
00212 PRINT WITH-ALIAS LOW-LEVEL.

Produce DBDGEN.

DBD NAME=EMPDBS, ACCESS=(HDAM, VSAM),  
 RMNAME=(GENLRMD, 46, 60976, ), PASSWD=NO  
 DM02273W GENLRMD MEMBER NAME USED INSTEAD OF REQUESTED ALIAS  
 DATASET DD1=EMPDD, DEVICE=3350, BLOCK=1024, SCAN=3  
 SEGM NAME=EMPLDATA, BYTES=8, POINTER=(TWIN, ...), RULES=(LLL)  
 LCHILD NAME=EMPENT  
 FIELD NAME=(EMPCODE, SEQ, U), BYTES=8, START=1, TYPE=C  
 FIELD NAME=/SX001  
 FIELD NAME=/CK001, BYTES=4, START=5  
 FIELD NAME=EMPLCODE, BYTES=4, START=1, TYPE=C  
 DM02488W LCHILD NAME=(EMPINDX, EMPBNDX), POINTER=INDX  
 DIRECT-ADDRESS POINTER ASSUMED  
 XDFLD NAME=EMPSRCH, SEGMENT=EMPLDATA, SRCH=EMPLCODE,  
 SUBSEQ=/SX001, DDATA=/CK001  
 SEGM NAME=EMPENT  
 PARENT=((EMPLDATA), (EMPLDATA, VIRTUAL, EMPDBS)), BYTES=108,  
 DM02596W POINTER=(TWIN, LPARNT, ), RULES=(LLL)  
 A DIRECT-ADDRESS LOGICAL PARENT POINTER IS ASSUMED  
 FIELD NAME=(EMPNAME, SEQ, U), BYTES=30, START=9, TYPE=C  
 FIELD NAME=EMPTOWN, BYTES=20, START=79, TYPE=C  
 SEGM NAME=EMPTIONS, PARENT=EMPLDATA, BYTES=74,  
 POINTER=(TWIN, ...)  
 FIELD NAME=(EMPCOL, SEQ, U), BYTES=30, START=1, TYPE=C  
 FIELD NAME=EMPEMP, BYTES=30, START=41, TYPE=C  
 SEGM NAME=EMPRAL, PARENT=EMPLDATA, BYTES=24, POINTER=(TWIN, ...)  
 FIELD NAME=(EMPSSC, SEQ, U), BYTES=15, START=1, TYPE=C  
 FIELD NAME=EMPSAL, BYTES=5, START=20, TYPE=C  
 DBDGEN  
 FINISH  
 END

VSAM  
PASSWD=NO

DM02217I EMPLOYEE-DATABASE-PHYSICAL SUCCESSFULLY GENERATED

00213 PRODUCE IMS DBDGEN ALL-FIELDS FROM  
00214 EMPLOYEE-DATABASE-INDEX AS EDI NOGEN  
00215 PRINT WITH-ALIAS LOW-LEVEL.

DBD NAME=EMPBNDX, ACCESS=(INDEX, VSAM, PROT), PASSWD=NO  
 DATASET DD1=EMPDD1, DEVICE=3330, OVFLW=EMPDD2, BLOCK=(10, 10)  
 DM02488W SEGM NAME=EMPINDX, BYTES=12  
 FIELD NAME=(INXSQKEY, SEQ, U), BYTES=8, START=1, TYPE=C  
 LCHILD NAME=(EMPLDATA, EMPDBS), POINTER=SNGL, INDEX=EMPSRCH  
 DIRECT-ADDRESS POINTER ASSUMED  
 DBDGEN  
 FINISH  
 END

DM02217I EMPLOYEE-DATABASE-INDEX SUCCESSFULLY GENERATED

X600

00216  
00217

PRODUCE IMS PSBGEN FROM PAYROLL NOGEN  
PRINT WITH-ALIAS LOW-LEVEL.

Produce PSBGEN.

DM02540W  
CESSED  
DM02538W

PCB TYPE=DB, DBDNAME=EMPOBS, PROCOPT=RG, KEYLEN=38, POS=SINGLE  
SENSEG NAME=EMPLDATA, PARENT=0  
SENSEG NAME=EMPENT, PARENT=EMPLDATA  
SENFLD NAME=EMPNAME, START=1, REPLACE=YES  
SENFLD NAME=EMPTOWN, START=71, REPLACE=YES  
SENSEG NAME=EMPTIONS, PARENT=EMPLDATA  
SENFLD NAME=QUALRAT, START=1  
ITEM QUALIFICATION-RATINGS IS A SENSITIVE FIELD AND IS NOT CONTAINED/DEFINED BY THE SEGMENT BEING PRO

DM02860W

ITEM QUALIFICATION-RATINGS MAY BE INVALID/UNRELIABLE DUE TO PREVIOUS ERRORS  
SENSEG NAME=EMPRAL, PARENT=EMPLDATA, PROCOPT=GIR  
PCB TYPE=DB, DBDNAME=EMPOBS, PROCOPT=GO, KEYLEN=4, POS=SINGLE, \*  
PROCSEQ=EMPBNDX  
SENSEG NAME=EMPLDATA, PARENT=0  
PCB TYPE=DB, DBDNAME=EMPDBL, PROCOPT=A, KEYLEN=53, POS=SINGLE  
SENSEG NAME=EMPLDATA, PARENT=0  
PHYSICAL SEGMENT EMPLOYEE-DATA FORMS PART OF THE HIERARCHICAL PATH AND HAS BEEN INSERTED  
SENSEG NAME=EMPIDNTL, PARENT=EMPLDATA  
SENSEG NAME=EMPRAL, PARENT=EMPIDNTL  
SENSEG NAME=QUAL, PARENT=EMPLDATA  
PSBGEN PSBNAME=PAYROLL, LANG=COBOL  
END

DM02217I

PAYROLL SUCCESSFULLY GENERATED

DL/I

**CHAPTER 7**

**DATAMANAGER/SYSTEM 2000/80 DEMONSTRATION (X650)**



**COMMANDS DEMONSTRATED**

STATUS "S2K".  
 AUTHORITY "ANALYST".  
 LIST S2K-DATABASES.  
 COPY P1S01 FROM "CONV".  
 PRINT P1S01.  
 MODIFY P1S01.  
 100 PROGRAM PROCESSES S2K ACCESSES DIVISION  
 110 SUBSCHEMAS SSR-DEPARTMENT  
 120 SSR VIEWS EMPLOYEE-PORTFOLIO KNOWN-AS  
 130 SSR-EMPLOYEE-PORTFOLIO OPTIONS INITIAL-VALUES  
 140 SELECTING EMPLOYEE-CODE,EMPLOYEE-NAME  
 150 EMPLOYEE-SALARY  
 160 COMMBLOCK DIVISION VIA MACRO  
 170 OPTIONS INITIAL-VALUES PASSWORD IS "PASS"  
 180 CASCADE LINKO EMPLOYEE-PORTFOLIO  
 190 LINKS-TO SSR-DEPARTMENT

ADD SSR-DEPARTMENT.  
 SSR VIEWS DEPARTMENT  
 OPTIONS PARAMETER UPDATE  
 SELECTING EMPLOYEE-DEPARTMENT KNOWN-AS  
 SSR-EMPLOYEE-DEPARTMENT

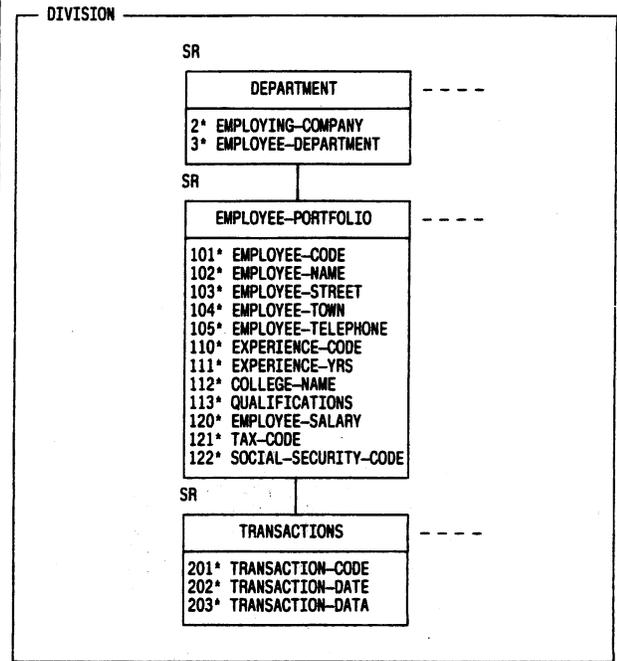
REPORT DIVISION.  
 KEEP WHAT CONSTITUTES DIVISION.  
 LIST KEPT-DATA ALPHABETICALLY.  
 BULK PRINT KEPT-DATA ALPHABETICALLY.  
 WHICH SRS CONSTITUTE DIVISION.  
 WHICH SSR DIRECTLY USES DEPARTMENT VIA VIEW.  
 REPORT EMPLOYEE-PORTFOLIO.  
 PRODUCE S2K DEFINE COMPONENTS ONLY  
 EMPLOYEE-CODE,EMPLOYEE-DEPARTMENT  
 FUNCTIONS ONLY DEDUCTION FROM DIVISION  
 NOGEN PRINT OMITTING UPDATES.  
 PRODUCE S2K DEFINE COMPONENTS FUNCTIONS  
 ONLY DEDUCTION FROM DIVISION  
 NOGEN PRINT.

REPORT DIVISION.  
 REPLACE DIVISION.  
 S2K-DATABASE  
 CONTAINS DEPARTMENT,  
 EMPLOYEE-PORTFOLIO C 100 PARENT DEPARTMENT,  
 TRANSACTIONS C 200 PARENT EMPLOYEE-PORTFOLIO  
 ITEM-COMPONENT-NUMBERS  
 2 IS EMPLOYEE-DEPARTMENT,  
 201 IS TRANSACTION-CODE,  
 202 IS TRANSACTION-DATE,  
 203 IS TRANSACTION-DATA  
 STRING EMPBLOC COMPONENT-NUMBER 1000  
 "PRINT EMPLOYEE-NAME, EMPLOYING-COMPANY"  
 "WHERE EMPLOYING-TOWN EQ '1'"  
 FUNCTION DEDUCTION MONEY '(C110 - 5.50)'  
 DELIMITER /  
 USES EMPLOYEE-SALARY  
 COMMBLOCK-NAME BLK1  
 DATASETS MULTIPLE-VALUES-TABLE DEVICE "EMP1"  
 PAGE-SIZE 1000  
 HIERARCHY-TABLE DEVICE "EMP1"  
 PAGE-SIZE 1000

**DESCRIPTION**

DATAMANAGER EXAMPLE DICTIONARY - SYSTEM 2000/80 DATABASE SUPPLEMENT

To show the SYSTEM 2000/80 database defined in the DATAMANAGER example dictionary in status S2K, and to show various forms of documentation and interrogation and source language generation outputs from it.



DIVISION is intended for simple demonstration only.

- 00220 STATUS "S2K".  
DM00096I NON-FROZEN STATUS S2K RECOGNISED
- 00221 AUTHORITY "ANALYST".  
DM01060I AUTHORITY RECOGNISED
- 00222 LIST S2K-DATABASES.

LIST OF SYSTEM 2000 DATABASES

MEMBER NAME	TYPE	USAGE	CONDITION	AC	ALT	REM	OWNER
DIVISION	S2K DATABASE	0	SCE	ENC	YES	YES	YES
LIST CONTAINS	1 SYSTEM 2000 DATABASE						

X650

```

00223 COPY P1S01 FROM "CONV".
DM01635E COPY SUCCESSFULLY COMPLETED

00224 PRINT P1S01.

PRINT OF P1S01
00100 PROGRAM
00200 INPUTS P1V01WVAL
00300 OUTPUTS P1S01TSORT
01000 AUTHOR 'ANDREW STEVENS (PROGRAMMER)'
07000 ALIAS 'SORT-EMPLOYEE-TRANSACTIONS'
08000 CATALOGUE 'BATCH', 'SORT', 'WEEKLY'
09000 DESCRIPTION
09100 'THIS PROGRAM SORTS EMPLOYEE TRANSACTIONS IN EMPLOYEE CODE SEQUENCE'
10000 NOTE
10100 'DATES DEVELOPED'
10200 ' MARCH 1979'
10300 ' '
10400 'INSTRUCTIONS - RECOVERY'
10500 ' NO FILE TO BE RECOVERED'
20000 ACCESS-AUTHORITY 'PETER LEWIS'
23000 FREQUENCY WEEKLY 'BATCH'
END OF PRINT

00225 MODIFY P1S01.
00226 100 PROGRAM PROCESSES S2K ACCESSES DIVISION
00227 110 SUBSCHEMAS SSR-DEPARTMENT
00228 120 SSR VIEWS EMPLOYEE-PORTFOLIO KNOWN-AS
00229 130 SSR-EMPLOYEE-PORTFOLIO OPTIONS INITIAL-VALUES
00230 140 SELECTING EMPLOYEE-CODE,EMPLOYEE-NAME
00231 150 EMPLOYEE-SALARY
00232 160 COMMBLOCK DIVISION VIA MACRO
00233 170 OPTIONS INITIAL-VALUES PASSWORD IS "PASS"
00234 180 CASCADE LINKO EMPLOYEE-PORTFOLIO
00235 190 LINKS-TO SSR-DEPARTMENT
00236

DM01180I ALTERATION HAS CREATED NEW SOURCE RECORD
DM01296I ENCODING OF P1S01
00100 PROGRAM PROCESSES S2K ACCESSES DIVISION
00110 SUBSCHEMAS SSR-DEPARTMENT
00120 SSR VIEWS EMPLOYEE-PORTFOLIO KNOWN-AS
00130 SSR-EMPLOYEE-PORTFOLIO OPTIONS INITIAL-VALUES
00140 SELECTING EMPLOYEE-CODE,EMPLOYEE-NAME
00150 EMPLOYEE-SALARY
00160 COMMBLOCK DIVISION VIA MACRO
00170 OPTIONS INITIAL-VALUES PASSWORD IS "PASS"
00180 CASCADE LINKO EMPLOYEE-PORTFOLIO
00190 LINKS-TO SSR-DEPARTMENT
00200 INPUTS P1V01WVAL
00300 OUTPUTS P1S01TSORT
01000 AUTHOR 'ANDREW STEVENS (PROGRAMMER)'
07000 ALIAS 'SORT-EMPLOYEE-TRANSACTIONS'
08000 CATALOGUE 'BATCH', 'SORT', 'WEEKLY'
09000 DESCRIPTION
09100 'THIS PROGRAM SORTS EMPLOYEE TRANSACTIONS IN EMPLOYEE CODE SEQUENCE'
10000 NOTE
10100 'DATES DEVELOPED'
10200 ' MARCH 1979'
10300 ' '
10400 'INSTRUCTIONS - RECOVERY'
10500 ' NO FILE TO BE RECOVERED'
20000 ACCESS-AUTHORITY 'PETER LEWIS'
23000 FREQUENCY WEEKLY 'BATCH'

DM01286I S2K-SUBSCHEMA-RECORD SSR-DEPARTMENT CREATED AS DUMMY
DM01286I ITEM P1V01WVAL CREATED AS DUMMY
DM01286I ITEM P1S01TSORT CREATED AS DUMMY
DM01280I P1S01 SUCCESSFULLY ENCODED

```

Before we report DIVISION, let us introduce into the database the enhancements to SYSTEM 2000/80 member definitions. The new PROCESSES clause can be inserted in system, program and module definitions. (The following commands and the ADD SSR-DEPARTMENT command only need to be issued when the dictionary is first used; subsequent users may find that the new clause and definition are already present on the dictionary.)

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	00237	ADD SSR-DEPARTMENT.
	00238	SSR VIEWS DEPARTMENT
	00239	OPTIONS PARAMETER UPDATE
	00240	SELECTING EMPLOYEE-DEPARTMENT KNOWN-AS
	00241	SSR-EMPLOYEE-DEPARTMENT
	00242	
DMO1131I		SSR-DEPARTMENT SUCCESSFULLY INSERTED
DMO1296I		ENCODING OF SSR-DEPARTMENT
	00100	SSR VIEWS DEPARTMENT
	00200	OPTIONS PARAMETER UPDATE
	00300	SELECTING EMPLOYEE-DEPARTMENT KNOWN-AS
	00400	SSR-EMPLOYEE-DEPARTMENT
DMO1280I		SSR-DEPARTMENT SUCCESSFULLY ENCODED

*A SYSTEM 2000/80 subschema record  
definition can now be added.*

X650

00243 REPORT DIVISION.

Report DIVISION.

REPORT OF SYSTEM 2000 DATABASE DIVISION

EDITION 12 ENCODED BY ANALYST AT 09.32.27 ON 09 SEP 1982  
STATUS S2K  
PROTECTION: NONE

THIS MEMBER IS DIRECTLY REFERRED TO 2 TIMES  
THIS MEMBER CONTAINS 12 DIRECT REFERENCES

SYSTEM 2000 DATABASE DIVISION

CONTAINS DEPARTMENT  
EMPLOYEE-PORTFOLIO PARENT DEPARTMENT  
TRANSACTIONS PARENT EMPLOYEE-PORTFOLIO

COMPONENT NUMBERS 100 IS EMPLOYEE-PORTFOLIO  
200 IS TRANSACTIONS  
2 IS EMPLOYEE-DEPARTMENT  
201 IS TRANSACTION-CODE  
202 IS TRANSACTION-DATE  
203 IS TRANSACTION-DATA

STRING EMPBLOC COMPONENT NUMBER 1000  
PRINT EMPLOYEE-NAME, EMPLOYING-COMPANYWHERE EMPLOYING-TOWN EQ \*1\*

FUNCTION DEDUCTION MONEY  
(C110 - 5.50)  
DELIMITER /  
USES EMPLOYEE-SALARY

COMMBLOCK BLK1

DATASETS MULTIPLE VALUES TABLE DEVICE EMP1 PAGE SIZE 1000  
HIERARCHY TABLE DEVICE EMP1 PAGE SIZE 1000

X650

00244 KEEP WHAT CONSTITUTES DIVISION.  
DMO1541I 21 ENTRIES ADDED TO KEPT-DATA LIST

Produce a list of contained members

00245 LIST KEPT-DATA ALPHABETICALLY.

LIST OF SELECTED MEMBERS  
MEMBER NAME

MEMBER NAME	TYPE	USAGE	CONDITION	AC	ALT	REM	OWNER
COLLEGE-NAME	ITEM	2	SCE	ENC	YES	YES	YES
DEPARTMENT	S2K SR	3	SCE	ENC	YES	YES	YES
EMPLOYEE-CODE	ITEM	7	SCE	ENC	YES	YES	PERSONNEL
EMPLOYEE-DEPARTMENT	ITEM	7	SCE	ENC	YES	YES	PERSONNEL
EMPLOYEE-NAME	ITEM	5	SCE	ENC	YES	YES	PERSONNEL
EMPLOYEE-PORTFOLIO	S2K SR	5	SCE	ENC	YES	YES	YES
EMPLOYEE-SALARY	ITEM	5	SCE	ENC	YES	YES	PERSONNEL
EMPLOYEE-STREET	ITEM	2	SCE	ENC	YES	YES	YES
EMPLOYEE-TELEPHONE	ITEM	2	SCE	ENC	YES	YES	YES
EMPLOYEE-TOWN	ITEM	2	SCE	ENC	YES	YES	YES
EMPLOYING-COMPANY	ITEM	3	SCE	ENC	YES	YES	YES
EXPERIENCE-CODE	ITEM	2	SCE	ENC	YES	YES	YES
EXPERIENCE-YRS	ITEM	2	SCE	ENC	YES	YES	YES
QUALIFICATIONS	ITEM	2	SCE	ENC	YES	YES	YES
SOCIAL-SECURITY-CODE	ITEM	4	SCE	ENC	YES	YES	PERSONNEL
STANDARD-DATE	ITEM	3	SCE	ENC	YES	YES	YES
TAX-CODE	ITEM	3	SCE	ENC	YES	YES	PERSONNEL
TRANSACTION-CODE	ITEM	5	SCE	ENC	YES	YES	YES
TRANSACTION-DATA	ITEM	4	SCE	ENC	YES	YES	YES
TRANSACTION-DATE	ITEM	5	SCE	ENC	YES	YES	YES
TRANSACTIONS	S2K SR	2	SCE	ENC	YES	YES	YES

LIST CONTAINS 18 ITEMS  
3 SYSTEM 2000 SCHEMA RECORDS  
21 MEMBERS IN TOTAL

X650

00246 BULK PRINT KEPT-DATA ALPHABETICALLY.

... and a print of contained members.

```
PRINT OF COLLEGE-NAME
00100 ITEM
00200 HELD-AS CHARACTER 30
00300 REPORTED-AS PICTURE 'X(30)'
00400 ENTERED-AS CHARACTER 30
07000 ALIAS LOW-LEVEL 'EMPCOL'
08000 CATALOG 'EMPLOYEE', 'DESCRIPTION'
09000 DESCRIPTION
09100 'NAME OF COLLEGE/FACULTY'
END OF PRINT

PRINT OF DEPARTMENT
00100 SR
00200 HELD-AS
00300 CONTAINS EMPLOYING-COMPANY,
00400 EMPLOYEE-DEPARTMENT
00500 KEYS EMPLOYING-COMPANY, EMPLOYEE-DEPARTMENT
END OF PRINT

PRINT OF EMPLOYEE-CODE
00100 ITEM
00200 ENTERED-AS ALPHANUMERIC 4
00300 HELD-AS DECIMAL 4 CONTENTS RANGE 1000 TO 8000
00400 REPORTED-AS PICTURE '9999'
07000 ALIAS LOW-LEVEL 'EMPCODE'
08000 CATALOG 'EMPLOYEE', 'CODE'
09000 DESCRIPTION
09100 'STANDARD EMPLOYEE CODE'
10000 NOTE
10100 'INPUT FORM'
10200 'EMPLOYEE-TRANSACTIONS-FORM'
END OF PRINT

PRINT OF EMPLOYEE-DEPARTMENT
00100 ITEM
00200 HELD-AS DECIMAL 3 CONTENTS
00300 RANGE 100 TO 150
00400 ELSE IS 180
00500 ELSE RANGE 200 TO 900
00600 REPORTED-AS PICTURE '999'
00700 ENTERED-AS DECIMAL 3
07000 ALIAS LOW-LEVEL 'EMPDEPT'
08000 CATALOG 'EMPLOYEE', 'CODE'
09000 DESCRIPTION
09100 'EMPLOYEE DEPARTMENT CODE'
END OF PRINT

PRINT OF EMPLOYEE-NAME
00100 ITEM
00200 HELD-AS CHARACTER 30
00300 REPORTED-AS PICTURE 'X(10)B(5)X(10)B(3)X(10)'
00400 ENTERED-AS CHARACTER 30
07000 ALIAS LOW-LEVEL 'EMPNAME'
08000 CATALOG 'EMPLOYEE', 'DESCRIPTION'
09000 DESCRIPTION
09100 'EMPLOYEE SURNAME, FIRST NAME AND MIDDLE NAME'
END OF PRINT

PRINT OF EMPLOYEE-PORTFOLIO
00100 SR
00200 HELD-AS
00300 CONTAINS EMPLOYEE-CODE,
00400 EMPLOYEE-NAME,
00410 EMPLOYEE-STREET,
00420 EMPLOYEE-TOWN,
00430 EMPLOYEE-TELEPHONE,
00500 EXPERIENCE-CODE,
00600 EXPERIENCE-YRS,
00700 COLLEGE-NAME,
00710 QUALIFICATIONS,
00800 EMPLOYEE-SALARY,
00900 TAX-CODE,
01000 SOCIAL-SECURITY-CODE
01100 KEYS EMPLOYEE-CODE,
01200 EMPLOYEE-NAME,
01300 SOCIAL-SECURITY-CODE
END OF PRINT

PRINT OF EMPLOYEE-SALARY
00100 ITEM
00200 HELD-AS DECIMAL 5 CONTENTS RANGE 10000 TO 50000
00300 REPORTED-AS PICTURE '£B99,999'
00400 ENTERED-AS NUMERIC 5
07000 ALIAS LOW-LEVEL 'EMPSAL'
08000 CATALOG 'SALARY', 'NUMERIC'
09000 DESCRIPTION
```

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09100 'YEARLY SALARY. INCLUDES GEOGRAPHICAL ALLOWANCES'  
END OF PRINT

PRINT OF EMPLOYEE-STREET  
00100 ITEM  
00200 HELD-AS CHARACTER 40  
00300 REPORTED-AS PICTURE "X(40)"  
00400 ENTERED-AS CHARACTER 40  
07000 ALIAS LOW-LEVEL 'EMPSTR'  
08000 CATALOG 'EMPLOYEE', 'DESCRIPTION'  
09000 DESCRIPTION  
09100 'EMPLOYEE STREET NAME INCLUDING ANY APARTMENT NUMBER'  
END OF PRINT

PRINT OF EMPLOYEE-TELEPHONE  
00100 ITEM  
00200 HELD-AS DECIMAL 10  
00300 REPORTED-AS PICTURE '999BB999B9999'  
00400 ENTERED-AS NUMERIC-CHARACTER 10  
07000 ALIAS LOW-LEVEL 'EMPTLNO'  
08000 CATALOG 'EMPLOYEE', 'DESCRIPTION'  
09000 DESCRIPTION  
09100 'EMPLOYEE TELEPHONE NUMBER INCLUDING CODE'  
END OF PRINT

PRINT OF EMPLOYEE-TOWN  
00100 ITEM  
00200 HELD-AS CHARACTER 20  
00300 ENTERED-AS CHARACTER 20  
00400 REPORTED-AS PICTURE "X(20)"  
07000 ALIAS LOW-LEVEL 'EMPTOWN'  
08000 CATALOG 'EMPLOYEE', 'DESCRIPTION'  
09000 DESCRIPTION  
09100 'EMPLOYEE HOME TOWN NAME AND POST CODE'  
END OF PRINT

PRINT OF EMPLOYING-COMPANY  
00100 ITEM  
00200 ENTERED-AS CHARACTER 30  
00300 HELD-AS CHARACTER 30  
00400 REPORTED-AS PICTURE "X(30)"  
07000 ALIAS LOW-LEVEL 'EMPEMP'  
08000 CATALOG 'EMPLOYEE', 'DESCRIPTION'  
09000 DESCRIPTION  
09100 'NAME OF OUTSIDE COMPANY OR INTERNAL DEPARTMENT OF THIS ORGANISATION'  
END OF PRINT

PRINT OF EXPERIENCE-CODE  
00100 ITEM  
00200 HELD-AS DECIMAL 2 CONTENTS RANGE 01 TO 99  
00300 ENTERED-AS NUMERIC-CHARACTER 2  
00400 REPORTED-AS PICTURE "99"  
07000 ALIAS LOW-LEVEL 'EMPOST'  
08000 CATALOG 'EMPLOYEE', 'CODE'  
09000 DESCRIPTION  
09100 'EXPERIENCE CODE TAKEN FROM STANDARD CODING BOOK'  
END OF PRINT

PRINT OF EXPERIENCE-YRS  
00100 ITEM  
00200 HELD-AS DECIMAL 2 CONTENTS  
00300 RANGE 01 TO 10  
00400 ELSE RANGE 01 TO 15  
00500 IF EMPLOYEE-DEPARTMENT EQ 180  
00600 ENTERED-AS NUMERIC-CHARACTER 2  
00700 REPORTED-AS PICTURE "99"  
07000 ALIAS LOW-LEVEL 'EMPYRS'  
08000 CATALOG 'EMPLOYEE', 'NUMERIC'  
09000 DESCRIPTION  
09100 'NUMBER OF YEARS EXPERIENCE'  
END OF PRINT

PRINT OF QUALIFICATIONS  
00100 ITEM  
00200 HELD-AS CHARACTER 10  
00300 ENTERED-AS CHARACTER 10  
00400 REPORTED-AS PICTURE "X(10)"  
07000 ALIAS LOW-LEVEL 'EMPOUA'  
08000 CATALOG 'EMPLOYEE', 'DESCRIPTION'  
09000 DESCRIPTION  
09100 'QUALIFICATION OBTAINED AND DATE OF CERTIFICATE (SHOWN AS MM/YY)'  
END OF PRINT

PRINT OF SOCIAL-SECURITY-CODE  
00100 ITEM  
00200 ENTERED-AS 1 ALPHANUMERIC 15  
00300 ENTERED-AS 2 CHARACTER 15

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00400 HELD-AS ALPHANUMERIC 15  
00500 REPORTED-AS PICTURE 'XXXBX(5)B999BXXXX'  
07000 ALIAS LOW-LEVEL 'EMPSSC'  
08000 CATALOG 'SALARY', 'CODE'  
09000 DESCRIPTION  
09100 'CURRENT EMPLOYEE SOCIAL SECURITY CODE'  
END OF PRINT

PRINT OF STANDARD-DATE  
00100 ITEM  
00200 ENTERED-AS CHARACTER 8 CONTENTS FORMAT 'DD/MM/YY'  
00300 HELD-AS DECIMAL 6  
00400 REPORTED-AS PICTURE '99X99X99' CONTENTS FORMAT 'DD/MM/YY'  
00500 USAGE DATE  
07000 ALIAS LOW-LEVEL 'STDATE'  
08000 CATALOG 'EMPLOYEE', 'DATE'  
09000 DESCRIPTION  
09100 'PERSONNEL STANDARD DATE FORMATS'  
END OF PRINT

PRINT OF TAX-CODE  
00100 ITEM  
00200 HELD-AS DECIMAL 4 CONTENTS IS 538  
00300 ELSE IS 670  
00400 ELSE RANGE 1000 TO 6000  
00500 ENTERED-AS NUMERIC-CHARACTER 4  
00600 REPORTED-AS PICTURE '9999'  
07000 ALIAS LOW-LEVEL 'EMPTAX'  
08000 CATALOG 'SALARY', 'CODE'  
09000 DESCRIPTION  
09100 'EMPLOYEE TAX CODE SENT BY TAX OFFICE'  
10000 NOTE  
10100 'ACCURACY'  
10200 'TAX CODE IS ONE MONTH OUT OF DATE'  
END OF PRINT

PRINT OF TRANSACTION-CODE  
00100 ITEM  
00200 ENTERED-AS CHARACTER 2  
00300 HELD-AS DECIMAL 2 CONTENTS RANGE 10 TO 90  
00400 REPORTED-AS PICTURE '99'  
07000 ALIAS LOW-LEVEL 'EMPTRANS'  
08000 CATALOG 'EMPLOYEE', 'CODE'  
09000 DESCRIPTION  
09100 'EMPLOYEE TRANSACTION CODE'  
END OF PRINT

PRINT OF TRANSACTION-DATA  
00100 ITEM  
00200 ENTERED-AS CHARACTER 40  
00300 HELD-AS CHARACTER 40  
00400 REPORTED-AS PICTURE 'X(40)'  
07000 ALIAS LOW-LEVEL 'EMPTADA'  
08000 CATALOG 'EMPLOYEE', 'DESCRIPTION', 'NUMERIC'  
09000 DESCRIPTION  
09100 'TRANSACTION DATA INPUT VIA V.D.U.'  
10000 NOTE

10100 'INPUT FORM'  
10200 'EMPLOYEE-TRANSACTIONS-FORM'  
10300 ', '  
10400 'ACCURACY'  
10500 'PERSONNEL DEPARTMENT IS RESPONSIBLE'  
10600 'FOR ENSURING THAT DATA IS COMPLETELY'  
10700 'CORRECT'  
END OF PRINT

PRINT OF TRANSACTION-DATE  
00100 ITEM  
00200 ENTERED-AS NAME STANDARD-DATE  
00300 HELD-AS NAME STANDARD-DATE  
00400 REPORTED-AS NAME STANDARD-DATE  
07000 ALIAS LOW-LEVEL 'EMPDATE'  
08000 CATALOG 'EMPLOYEE', 'DATE'  
09000 DESCRIPTION  
09100 'EMPLOYEE TRANSACTION DATE'  
10000 NOTE  
10100 'ACCURACY'  
10200 'DATE IS TAKEN FROM OPERATING SYSTEM'  
10300 'SUPERVISOR AT THE TIME OF INPUT'  
END OF PRINT

PRINT OF TRANSACTIONS  
00100 SR  
00200 HELD-AS  
00300 CONTAINS TRANSACTION-CODE,

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00400 TRANSACTION-DATE,  
00500 TRANSACTION-DATA  
00600 KEYS TRANSACTION-CODE,  
00700 TRANSACTION-DATE  
END OF PRINT

21 MEMBERS PROCESSED BY BULK PRINT

X650

00247 WHICH SRS CONSTITUTE DIVISION.

Interrogation of SYSTEM 2000/80  
members.

THE FOLLOWING SYSTEM 2000 SCHEMA RECORDS SATISFY THE GIVEN CRITERIA

SYSTEM 2000 SCHEMA RECORD	DEPARTMENT
SYSTEM 2000 SCHEMA RECORD	EMPLOYEE-PORTFOLIO
SYSTEM 2000 SCHEMA RECORD	TRANSACTIONS

3 MEMBERS IN TOTAL

00248 WHICH SSR DIRECTLY USES DEPARTMENT VIA VIEW.

THE FOLLOWING S2K-SUBSCHEMA-RECORDS SATISFY THE GIVEN CRITERIA

S2K-SUBSCHEMA-RECORD	SSR-DEPARTMENT
----------------------	----------------

1 MEMBER IN TOTAL

00249 REPORT EMPLOYEE-PORTFOLIO.

REPORT OF SYSTEM 2000 SCHEMA RECORD EMPLOYEE-PORTFOLIO

EDITION 5 ENCODED BY MASTER AT 16.28.34 ON 18 JAN 1982  
STATUS S2K  
PROTECTION: NONE

THIS MEMBER IS DIRECTLY REFERRED TO 5 TIMES  
THIS MEMBER CONTAINS 15 DIRECT REFERENCES

SYSTEM 2000 SCHEMA RECORD EMPLOYEE-PORTFOLIO

FORM HELD-AS

KEYS EMPLOYEE-CODE  
EMPLOYEE-NAME  
SOCIAL-SECURITY-CODE

CONTAINS

ITEM EMPLOYEE-CODE  
ITEM EMPLOYEE-NAME  
ITEM EMPLOYEE-STREET  
ITEM EMPLOYEE-TOWN  
ITEM EMPLOYEE-TELEPHONE  
ITEM EXPERIENCE-CODE  
ITEM EXPERIENCE-YRS  
ITEM COLLEGE-NAME  
ITEM QUALIFICATIONS  
ITEM EMPLOYEE-SALARY  
ITEM TAX-CODE  
ITEM SOCIAL-SECURITY-CODE

X650

00250 PRODUCE S2K DEFINE COMPONENTS ONLY  
00251 EMPLOYEE-CODE,EMPLOYEE-DEPARTMENT  
00252 FUNCTIONS ONLY DEDUCTION FROM DIVISION  
00253 NOGEN PRINT OMITTING UPDATES.

Produce S2K. The command generates component numbers and updates the source of DIVISION, unless the OMITTING UPDATES clause is specified.

2\* EMPLOYEE-DEPARTMENT (KEY INTEGER 999):  
101\* EMPLOYEE-CODE (KEY INTEGER 9(4)):  
1\* DEDUCTION (MONEY FUNCTION/(C110 - 5.50)/):

DMO2217I DIVISION SUCCESSFULLY GENERATED

00254 PRODUCE S2K DEFINE COMPONENTS FUNCTIONS  
00255 ONLY DEDUCTION FROM DIVISION  
00256 NOGEN PRINT.

DMO2655I 28 LINES ADDED TO DIVISION SOURCE RECORD

1\* EMPLOYING-COMPANY (KEY TEXT X(30)):  
2\* EMPLOYEE-DEPARTMENT (KEY INTEGER 999):  
100\* EMPLOYEE-PORTFOLIO (SR):  
101\* EMPLOYEE-CODE (KEY INTEGER 9(4) IN 100):  
102\* EMPLOYEE-NAME (KEY TEXT X(30) IN 100):  
103\* EMPLOYEE-STREET (NON-KEY TEXT X(40) IN 100):  
104\* EMPLOYEE-TOWN (NON-KEY TEXT X(20) IN 100):  
105\* EMPLOYEE-TELEPHONE (NON-KEY INTEGER 9(10) IN 100):  
106\* EXPERIENCE-CODE (NON-KEY INTEGER 99 IN 100):  
107\* EXPERIENCE-YRS (NON-KEY INTEGER 99 IN 100):  
108\* COLLEGE-NAME (NON-KEY TEXT X(30) IN 100):  
109\* QUALIFICATIONS (NON-KEY TEXT X(10) IN 100):  
110\* EMPLOYEE-SALARY (NON-KEY INTEGER 9(5) IN 100):  
111\* TAX-CODE (NON-KEY INTEGER 9(4) IN 100):  
112\* SOCIAL-SECURITY-CODE (KEY TEXT X(15) IN 100):  
200\* TRANSACTIONS (SR IN 100):  
201\* TRANSACTION-CODE (KEY INTEGER 99 IN 200):  
202\* TRANSACTION-DATE (KEY INTEGER 9(6) IN 200):  
203\* TRANSACTION-DATA (NON-KEY TEXT X(40) IN 200):  
3\* DEDUCTION (MONEY FUNCTION/(C110 - 5.50)/):

DMO2217I DIVISION SUCCESSFULLY GENERATED  
DMO1296I ENCODING OF DIVISION

00100 S2K-DATABASE  
00200 CONTAINS DEPARTMENT,  
00300 EMPLOYEE-PORTFOLIO C 100 PARENT DEPARTMENT,  
00400 TRANSACTIONS C 200 PARENT EMPLOYEE-PORTFOLIO  
00500 ITEM-COMPONENT-NUMBERS  
00600 2 IS EMPLOYEE-DEPARTMENT,  
00700 201 IS TRANSACTION-CODE,  
00800 202 IS TRANSACTION-DATE,  
00900 203 IS TRANSACTION-DATA  
01000 STRING EMPBLOC COMPONENT-NUMBER 1000  
01100 'PRINT EMPLOYEE-NAME, EMPLOYING-COMPANY'  
01200 'WHERE EMPLOYING-TOWN EQ \*1\*'  
01300 FUNCTION DEDUCTION MONEY '(C110 - 5.50)'  
01400 DELIMITER /  
01500 USES EMPLOYEE-SALARY  
01600 COMBLOCK-NAME BLK1  
01700 DATASETS MULTIPLE-VALUES-TABLE DEVICE "EMP1"  
01800 PAGE-SIZE 1000  
01900 HIERARCHY-TABLE DEVICE "EMP1"  
02000 PAGE-SIZE 1000  
02100 COMPONENT-NO 1 IS MEMBER 'EMPLOYING-COMPANY'  
02200 DMR-NOTE 'GENERATED BY DATAMANAGER AT 11.08 ON 09 SEP 82'  
02300 COMPONENT-NO 101 IS MEMBER 'EMPLOYEE-CODE'  
02400 DMR-NOTE 'GENERATED BY DATAMANAGER AT 11.08 ON 09 SEP 82'  
02500 COMPONENT-NO 102 IS MEMBER 'EMPLOYEE-NAME'  
02600 DMR-NOTE 'GENERATED BY DATAMANAGER AT 11.08 ON 09 SEP 82'  
02700 COMPONENT-NO 103 IS MEMBER 'EMPLOYEE-STREET'  
02800 DMR-NOTE 'GENERATED BY DATAMANAGER AT 11.08 ON 09 SEP 82'  
02900 COMPONENT-NO 104 IS MEMBER 'EMPLOYEE-TOWN'  
03000 DMR-NOTE 'GENERATED BY DATAMANAGER AT 11.08 ON 09 SEP 82'  
03100 COMPONENT-NO 105 IS MEMBER 'EMPLOYEE-TELEPHONE'  
03200 DMR-NOTE 'GENERATED BY DATAMANAGER AT 11.08 ON 09 SEP 82'  
03300 COMPONENT-NO 106 IS MEMBER 'EXPERIENCE-CODE'  
03400 DMR-NOTE 'GENERATED BY DATAMANAGER AT 11.08 ON 09 SEP 82'  
03500 COMPONENT-NO 107 IS MEMBER 'EXPERIENCE-YRS'  
03600 DMR-NOTE 'GENERATED BY DATAMANAGER AT 11.08 ON 09 SEP 82'  
03700 COMPONENT-NO 108 IS MEMBER 'COLLEGE-NAME'  
03800 DMR-NOTE 'GENERATED BY DATAMANAGER AT 11.08 ON 09 SEP 82'  
03900 COMPONENT-NO 109 IS MEMBER 'QUALIFICATIONS'  
04000 DMR-NOTE 'GENERATED BY DATAMANAGER AT 11.08 ON 09 SEP 82'  
04100 COMPONENT-NO 110 IS MEMBER 'EMPLOYEE-SALARY'  
04200 DMR-NOTE 'GENERATED BY DATAMANAGER AT 11.08 ON 09 SEP 82'  
04300 COMPONENT-NO 111 IS MEMBER 'TAX-CODE'  
04400 DMR-NOTE 'GENERATED BY DATAMANAGER AT 11.08 ON 09 SEP 82'  
04500 COMPONENT-NO 112 IS MEMBER 'SOCIAL-SECURITY-CODE'  
04600 DMR-NOTE 'GENERATED BY DATAMANAGER AT 11.08 ON 09 SEP 82'  
04700 COMPONENT-NO 3 IS FUNCTION 'DEDUCTION'  
04800 DMR-NOTE 'GENERATED BY DATAMANAGER AT 11.08 ON 09 SEP 82'

DMO1280I DIVISION SUCCESSFULLY ENCODED

X650

00257 REPORT DIVISION.

REPORT OF SYSTEM 2000 DATABASE DIVISION

EDITION 13 ENCODED BY ANALYST AT 11.08.08 ON 09 SEP 1982  
STATUS S2K  
PROTECTION: NONE

THIS MEMBER IS DIRECTLY REFERRED TO 2 TIMES  
THIS MEMBER CONTAINS 25 DIRECT REFERENCES

SYSTEM 2000 DATABASE DIVISION

CONTAINS DEPARTMENT  
EMPLOYEE-PORTFOLIO PARENT DEPARTMENT  
TRANSACTIONS PARENT EMPLOYEE-PORTFOLIO

COMPONENT NUMBERS 100 IS EMPLOYEE-PORTFOLIO  
200 IS TRANSACTIONS  
2 IS EMPLOYEE-DEPARTMENT  
201 IS TRANSACTION-CODE  
202 IS TRANSACTION-DATE  
203 IS TRANSACTION-DATE  
1 IS EMPLOYING-COMPANY  
DMR-NOTE GENERATED BY DATAMANAGER AT 11.08 ON 09 SEP 82  
101 IS EMPLOYEE-CODE  
DMR-NOTE GENERATED BY DATAMANAGER AT 11.08 ON 09 SEP 82  
102 IS EMPLOYEE-NAME  
DMR-NOTE GENERATED BY DATAMANAGER AT 11.08 ON 09 SEP 82  
103 IS EMPLOYEE-STREET  
DMR-NOTE GENERATED BY DATAMANAGER AT 11.08 ON 09 SEP 82  
104 IS EMPLOYEE-TOWN  
DMR-NOTE GENERATED BY DATAMANAGER AT 11.08 ON 09 SEP 82  
105 IS EMPLOYEE-TELEPHONE  
DMR-NOTE GENERATED BY DATAMANAGER AT 11.08 ON 09 SEP 82  
106 IS EXPERIENCE-CODE  
DMR-NOTE GENERATED BY DATAMANAGER AT 11.08 ON 09 SEP 82  
107 IS EXPERIENCE-YRS  
DMR-NOTE GENERATED BY DATAMANAGER AT 11.08 ON 09 SEP 82  
108 IS COLLEGE-NAME  
DMR-NOTE GENERATED BY DATAMANAGER AT 11.08 ON 09 SEP 82  
109 IS QUALIFICATIONS  
DMR-NOTE GENERATED BY DATAMANAGER AT 11.08 ON 09 SEP 82  
110 IS EMPLOYEE-SALARY  
DMR-NOTE GENERATED BY DATAMANAGER AT 11.08 ON 09 SEP 82  
111 IS TAX-CODE  
DMR-NOTE GENERATED BY DATAMANAGER AT 11.08 ON 09 SEP 82  
112 IS SOCIAL-SECURITY-CODE  
DMR-NOTE GENERATED BY DATAMANAGER AT 11.08 ON 09 SEP 82

STRING EMPBLOC COMPONENT NUMBER 1000  
PRINT EMPLOYEE-NAME, EMPLOYING-COMPANYWHERE EMPLOYING-TOWN EQ \*1\*

FUNCTION DEDUCTION MONEY COMPONENT NUMBER 3  
DMR-NOTE GENERATED BY DATAMANAGER AT 11.08 ON 09 SEP 82  
(C110 - 5.50)  
DELIMITER /  
USES EMPLOYEE-SALARY

COMBLOCK BLK1

DATASETS MULTIPLE VALUES TABLE DEVICE EMP1 PAGE SIZE 1000  
HIERARCHY TABLE DEVICE EMP1 PAGE SIZE 1000

*Report DIVISION. See how the component numbers have been generated by the PRODUCE command; compare this to the output of the REPORT command on page 7-4.*

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```
00258 REPLACE DIVISION.
00259 S2K-DATABASE
00260 CONTAINS DEPARTMENT,
00261 EMPLOYEE-PORTFOLIO C 100 PARENT DEPARTMENT,
00262 TRANSACTIONS C 200 PARENT EMPLOYEE-PORTFOLIO
00263 ITEM-COMPONENT-NUMBERS
00264 2 IS EMPLOYEE-DEPARTMENT,
00265 201 IS TRANSACTION-CODE,
00266 202 IS TRANSACTION-DATE,
00267 203 IS TRANSACTION-DATA
00268 STRING EMPBLOC COMPONENT-NUMBER 1000
00269 "PRINT EMPLOYEE-NAME, EMPLOYING-COMPANY"
00270 "WHERE EMPLOYING-TOWN EQ '1'"
00271 FUNCTION DEDUCTION MONEY '(C110 - 5.50)'
00272 DELIMITER /
00273 USES EMPLOYEE-SALARY
00274 COMMBLOCK-NAME BLK1
00275 DATASETS MULTIPLE-VALUES-TABLE DEVICE "EMP1"
00276 PAGE-SIZE 1000
00277 HIERARCHY-TABLE DEVICE "EMP1"
00278 PAGE-SIZE 1000
00279 .
DM01132I DIVISION SUCCESSFULLY REPLACED
DM01296I ENCODING OF DIVISION
00100 S2K-DATABASE
00200 CONTAINS DEPARTMENT,
00300 EMPLOYEE-PORTFOLIO C 100 PARENT DEPARTMENT,
00400 TRANSACTIONS C 200 PARENT EMPLOYEE-PORTFOLIO
00500 ITEM-COMPONENT-NUMBERS
00600 2 IS EMPLOYEE-DEPARTMENT,
00700 201 IS TRANSACTION-CODE,
00800 202 IS TRANSACTION-DATE,
00900 203 IS TRANSACTION-DATA
01000 STRING EMPBLOC COMPONENT-NUMBER 1000
01100 "PRINT EMPLOYEE-NAME, EMPLOYING-COMPANY"
01200 "WHERE EMPLOYING-TOWN EQ '1'"
01300 FUNCTION DEDUCTION MONEY '(C110 - 5.50)'
01400 DELIMITER /
01500 USES EMPLOYEE-SALARY
01600 COMMBLOCK-NAME BLK1
01700 DATASETS MULTIPLE-VALUES-TABLE DEVICE "EMP1"
01800 PAGE-SIZE 1000
01900 HIERARCHY-TABLE DEVICE "EMP1"
02000 PAGE-SIZE 1000
DM01280I DIVISION SUCCESSFULLY ENCODED
```

*Then change DIVISION back to its former definition to leave the dictionary in an unchanged state.*



CHAPTER 8

DATAMANAGER/IDMS DEMONSTRATION (X700)



COMMANDS DEMONSTRATED	DESCRIPTION						
<p>STATUS "IDMS".                      AUTHORITY "ANALYST".                      LIST IDMS-DATABASES.                      WHAT USES EMP-DB.                      REPORT EMP-DB.                      REPORT EMPSCHEMA.                      KEEP WHAT CONSTITUTES EMP-DB.                      LIST KEPT-DATA ALPHABETICALLY.                      BULK PRINT KEPT-DATA ALPHABETICALLY.                      WHICH IDMS-RECORDS CONSTITUTE EMP-DB.                      REPORT EMPLOYEE-RECORD.                      PRODUCE IDMS SUBSCHEMA FROM EMPSCHEMA                      AS EMPSCHEM NOGEN PRINT.</p>	<p>DATAMANAGER EXAMPLE DICTIONARY - IDMS DATABASE SUPPLEMENT</p> <p>To show the IDMS database defined in the DATAMANAGER example dictionary in status IDMS, and to show various forms of documentation and interrogation and source language generation outputs from it.</p> <div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;">EMP-DB</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%; text-align: center;">EMPLOYEE AREA</th> <th style="width: 50%; text-align: center;">TRANSACTION AREA</th> </tr> </thead> <tbody> <tr> <td style="border: 1px solid black; padding: 2px;"> <p style="text-align: center;">EMPLOYEE-RECORD</p> <p>EMPLOYEE-CODE                              EMPLOYEE-IDENTIFICATION                              EMPLOYEE-NAME                              EMPLOYEE-STREET                              EMPLOYEE-TOWN                              EMPLOYEE-TELEPHONE                              EMPLOYEE-DEPARTMENT                              EMPLOYEE-SALARY                              EDUCATION                              COLLEGE-NAME                              QUALIFICATIONS                              TAX-CODE                              SOCIAL-SECURITY-CODE</p> </td> <td style="border: 1px solid black; padding: 2px;"> <p style="text-align: center;">TRANSACTION-RECORD</p> <p>TRANSACTION-CODE                              EMPLOYEE-CODE                              TRANSACTION-DATA                              TRANSACTION-DATE</p> </td> </tr> <tr> <td></td> <td style="border: 1px solid black; padding: 2px;"> <p style="text-align: center;">DEPARTMENT-RECORD</p> <p>EMPLOYEE-DEPARTMENT                              EXPERIENCE                              EMPLOYING-COMPANY                              EXPERIENCE-CODE                              EXPERIENCE-YRS</p> </td> </tr> </tbody> </table> </div> <p>EMP-DB is intended for simple demonstration only.</p>	EMPLOYEE AREA	TRANSACTION AREA	<p style="text-align: center;">EMPLOYEE-RECORD</p> <p>EMPLOYEE-CODE                              EMPLOYEE-IDENTIFICATION                              EMPLOYEE-NAME                              EMPLOYEE-STREET                              EMPLOYEE-TOWN                              EMPLOYEE-TELEPHONE                              EMPLOYEE-DEPARTMENT                              EMPLOYEE-SALARY                              EDUCATION                              COLLEGE-NAME                              QUALIFICATIONS                              TAX-CODE                              SOCIAL-SECURITY-CODE</p>	<p style="text-align: center;">TRANSACTION-RECORD</p> <p>TRANSACTION-CODE                              EMPLOYEE-CODE                              TRANSACTION-DATA                              TRANSACTION-DATE</p>		<p style="text-align: center;">DEPARTMENT-RECORD</p> <p>EMPLOYEE-DEPARTMENT                              EXPERIENCE                              EMPLOYING-COMPANY                              EXPERIENCE-CODE                              EXPERIENCE-YRS</p>
EMPLOYEE AREA	TRANSACTION AREA						
<p style="text-align: center;">EMPLOYEE-RECORD</p> <p>EMPLOYEE-CODE                              EMPLOYEE-IDENTIFICATION                              EMPLOYEE-NAME                              EMPLOYEE-STREET                              EMPLOYEE-TOWN                              EMPLOYEE-TELEPHONE                              EMPLOYEE-DEPARTMENT                              EMPLOYEE-SALARY                              EDUCATION                              COLLEGE-NAME                              QUALIFICATIONS                              TAX-CODE                              SOCIAL-SECURITY-CODE</p>	<p style="text-align: center;">TRANSACTION-RECORD</p> <p>TRANSACTION-CODE                              EMPLOYEE-CODE                              TRANSACTION-DATA                              TRANSACTION-DATE</p>						
	<p style="text-align: center;">DEPARTMENT-RECORD</p> <p>EMPLOYEE-DEPARTMENT                              EXPERIENCE                              EMPLOYING-COMPANY                              EXPERIENCE-CODE                              EXPERIENCE-YRS</p>						

- 00047 STATUS "IDMS".  
DM00096I NON-FROZEN STATUS IDMS RECOGNISED
- 00048 AUTHORITY "ANALYST".  
DM01060I AUTHORITY RECOGNISED
- 00049 LIST IDMS-DATABASES.

LIST OF IDMS-DATABASES

MEMBER NAME	TYPE	USAGE	CONDITION	AC	ALT	REM	OWNER
EMP-DB	IDMS-DATABASE	1	SCE	ENC	YES	YES	YES

LIST CONTAINS 1 IDMS-DATABASE

00050 WHAT USES EMP-DB.

IDMS-DATABASE	EMP-DB IS USED BY
IDMS-SUBSCHEMA	EMPSCHEMA
IDMS-SUBSCHEMA	EMPSCHEMA IS USED BY NO MEMBERS

X700

00051 REPORT EMP-DB.

Report EMP-DB.

REPORT OF IDMS-DATABASE EMP-DB

EDITION 3 ENCODED BY MASTER AT 12.20.50 ON 25 SEP 1981  
STATUS IDMS  
PROTECTION: NONE

THIS MEMBER IS DIRECTLY REFERRED TO ONCE  
THIS MEMBER CONTAINS 6 DIRECT REFERENCES

IDMS-DATABASE EMP-DB

DATASET EMPLOYEE-FILE ASSIGN EMP1 DEVICE 3330  
DATASET TRANSACTION-FILE ASSIGN EMP2 DEVICE 3330

JOURNAL ASSIGN EMP3 DEVICE 3330

AREAS EMPLOYEE  
TRANSACTION

SETS DEPARTMENT-SET

STAND-ALONE TRANSACTION-RECORD

00052 REPORT EMPSHEMA.

REPORT OF IDMS-SUBSCHEMA EMPSHEMA

EDITION 9 ENCODED BY MASTER AT 13.20.34 ON 21 JAN 1982  
STATUS IDMS  
PROTECTION: NONE

THIS MEMBER IS DIRECTLY REFERRED TO 0 TIMES  
THIS MEMBER CONTAINS 6 DIRECT REFERENCES

IDMS-SUBSCHEMA EMPSHEMA

ACCESSES EMP-DB

AREA EMPLOYEE  
OPTIONS  
ALLOW RETRIEVAL

RECORD DEPARTMENT-RECORD

VIEW EMPVIEW OPTIONS  
DISALLOW MODIFY

SET DEPARTMENT-SET

DMCL EMPDCL  
I-O BUFFER EMPBUFF PAGES 4 SIZE 2056  
AREA EMPLOYEE

X700

00053 KEEP WHAT CONSTITUTES EMP-DB.  
DM01541I 34 ENTRIES ADDED TO KEPT-DATA LIST

Produce a list of contained members

00054 LIST KEPT-DATA ALPHABETICALLY.

LIST OF SELECTED MEMBERS

MEMBER NAME	TYPE	USAGE	CONDITION	AC	ALT	REM	OWNER
COLLEGE-NAME	ITEM	1	SCE ENC YES YES YES				
DEPARTMENT-RECORD	IDMS-RECORD	2	SCE ENC YES YES YES				
DEPARTMENT-SET	IDMS-SET	2	SCE ENC YES YES YES				
EDUCATION	GROUP	2	SCE ENC YES YES YES				
EMPLOYEE	IDMS-AREA	5	SCE ENC YES YES YES				
EMPLOYEE-CODE	ITEM	7	SCE ENC YES YES				PERSONNEL
EMPLOYEE-DEPARTMENT	ITEM	7	SCE ENC YES YES				PERSONNEL
EMPLOYEE-FILE	FILE	2 *	DUM YES YES YES				
EMPLOYEE-IDENTIFICATION	GROUP	2	SCE ENC YES YES YES				
EMPLOYEE-NAME	ITEM	2	SCE ENC YES YES				PERSONNEL
EMPLOYEE-RECORD	IDMS-RECORD	2	SCE ENC YES YES YES				
EMPLOYEE-SALARY	ITEM	4	SCE ENC YES YES				PERSONNEL
EMPLOYEE-STREET	ITEM	1	SCE ENC YES YES YES				
EMPLOYEE-TELEPHONE	ITEM	1	SCE ENC YES YES YES				
EMPLOYEE-TOWN	ITEM	1	SCE ENC YES YES YES				
EMPLOYING-COMPANY	ITEM	1	SCE ENC YES YES YES				
EXPERIENCE	GROUP	2	SCE ENC YES YES YES				
EXPERIENCE-CODE	ITEM	1	SCE ENC YES YES YES				
EXPERIENCE-YRS	ITEM	1	SCE ENC YES YES YES				
QUALIFICATIONS	ITEM	1	SCE ENC YES YES YES				
SOCIAL-SECURITY-CODE	ITEM	3	SCE ENC YES YES				PERSONNEL
STANDARD-DATE	ITEM	3	SCE ENC YES YES YES				
TAX-CODE	ITEM	3	SCE ENC YES YES				PERSONNEL
TRANSACTION	IDMS-AREA	2	SCE ENC YES YES YES				
TRANSACTION-CODE	ITEM	3	SCE ENC YES YES YES				
TRANSACTION-DATA	ITEM	2	SCE ENC YES YES YES				
TRANSACTION-DATE	ITEM	2	SCE ENC YES YES YES				
TRANSACTION-FILE	FILE	2 *	DUM YES YES YES				
TRANSACTION-RECORD	IDMS-RECORD	1	SCE ENC YES YES YES				

LIST CONTAINS

- 18 ITEMS
- 3 GROUPS
- 3 IDMS-RECORDS
- 2 IDMS-AREAS
- 2 FILES
- 1 IDMS-SET
- 2 DUMMIES
- 29 MEMBERS IN TOTAL

X700

00055 BULK PRINT KEPT-DATA ALPHABETICALLY.

... and a print of contained members.

00100 PRINT OF COLLEGE-NAME  
00200 ITEM  
00300 HELD-AS CHARACTER 30  
00400 REPORTED-AS PICTURE 'X(30)'  
00700 ENTERED-AS CHARACTER 30  
08000 ALIAS LOW-LEVEL 'EMPCOL'  
09000 CATALOG 'EMPLOYEE', 'DESCRIPTION'  
09100 DESCRIPTION  
'NAME OF COLLEGE/FACULTY'  
END OF PRINT

00100 PRINT OF DEPARTMENT-RECORD  
00200 IDMS-RECORD  
00300 IDENTITY 200  
00400 STORED USING KEY EMPLOYEE-DEPARTMENT  
00500 DUPLICATES DISALLOWED  
00600 AREA EMPLOYEE FROM 101 TO 130  
00700 CONTAINS EMPLOYEE-DEPARTMENT,  
EXPERIENCE  
END OF PRINT

00100 PRINT OF DEPARTMENT-SET  
00200 IDMS-SET  
00300 ORDER NEXT  
00400 LINKED-PRIOR  
00500 OWNER DEPARTMENT-RECORD NEXT-POSITION 1  
00600 PRIOR-POSITION 2  
00700 MEMBER EMPLOYEE-RECORD NEXT-POSITION 1  
00800 PRIOR-POSITION 2  
OWNER-POSITION 5  
END OF PRINT

00100 PRINT OF EDUCATION  
00150 GROUP  
00200 HELD-AS  
00300 CONTAINS COLLEGE-NAME,  
QUALIFICATIONS  
07000 ALIAS LOW-LEVEL 'EMPEDU'  
09000 DESCRIPTION  
09100 'EDUCATION RECEIVED BY EMPLOYEE INCLUDING PROFESSIONAL TRAINING'  
10000 NOTE  
10100 'ACCURACY'  
10200 ' ALL COLLEGE CERTIFICATES CHECKED'  
10300 ' AND REFERENCES OBTAINED'  
END OF PRINT

00100 PRINT OF EMPLOYEE  
00200 IDMS-AREA  
00300 PAGES 101 TO 200 OF EMPLOYEE-FILE  
BLOCK 1 TO 100  
END OF PRINT

00100 PRINT OF EMPLOYEE-CODE  
00200 ITEM  
00300 ENTERED-AS ALPHANUMERIC 4  
00400 HELD-AS NUMERIC 4 CONTENTS RANGE 1000 TO 8000  
00700 REPORTED-AS PICTURE '9999'  
08000 ALIAS LOW-LEVEL 'EMPCODE'  
09000 CATALOG 'EMPLOYEE', 'CODE'  
09100 DESCRIPTION  
'STANDARD EMPLOYEE CODE'  
10000 NOTE  
10100 'INPUT FORM'  
10200 ' EMPLOYEE-TRANSACTIONS-FORM'  
END OF PRINT

00100 PRINT OF EMPLOYEE-DEPARTMENT  
00200 ITEM  
00300 HELD-AS NUMERIC-CHARACTER 3 CONTENTS  
RANGE 100 TO 150  
00400 ELSE IS 180  
00500 ELSE RANGE 200 TO 900  
00600 REPORTED-AS PICTURE '999'  
00700 ENTERED-AS NUMERIC-CHARACTER 3  
07000 ALIAS LOW-LEVEL 'EMPDEPT'  
08000 CATALOG 'EMPLOYEE', 'CODE'  
09000 DESCRIPTION  
09100 'EMPLOYEE DEPARTMENT CODE'  
END OF PRINT

00100 PRINT OF EMPLOYEE-IDENTIFICATION  
00150 GROUP  
00200 HELD-AS  
00300 CONTAINS EMPLOYEE-NAME,  
EMPLOYEE-STREET,

X700

00400 EMPLOYEE-TOWN,  
00500 EMPLOYEE-TELEPHONE  
07000 ALIAS LOW-LEVEL 'EMPIDEN'  
09000 DESCRIPTION  
09100 'NAME, ADDRESS AND TELEPHONE NUMBER OF AN EMPLOYEE'  
10000 NOTE  
10100 'ACCURACY'  
10200 ' NAME CHECKED AGAINST BIRTH CERTIFICATE'  
10300 ' ADDRESS AND TELEPHONE NUMBER NOT CHECKED'  
END OF PRINT

PRINT OF EMPLOYEE-NAME  
00100 ITEM  
00200 HELD-AS CHARACTER 30  
00300 REPORTED-AS PICTURE 'X(10)B(5)X(10)B(3)X(10)'  
00400 ENTERED-AS CHARACTER 30  
07000 ALIAS LOW-LEVEL 'EMPNAME'  
08000 CATALOG 'EMPLOYEE', 'DESCRIPTION'  
09000 DESCRIPTION  
09100 'EMPLOYEE SURNAME, FIRST NAME AND MIDDLE NAME'  
END OF PRINT

PRINT OF EMPLOYEE-RECORD  
00100 IDMS-RECORD  
00200 IDENTITY 100  
00300 STORED USING KEY EMPLOYEE-CODE  
00400 DUPLICATES DISALLOWED  
00500 AREA EMPLOYEE FROM 131 TO 200  
00600 CONTAINS EMPLOYEE-CODE,  
00700 EMPLOYEE-IDENTIFICATION,  
00800 EMPLOYEE-DEPARTMENT,  
00900 EMPLOYEE-SALARY,  
01000 EDUCATION,  
01100 TAX-CODE,  
01200 SOCIAL-SECURITY-CODE  
END OF PRINT

PRINT OF EMPLOYEE-SALARY  
00100 ITEM  
00200 HELD-AS NUMERIC 5 CONTENTS RANGE 10000 TO 50000  
00300 REPORTED-AS PICTURE 'EB99,999'  
00400 ENTERED-AS NUMERIC 5  
07000 ALIAS LOW-LEVEL 'EMPSAL'  
08000 CATALOG 'SALARY', 'NUMERIC'  
09000 DESCRIPTION  
09100 'YEARLY SALARY. INCLUDES GEOGRAPHICAL ALLOWANCES'  
END OF PRINT

PRINT OF EMPLOYEE-STREET  
00100 ITEM  
00200 HELD-AS CHARACTER 40  
00300 REPORTED-AS PICTURE 'X(40)'  
00400 ENTERED-AS CHARACTER 40  
07000 ALIAS LOW-LEVEL 'EMPSTR'  
08000 CATALOG 'EMPLOYEE', 'DESCRIPTION'  
09000 DESCRIPTION  
09100 'EMPLOYEE STREET NAME INCLUDING ANY APARTMENT NUMBER'  
END OF PRINT

PRINT OF EMPLOYEE-TELEPHONE  
00100 ITEM  
00200 HELD-AS NUMERIC 10  
00300 REPORTED-AS PICTURE '999BB999B9999'  
00400 ENTERED-AS NUMERIC-CHARACTER 10  
07000 ALIAS LOW-LEVEL 'EMPTELNO'  
08000 CATALOG 'EMPLOYEE', 'DESCRIPTION'  
09000 DESCRIPTION  
09100 'EMPLOYEE TELEPHONE NUMBER INCLUDING CODE'  
END OF PRINT

PRINT OF EMPLOYEE-TOWN  
00100 ITEM  
00200 HELD-AS CHARACTER 20  
00300 ENTERED-AS CHARACTER 20  
00400 REPORTED-AS PICTURE 'X(20)'  
07000 ALIAS LOW-LEVEL 'EMPTOWN'  
08000 CATALOG 'EMPLOYEE', 'DESCRIPTION'  
09000 DESCRIPTION  
09100 'EMPLOYEE HOME TOWN NAME AND POST CODE'  
END OF PRINT

PRINT OF EMPLOYING-COMPANY  
00100 ITEM  
00200 ENTERED-AS CHARACTER 30  
00300 HELD-AS CHARACTER 30  
00400 REPORTED-AS PICTURE 'X(30)'  
07000 ALIAS LOW-LEVEL 'EMPEMP'  
08000 CATALOG 'EMPLOYEE', 'DESCRIPTION'

X700

09000 DESCRIPTION  
09100 'NAME OF OUTSIDE COMPANY OR INTERNAL DEPARTMENT OF THIS ORGANISATION'  
END OF PRINT

PRINT OF EXPERIENCE

00100 GROUP  
00150 HELD-AS  
00200 CONTAINS EMPLOYING-COMPANY,  
00300 EXPERIENCE-CODE,  
00400 EXPERIENCE-YRS  
07000 ALIAS LOW-LEVEL 'EMPEXP'  
09000 DESCRIPTION  
09100 'EXPERIENCE GAINED (INCLUDING EXPERIENCE GAINED WITHIN THIS ORGANISATION)'  
10000 NOTE  
10100 'ACCURACY'  
10200 ' REFERENCES OBTAINED FROM LAST TWO'  
10300 ' EMPLOYING ORGANISATIONS'  
END OF PRINT

PRINT OF EXPERIENCE-CODE

00100 ITEM  
00200 HELD-AS NUMERIC 2 CONTENTS RANGE 01 TO 99  
00300 ENTERED-AS NUMERIC-CHARACTER 2  
00400 REPORTED-AS PICTURE "99"  
07000 ALIAS LOW-LEVEL 'EMPOST'  
08000 CATALOG 'EMPLOYEE', 'CODE'  
09000 DESCRIPTION  
09100 'EXPERIENCE CODE TAKEN FROM STANDARD CODING BOOK'  
END OF PRINT

PRINT OF EXPERIENCE-YRS

00100 ITEM  
00200 HELD-AS NUMERIC 2 CONTENTS  
00300 RANGE 01 TO 10  
00400 ELSE RANGE 01 TO 15  
00500 IF EMPLOYEE-DEPARTMENT EQ 180  
00600 ENTERED-AS NUMERIC-CHARACTER 2  
00700 REPORTED-AS PICTURE "99"  
07000 ALIAS LOW-LEVEL 'EMPYRS'  
08000 CATALOG 'EMPLOYEE', 'NUMERIC'  
09000 DESCRIPTION  
09100 'NUMBER OF YEARS EXPERIENCE'  
END OF PRINT

PRINT OF QUALIFICATIONS

00100 ITEM  
00200 HELD-AS CHARACTER 10  
00300 ENTERED-AS CHARACTER 10  
00400 REPORTED-AS PICTURE "X(10)"  
07000 ALIAS LOW-LEVEL 'EMPQUA'  
08000 CATALOG 'EMPLOYEE', 'DESCRIPTION'  
09000 DESCRIPTION  
09100 'QUALIFICATION OBTAINED AND DATE OF CERTIFICATE (SHOWN AS MM/YY)'  
END OF PRINT

PRINT OF SOCIAL-SECURITY-CODE

00100 ITEM  
00200 ENTERED-AS 1 ALPHANUMERIC 15  
00300 ENTERED-AS 2 CHARACTER 15  
00400 HELD-AS ALPHANUMERIC 15  
00500 REPORTED-AS PICTURE 'XXXBX(5)B999BXXXX'  
07000 ALIAS LOW-LEVEL 'EMPSSC'  
08000 CATALOG 'SALARY', 'CODE'  
09000 DESCRIPTION  
09100 'CURRENT EMPLOYEE SOCIAL SECURITY CODE'  
END OF PRINT

PRINT OF STANDARD-DATE

00100 ITEM  
00200 ENTERED-AS CHARACTER 8 CONTENTS FORMAT 'DD/MM/YY'  
00300 HELD-AS NUMERIC-CHARACTER 6  
00400 REPORTED-AS PICTURE '99X99X99' CONTENTS FORMAT 'DD/MM/YY'  
07000 ALIAS LOW-LEVEL 'STDATE'  
08000 CATALOG 'EMPLOYEE', 'DATE'  
09000 DESCRIPTION  
09100 'PERSONNEL STANDARD DATE FORMATS'  
END OF PRINT

PRINT OF TAX-CODE

00100 ITEM  
00200 HELD-AS NUMERIC 4 CONTENTS IS 538  
00300 ELSE IS 670  
00400 ELSE RANGE 1000 TO 6000  
00500 ENTERED-AS NUMERIC-CHARACTER 4

X700

00600 REPORTED-AS PICTURE '9999'  
07000 ALIAS LOW-LEVEL 'EMPTAX'  
08000 CATALOG 'SALARY', 'CODE'  
09000 DESCRIPTION  
09100 'EMPLOYEE TAX CODE SENT BY TAX OFFICE'  
10000 NOTE  
10100 'ACCURACY'  
10200 ' TAX CODE IS ONE MONTH OUT OF DATE'  
END OF PRINT

PRINT OF TRANSACTION  
00100 IDMS-AREA  
00200 PAGES 501 TO 600 OF TRANSACTION-FILE  
00300 BLOCK 1 TO 100  
END OF PRINT

PRINT OF TRANSACTION-CODE  
00100 ITEM  
00200 ENTERED-AS CHARACTER 2  
00300 HELD-AS NUMERIC 2 CONTENTS RANGE 10 TO 90  
00400 REPORTED-AS PICTURE '99'  
07000 ALIAS LOW-LEVEL 'EMPRANS'  
08000 CATALOG 'EMPLOYEE', 'CODE'  
09000 DESCRIPTION  
09100 'EMPLOYEE TRANSACTION CODE'  
END OF PRINT

PRINT OF TRANSACTION-DATA  
00100 ITEM  
00200 ENTERED-AS CHARACTER 40  
00300 HELD-AS CHARACTER 40  
00400 REPORTED-AS PICTURE 'X(40)'  
07000 ALIAS LOW-LEVEL 'EMPRADA'  
08000 CATALOG 'EMPLOYEE', 'DESCRIPTION', 'NUMERIC'  
09000 DESCRIPTION  
09100 'TRANSACTION DATA INPUT VIA V.D.U.'  
10000 NOTE  
10100 'INPUT FORM'  
10200 ' EMPLOYEE-TRANSACTIONS-FORM'  
10300 , ,  
10400 'ACCURACY'  
10500 ' PERSONNEL DEPARTMENT IS RESPONSIBLE'  
10600 ' FOR ENSURING THAT DATA IS COMPLETELY'  
10700 ' CORRECT'  
END OF PRINT

PRINT OF TRANSACTION-DATE  
00100 ITEM  
00200 ENTERED-AS NAME STANDARD-DATE  
00300 HELD-AS NAME STANDARD-DATE  
00400 REPORTED-AS NAME STANDARD-DATE  
07000 ALIAS LOW-LEVEL 'EMPDATE'  
08000 CATALOG 'EMPLOYEE', 'DATE'  
09000 DESCRIPTION  
09100 'EMPLOYEE TRANSACTION DATE'  
10000 NOTE  
10100 'ACCURACY'  
10200 ' DATE IS TAKEN FROM OPERATING SYSTEM'  
10300 ' SUPERVISOR AT THE TIME OF INPUT'  
END OF PRINT

PRINT OF TRANSACTION-RECORD  
00100 IDMS-RECORD  
00200 IDENTITY 300  
00300 STORED USING KEY TRANSACTION-CODE  
00400 DUPLICATES DISALLOWED  
00500 AREA TRANSACTION  
00600 CONTAINS TRANSACTION-CODE,  
00700 EMPLOYEE-CODE,  
00800 TRANSACTION-DATA,  
00900 TRANSACTION-DATE  
END OF PRINT

27 MEMBERS PROCESSED BY BULK PRINT

X700

00056 WHICH IDMS-RECORDS CONSTITUTE EMP-DB.

*Interrogation of IDMS members.*

THE FOLLOWING IDMS-RECORDS SATISFY THE GIVEN CRITERIA

IDMS-RECORD	DEPARTMENT-RECORD
IDMS-RECORD	EMPLOYEE-RECORD
IDMS-RECORD	TRANSACTION-RECORD

3 MEMBERS IN TOTAL

00057 REPORT EMPLOYEE-RECORD.

REPORT OF IDMS-RECORD EMPLOYEE-RECORD

EDITION 2 ENCODED BY ANALYST AT 16.56.43 ON 12 MAY 1980  
STATUS IDMS  
PROTECTION: NONE

THIS MEMBER IS DIRECTLY REFERRED TO 2 TIMES  
THIS MEMBER CONTAINS 9 DIRECT REFERENCES

IDMS-RECORD EMPLOYEE-RECORD

IDENTITY 100

STORED USING KEY EMPLOYEE-CODE DUPLICATES DISALLOWED

AREA EMPLOYEE FROM 131 TO 200

CONTAINS

ITEM	EMPLOYEE-CODE
GROUP	EMPLOYEE-IDENTIFICATION
ITEM	EMPLOYEE-DEPARTMENT
ITEM	EMPLOYEE-SALARY
GROUP	EDUCATION
ITEM	TAX-CODE
ITEM	SOCIAL-SECURITY-CODE

X700

00058 PRODUCE IDMS SUBSCHEMA FROM EMPSHEMA  
00059 AS EMPSCHEM NOGEN PRINT.

Produce IDMS.

DM02375W NOSEQ  
SUBSCHEMA IDENTIFICATION DIVISION.  
EMPSHEMA HAS BEEN SHORTENED TO EMPSHEMA  
DM02375W SUBSCHEMA NAME IS EMPSHEMA OF SCHEMA NAME EMPDB.  
EMP-DB HAS BEEN SHORTENED TO EMPDB  
DEVICE-MEDIA NAME IS EMPDCL OF SCHEMA NAME EMPDB.  
AUTHOR. ANALYST.  
DATE. 10/05/82.  
INSTALLATION. INSTALLATION NAME.  
SUBSCHEMA DATA DIVISION.  
AREA SECTION.  
COPY EMPLOYEE AREA  
PRIVACY LOCK FOR RETRIEVAL IS 'YES'.  
RECORD SECTION.  
COPY DEPARTMET-RECORD RECORD.  
DM02375W DEPARTMENT-RECORD HAS BEEN SHORTENED TO DEPARTMET-RECORD  
01 EMPLOYEE-RECORD  
VIEW-ID IS EMPVIEW  
PRIVACY LOCK FOR MODIFY IS 'NO'.  
02 EMPLOYEE-CODE.  
02 EMPLOYEE-SALARY.  
02 EMPLOYEE-DEPARTMENT.  
SET SECTION.  
COPY DEPARTMENT-SET SET.  
DM02217I EMPSCHEM SUCCESSFULLY GENERATED



**CHAPTER 9**

**DATAMANAGER/MARK-IV DEMONSTRATION (X750)**



<p><b>COMMANDS DEMONSTRATED</b></p> <p>STATUS "MKIV".          AUTHORITY "ANALYST".          LIST MARKIV-FILES.          REPORT MASTER-FILE.          KEEP WHAT CONSTITUTES MASTER-FILE.          LIST KEPT-DATA ALPHABETICALLY.          BULK PRINT KEPT-DATA ALPHABETICALLY.          WHICH MARKIV-SEGMENTS CONSTITUTE MASTER-FILE.          WHICH MEMBERS USE QUALIFICATION-COUNT VIA COUNT-FIELD.          PRODUCE MARK-IV FROM MASTER-FILE NOGEN PRINT          ALIAS LOW-LEVEL USING HELD-AS.</p>	<p><b>DESCRIPTION</b></p> <p>DATAMANAGER EXAMPLE DICTIONARY - MARK IV SUPPLEMENT</p> <p>To show the generation of MARK IV file definitions from the DATAMANAGER example dictionary from the MARK IV file MASTER-FILE.</p> <div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;">MASTER-FILE</p> <pre>             graph TD               EMPLOYEE-DATA[EMPLOYEE-DATA] --- EMPLOYEE-CODE[EMPLOYEE-CODE]               EMPLOYEE-CODE --- EMPLOYEE-IDENT[EMPLOYEE-IDENT]               EMPLOYEE-CODE --- EMPLOYEE-GENERAL[EMPLOYEE-GENERAL]               EMPLOYEE-IDENT --- EMPLOYEE-IDENTIFICATION[EMPLOYEE-IDENTIFICATION]               EMPLOYEE-IDENTIFICATION --- EMPLOYEE-QUALIFICATIONS[EMPLOYEE-QUALIFICATIONS]               EMPLOYEE-GENERAL --- SOCIAL-SECURITY-CODE[SOCIAL-SECURITY-CODE]               EMPLOYEE-GENERAL --- TAX-CODE[TAX-CODE]               EMPLOYEE-GENERAL --- EMPLOYEE-SALARY[EMPLOYEE-SALARY]               EMPLOYEE-GENERAL --- EMPLOYEE-DEPARTMENT[EMPLOYEE-DEPARTMENT]           </pre> </div>
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00118 STATUS "MKIV".  
 DM00096I NON-FROZEN STATUS MKIV RECOGNISED

00119 AUTHORITY "ANALYST".  
 DM01060I AUTHORITY RECOGNISED

00120 LIST MARKIV-FILES.

LIST OF MARKIV FILES

MEMBER NAME	TYPE	USAGE	CONDITION	AC	ALT	REM	OWNER
MASTER-FILE	MARKIV FILE	0	SCE ENC YES YES YES				
LIST CONTAINS	1 MARKIV FILE						

X750

00121 REPORT MASTER-FILE.

Report MASTER-FILE.

REPORT OF MARKIV FILE MASTER-FILE

EDITION 6 ENCODED BY MASTER AT 16.30.58 ON 21 JAN 1982  
STATUS MKIV  
PROTECTION: NONE

ALIAS  
LOW-LEVEL EMPMFILE

CATALOGUED AS  
MASTER  
DISC

DESCRIPTION  
THIS FILE STORES PERSONAL DETAILS OF EMPLOYEE

NOTE  
SECURITY  
AT THE END OF THE WEEKLY UPDATE RUN,  
DUMP THE FILE ON A TAPE

THIS MEMBER IS DIRECTLY REFERRED TO 0 TIMES  
THIS MEMBER CONTAINS 8 DIRECT REFERENCES

MARKIV FILE MASTER-FILE

GENERATION-CYCLE 3

RETENTION-PERIOD 1 MONTHS

ORGANISATION IS DIRECT  
BLOCKING IS FIXED  
BLOCK SIZE IS 205  
RECORD SIZE IS 1000  
LABELS ARE STANDARD-LABELS  
DEVICE DISK 2314

FORM HELD-AS  
CONTAINS EMPLOYEE-DATA  
EMPLOYEE-IDENT PARENT EMPLOYEE-DATA  
EMPLOYEE-QUALIFICATIONS PARENT EMPLOYEE-IDENT COUNT-FIELD QUALIFICATION-COUNT  
EMPLOYEE-GENERAL PARENT EMPLOYEE-DATA

X750

00122 KEEP WHAT CONSTITUTES MASTER-FILE.  
DM01541I 22 ENTRIES ADDED TO KEPT-DATA LIST

Produce a list of contained members

00123 LIST KEPT-DATA ALPHABETICALLY.

LIST OF SELECTED MEMBERS  
MEMBER NAME

MEMBER NAME	TYPE	USAGE	CONDITION	AC	ALT	REM	OWNER
COLLEGE-NAME	ITEM	2	SCE ENC	YES	YES	YES	
EDUCATION	GROUP	2	SCE ENC	YES	YES	YES	
EMPLOYEE-CODE	ITEM	6	SCE ENC	YES	YES		PERSONNEL
EMPLOYEE-DATA	MARKIV SEG	3	SCE ENC	YES	YES	YES	
EMPLOYEE-DEPARTMENT	ITEM	4	SCE ENC	YES	YES		PERSONNEL
EMPLOYEE-GENERAL	MARKIV SEG	1	SCE ENC	YES	YES	YES	
EMPLOYEE-IDENT	MARKIV SEG	2	SCE ENC	YES	YES	YES	
EMPLOYEE-IDENTIFICATION	GROUP	2	SCE ENC	YES	YES	YES	
EMPLOYEE-NAME	ITEM	3	SCE ENC	YES	YES		PERSONNEL
EMPLOYEE-QUALIFICATIONS	GROUP	1	SCE ENC	YES	YES	YES	
EMPLOYEE-SALARY	ITEM	3	SCE ENC	YES	YES		PERSONNEL
EMPLOYEE-STREET	ITEM	1	SCE ENC	YES	YES	YES	
EMPLOYEE-TELEPHONE	ITEM	1	SCE ENC	YES	YES	YES	
EMPLOYEE-TOWN	ITEM	1	SCE ENC	YES	YES	YES	
EMPLOYING-COMPANY	ITEM	1	SCE ENC	YES	YES	YES	
EXPERIENCE	GROUP	2	SCE ENC	YES	YES	YES	
EXPERIENCE-CODE	ITEM	1	SCE ENC	YES	YES	YES	
EXPERIENCE-YRS	ITEM	1	SCE ENC	YES	YES	YES	
QUALIFICATION-COUNT	ITEM	2	SCE ENC	YES	YES	YES	
QUALIFICATIONS	ITEM	1	SCE ENC	YES	YES	YES	
SOCIAL-SECURITY-CODE	ITEM	4	SCE ENC	YES	YES		PERSONNEL
TAX-CODE	ITEM	3	SCE ENC	YES	YES		PERSONNEL

LIST CONTAINS 15 ITEMS  
4 GROUPS  
3 MARKIV SEGMENTS  
22 MEMBERS IN TOTAL

00124 BULK PRINT KEPT-DATA ALPHABETICALLY.

... and a print of contained members.

PRINT OF COLLEGE-NAME  
00100 ITEM  
00200 HELD-AS CHARACTER 30  
00300 REPORTED-AS PICTURE "X(30)"  
00400 ENTERED-AS CHARACTER 30  
07000 ALIAS LOW-LEVEL 'EMPCOL'  
08000 CATALOG 'EMPLOYEE', 'DESCRIPTION'  
09000 DESCRIPTION  
09100 'NAME OF COLLEGE/FACULTY'  
END OF PRINT

PRINT OF EDUCATION  
00100 GROUP  
00150 HELD-AS  
00200 CONTAINS COLLEGE-NAME,  
00300 QUALIFICATIONS  
07000 ALIAS LOW-LEVEL 'EMPEDU'  
09000 DESCRIPTION  
09100 'EDUCATION RECEIVED BY EMPLOYEE INCLUDING PROFESSIONAL TRAINING'  
10000 NOTE  
10100 'ACCURACY'  
10200 ' ALL COLLEGE CERTIFICATES CHECKED'  
10300 ' AND REFERENCES OBTAINED'  
END OF PRINT

PRINT OF EMPLOYEE-CODE  
00100 ITEM  
00200 ENTERED-AS ALPHANUMERIC 4  
00300 HELD-AS NUMERIC 4 CONTENTS RANGE 1000 TO 8000  
00400 REPORTED-AS PICTURE '9999'  
00410 HEADINGS 'EMPLOYEE', 'CODE'  
07000 ALIAS LOW-LEVEL 'EMPCODE'  
08000 CATALOG 'EMPLOYEE', 'CODE'  
09000 DESCRIPTION  
09100 'STANDARD EMPLOYEE CODE'  
10000 NOTE  
10100 'INPUT FORM'  
10200 ' EMPLOYEE-TRANSACTIONS-FORM'  
END OF PRINT

PRINT OF EMPLOYEE-DATA  
00100 MARK-IV-SEGMENT  
00200 HELD-AS  
00300 CONTAINS EMPLOYEE-CODE  
00400 KEY EMPLOYEE-CODE ASCENDING  
07000 ALIAS LOW-LEVEL 'EMPHISDT'  
09000 DESCRIPTION  
09100 'EMPLOYEE DATA'  
END OF PRINT

PRINT OF EMPLOYEE-DEPARTMENT

X750

00100 ITEM  
00200 HELD-AS NUMERIC-CHARACTER 3 CONTENTS  
00300 RANGE 100 TO 150  
00400 ELSE IS 180  
00500 ELSE RANGE 200 TO 400  
00600 REPORTED-AS PICTURE '999'  
00610 HEADINGS 'EMPLOYEE', 'DEPT.'  
00700 ENTERED-AS NUMERIC-CHARACTER 3  
07000 ALIAS LOW-LEVEL 'EMPDEPT'  
08000 CATALOG 'EMPLOYEE', 'CODE'  
09000 DESCRIPTION  
09100 'EMPLOYEE DEPARTMENT CODE'  
END OF PRINT

00100 PRINT OF EMPLOYEE-GENERAL  
00200 MARK-IV-SEGMENT  
00300 HELD-AS  
00400 CONTAINS SOCIAL-SECURITY-CODE,  
00500 TAX-CODE,  
00600 EMPLOYEE-SALARY,  
00700 EMPLOYEE-DEPARTMENT  
07000 KEY SOCIAL-SECURITY-CODE  
ALIAS LOW-LEVEL 'EMPGEN'  
END OF PRINT

00100 PRINT OF EMPLOYEE-IDENT  
00200 MARK-IV-SEGMENT  
00300 HELD-AS  
00400 CONTAINS EMPLOYEE-IDENTIFICATION,  
00500 QUALIFICATION-COUNT  
07000 KEY EMPLOYEE-NAME  
ALIAS LOW-LEVEL 'EMPID'  
END OF PRINT

00100 PRINT OF EMPLOYEE-IDENTIFICATION  
00150 GROUP  
00200 HELD-AS  
00300 CONTAINS EMPLOYEE-NAME,  
00400 EMPLOYEE-STREET,  
00500 EMPLOYEE-TOWN,  
00600 EMPLOYEE-TELEPHONE  
07000 ALIAS LOW-LEVEL 'EMPIDEN'  
09000 DESCRIPTION  
09100 'NAME, ADDRESS AND TELEPHONE NUMBER OF AN EMPLOYEE'  
10000 NOTE  
10100 'ACCURACY'  
10200 'NAME CHECKED AGAINST BIRTH CERTIFICATE'  
10300 'ADDRESS AND TELEPHONE NUMBER NOT CHECKED'  
END OF PRINT

00100 PRINT OF EMPLOYEE-NAME  
00200 ITEM  
00300 HELD-AS CHARACTER 30  
00400 REPORTED-AS PICTURE 'X(10)B(5)X(10)B(3)X(10)'  
00500 ENTERED-AS CHARACTER 30  
07000 ALIAS LOW-LEVEL 'EMPNAME'  
08000 CATALOG 'EMPLOYEE', 'DESCRIPTION'  
09000 DESCRIPTION  
09100 'EMPLOYEE SURNAME, FIRST NAME AND MIDDLE NAME'  
END OF PRINT

00100 PRINT OF EMPLOYEE-QUALIFICATIONS  
00200 GROUP  
00300 HELD-AS  
00400 CONTAINS EDUCATION, EXPERIENCE  
00500 KEY COLLEGE-NAME  
07000 ALIAS LOW-LEVEL 'EMPQUAL'  
END OF PRINT

00100 PRINT OF EMPLOYEE-SALARY  
00200 ITEM  
00300 HELD-AS NUMERIC 5 CONTENTS RANGE 10000 TO 50000  
00400 REPORTED-AS PICTURE '£B99,999'  
00500 HEADINGS 'SALARY', '(IN £)'  
07000 ALIAS LOW-LEVEL 'EMPSAL'  
08000 CATALOG 'SALARY', 'NUMERIC'  
09000 DESCRIPTION  
09100 'YEARLY SALARY. INCLUDES GEOGRAPHICAL ALLOWANCES'  
END OF PRINT

00100 PRINT OF EMPLOYEE-STREET  
00200 ITEM  
00300 HELD-AS CHARACTER 40  
00400 REPORTED-AS PICTURE "X(40)"  
00500 ENTERED-AS CHARACTER 40  
07000 ALIAS LOW-LEVEL 'EMPSTR'  
08000 CATALOG 'EMPLOYEE', 'DESCRIPTION'  
09000 DESCRIPTION

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09100 'EMPLOYEE STREET NAME INCLUDING ANY APARTMENT NUMBER'  
END OF PRINT

PRINT OF EMPLOYEE-TELEPHONE

00100 ITEM  
00200 HELD-AS NUMERIC 10  
00300 REPORTED-AS PICTURE '9998899989999'  
00400 ENTERED-AS NUMERIC-CHARACTER 10  
07000 ALIAS LOW-LEVEL 'EMPTLNO'  
08000 CATALOG 'EMPLOYEE', 'DESCRIPTION'  
09000 DESCRIPTION  
09100 'EMPLOYEE TELEPHONE NUMBER INCLUDING CODE'  
END OF PRINT

PRINT OF EMPLOYEE-TOWN

00100 ITEM  
00200 HELD-AS CHARACTER 20  
00300 ENTERED-AS CHARACTER 20  
00400 REPORTED-AS PICTURE "X(20)"  
07000 ALIAS LOW-LEVEL 'EMPTOWN'  
08000 CATALOG 'EMPLOYEE', 'DESCRIPTION'  
09000 DESCRIPTION  
09100 'EMPLOYEE HOME TOWN NAME AND POST CODE'  
END OF PRINT

PRINT OF EMPLOYING-COMPANY

00100 ITEM  
00200 ENTERED-AS CHARACTER 30  
00300 HELD-AS CHARACTER 30  
00400 REPORTED-AS PICTURE "X(30)"  
07000 ALIAS LOW-LEVEL 'EMPMP'  
08000 CATALOG 'EMPLOYEE', 'DESCRIPTION'  
09000 DESCRIPTION  
09100 'NAME OF OUTSIDE COMPANY OR INTERNAL DEPARTMENT OF THIS ORGANISATION'  
END OF PRINT

PRINT OF EXPERIENCE

00100 GROUP  
00150 HELD-AS  
00200 CONTAINS EMPLOYING-COMPANY,  
00300 EXPERIENCE-CODE,  
00400 EXPERIENCE-YRS  
07000 ALIAS LOW-LEVEL 'EMPEXP'  
09000 DESCRIPTION  
09100 'EXPERIENCE GAINED (INCLUDING EXPERIENCE GAINED WITHIN THIS ORGANISATION)'  
10000 NOTE  
10100 'ACCURACY'  
10200 ' REFERENCES OBTAINED FROM LAST TWO'  
10300 ' EMPLOYING ORGANISATIONS'  
END OF PRINT

PRINT OF EXPERIENCE-CODE

00100 ITEM  
00200 HELD-AS NUMERIC 2 CONTENTS RANGE 01 TO 99  
00300 ENTERED-AS NUMERIC-CHARACTER 2  
00400 REPORTED-AS PICTURE "99"  
07000 ALIAS LOW-LEVEL 'EMPOST'  
08000 CATALOG 'EMPLOYEE', 'CODE'  
09000 DESCRIPTION  
09100 'EXPERIENCE CODE TAKEN FROM STANDARD CODING BOOK'  
END OF PRINT

PRINT OF EXPERIENCE-YRS

00100 ITEM  
00200 HELD-AS NUMERIC 2 CONTENTS  
00300 RANGE 01 TO 10  
00400 ELSE RANGE 01 TO 15  
00500 IF EMPLOYEE-DEPARTMENT EQ 180  
00600 ENTERED-AS NUMERIC-CHARACTER 2  
00700 REPORTED-AS PICTURE "99"  
07000 ALIAS LOW-LEVEL 'EMPYRS'  
08000 CATALOG 'EMPLOYEE', 'NUMERIC'  
09000 DESCRIPTION  
09100 'NUMBER OF YEARS EXPERIENCE'  
END OF PRINT

PRINT OF QUALIFICATION-COUNT

00100 ITEM  
00200 HELD-AS BINARY 4  
END OF PRINT

PRINT OF QUALIFICATIONS

00100 ITEM  
00200 HELD-AS CHARACTER 10  
00300 ENTERED-AS CHARACTER 10  
00400 REPORTED-AS PICTURE "X(10)"  
07000 ALIAS LOW-LEVEL 'EMPQUA'

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08000 CATALOG 'EMPLOYEE', 'DESCRIPTION'  
09000 DESCRIPTION  
09100 'QUALIFICATION OBTAINED AND DATE OF CERTIFICATE (SHOWN AS MM/YY)'

END OF PRINT

PRINT OF SOCIAL-SECURITY-CODE  
00100 ITEM  
00200 ENTERED-AS 1 ALPHANUMERIC 15  
00300 ENTERED-AS 2 CHARACTER 15  
00400 HELD-AS ALPHANUMERIC 15  
00500 REPORTED-AS PICTURE 'XXXBX(5)B999BXXXX'  
07000 ALIAS LOW-LEVEL 'EMPSSC'  
08000 CATALOG 'SALARY', 'CODE'  
09000 DESCRIPTION  
09100 'CURRENT EMPLOYEE SOCIAL SECURITY CODE'  
END OF PRINT

PRINT OF TAX-CODE  
00100 ITEM  
00200 HELD-AS NUMERIC 4 CONTENTS IS 538  
00300 ELSE IS 670  
00400 ELSE RANGE 1000 TO 6000  
00500 ENTERED-AS NUMERIC-CHARACTER 4  
00600 REPORTED-AS PICTURE '9999'  
07000 ALIAS LOW-LEVEL 'EMPTAX'  
08000 CATALOG 'SALARY', 'CODE'  
09000 DESCRIPTION  
09100 'EMPLOYEE TAX CODE SENT BY TAX OFFICE'  
10000 NOTE  
10100 'ACCURACY'  
10200 ' TAX CODE IS ONE MONTH OUT OF DATE'  
END OF PRINT

22 MEMBERS PROCESSED BY BULK PRINT

00125 WHICH MARKIV-SEGMENTS CONSTITUTE MASTER-FILE.

*Interrogation of MARK IV members.*

THE FOLLOWING MARKIV SEGMENTS SATISFY THE GIVEN CRITERIA

MARKIV SEGMENT	EMPLOYEE-DATA
MARKIV SEGMENT	EMPLOYEE-IDENT
MARKIV SEGMENT	EMPLOYEE-GENERAL

3 MEMBERS IN TOTAL

00126 WHICH MEMBERS USE QUALIFICATION-COUNT VIA COUNT-FIELD.

THE FOLLOWING SELECTED MEMBERS SATISFY THE GIVEN CRITERIA

MARKIV FILE	MASTER-FILE
-------------	-------------

1 MEMBER IN TOTAL

X750

00127 PRODUCE MARK-IV FROM MASTER-FILE NOGEN PRINT  
00128 ALIAS LOW-LEVEL USING HELD-AS.

Produce MARK IV file definitions.

```

EMPFILERC #
EMPFILEFDEMPFILEY
EMPFILEFDEMPFILE BK 205
EMPFILESEMPTSDT 1 A
EMPFILELOEMPCODE 11 1 421 0
EMPFILE1EMPCODE EMPLOYEE#
EMPFILE2EMPCODE CODE #
EMPFILESEMPID 2
EMPFILEOEMPIDEN 22 1100C
EMPFILEOEMPNAME 22 1 30C1
EMPFILEOEMPSTR 22 31 40C
EMPFILEOEMPTOWN 22 71 20C
EMPFILEOEMPTELNO 22 91 10Z 0
DMO2273W QUALOUNT MEMBER NAME USED INSTEAD OF REQUESTED ALIAS
DMO2275W QUALIFICATION-COUNT HAS BEEN SHORTENED TO QUALOUNT
EMPFILELOQUALOUNT 22 101 2F 0 3
EMPFILESEMPOUAL 3
EMPFILEOEMPEDU 33 1 40C
EMPFILEOEMPCOL 33 1 30C1
EMPFILEOEMPQUA 33 31 10C
EMPFILEOEMPEXP 33 41 34C
EMPFILEOEMPEMP 33 41 30C
EMPFILEOEMPPOST 33 71 2Z 0
EMPFILEOEMPYRS 33 73 2Z 0
EMPFILESEMPGEN 4
EMPFILEOEMPSSC 42 1 15C1
EMPFILEOEMPTAX 42 16 4Z 0
EMPFILEOEMPSAL 42 20 5Z 0 £
EMPFILE1EMPSAL SALARY#
EMPFILE2EMPSAL (IN £)#
EMPFILEOEMPDEPT 42 25 3Z 0
EMPFILE1EMPDEPT EMPLOYEE#
EMPFILE2EMPDEPT DEPT. #
DMO2217I MASTER-FILE SUCCESSFULLY GENERATED

```



**CHAPTER 10**

**DATAMANAGER USER INTERFACE DEMONSTRATION (X790)**



**COMMANDS DEMONSTRATED**

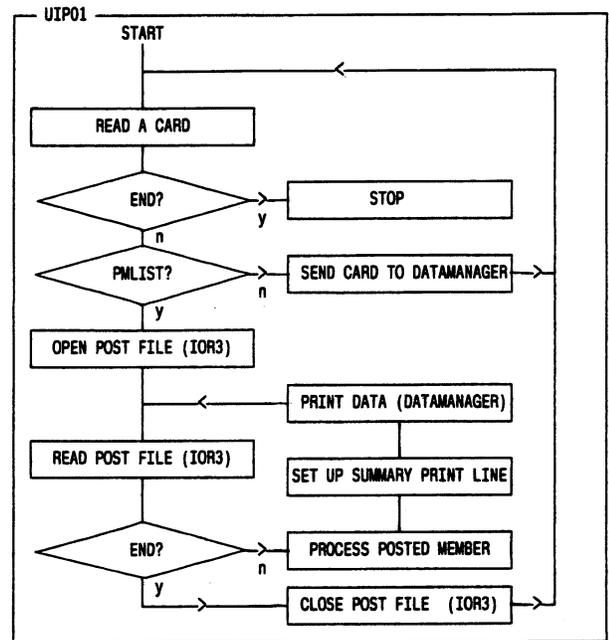
AUTHORITY "PROG".  
 STATUS "CONV".  
 KEEP AND LIST PROGRAMS, MODULES ALPHABETICALLY.  
 POST ONTO POSTF.  
 POST GLOSSARY KEPT-DATA GIVING NOTES.  
 POST ONTO END.  
 PMLIST.  
 STATUS "UI".  
 PRINT UIP01.  
 PRINT IOR3.

**DESCRIPTION**

DATAMANAGER EXAMPLE DICTIONARY - USER INTERFACE SUPPLEMENT

The Personnel Manager has requested the Programmer to produce a system software Development Summary in tabular form to show the names of analysts/programmers responsible for each program/module together with development and amendment dates.

This demonstration shows sample output produced using the developed User Interface program, UIP01, together with the complete source coding.



UIP01 is intended for simple demonstration only.

- 00131 AUTHORITY "PROG".  
DM01060I AUTHORITY RECOGNISED
- 00132 STATUS "CONV".  
DM00096I NON-FROZEN STATUS CONV RECOGNISED
- 00133 KEEP AND LIST PROGRAMS, MODULES ALPHABETICALLY.

LIST OF SELECTED MEMBERS

MEMBER NAME	TYPE	USAGE	CONDITION	AC	ALT	REM	OWNER
P1I01	MODULE	1	SCE ENC	YES	YES	YES	YES
P1P01	PROGRAM	1	SCE ENC	YES	YES	YES	YES
P1S01	PROGRAM	1	SCE ENC	YES	YES	YES	YES
P1U01	PROGRAM	1	SCE ENC	YES	YES	YES	YES
P1U02	MODULE	2	SCE ENC	YES	YES	YES	YES
P1V01	PROGRAM	1	SCE ENC	YES	YES	YES	YES
P2P01	PROGRAM	1	SCE ENC	YES	YES	YES	YES
P2U01	PROGRAM	1	SCE ENC	YES	YES	YES	YES

LIST CONTAINS 2 MODULES  
 6 PROGRAMS  
 8 MEMBERS IN TOTAL

DM01541I 8 ENTRIES ADDED TO KEPT-DATA LIST

*Here is the DATAMANAGER list of programs and modules in the personnel conventional file systems. Note the use of KEEP AND LIST for the kept-data list to be generated and stored in parallel with processing the LIST command. Now ...*

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00134 POST ONTO POSTF.  
 DM00100I POST/MAIL DESTINATION ACCEPTED

00135 POST GLOSSARY KEPT-DATA GIVING NOTES.  
 DM00099I POST/MAIL COMMAND SUCCESSFULLY COMPLETED

00136 POST ONTO END.  
 DM00100I POST/MAIL DESTINATION ACCEPTED

PMLIST.

*open the post/mail file POSTF,*

*post a glossary of programs/modules giving notes,*

*and then close POSTF.*

*Now process the posted glossary (using UIP01) and print the Software Summary (using DATAMANAGER).*

\* SYSTEMS SOFTWARE DEVELOPMENT SUMMARY \*

MEMBER NAME	MEMBER TYPE	ANALYST	PROGRAMMER	DATE DEVELOPED	LAST AMENDMENT
P1I01	MODULE			MARCH 1979	
P1P01	PROGRAM			APRIL 1979	
P1S01	PROGRAM			MARCH 1979	
P1U01	PROGRAM			MARCH 1979	28 AUGUST 1979
P1U02	MODULE			APRIL 1979	
P1V01	PROGRAM			FEBRUARY 1979	15 AUGUST 1979
P2P01	PROGRAM			*****	
P2U01	PROGRAM			MAY 1979	

X790

00153  
DM00096I

STATUS "UI".  
NON-FROZEN STATUS UI RECOGNISED

00154

PRINT UIPO1.

In status UI we have source prints  
of UIPO1 (COBOL) and IOR3 (BAL).

Here is UIPO1 in COBOL (DOS VS).

```

PRINT OF UIPO1
00100 IDENTIFICATION DIVISION.
00200 PROGRAM-ID.      UIPO1.
00300 ENVIRONMENT DIVISION.
00400 INPUT-OUTPUT SECTION.
00500 FILE-CONTROL.
00600     SELECT CARDS ASSIGN TO SYS006-UR-2540R-S-DMIN
00700     ACCESS MODE IS SEQUENTIAL.
00800 DATA DIVISION.
00900 FILE SECTION.
01000 FD CARDS
01100     LABEL RECORDS ARE OMITTED
01200     DATA RECORD IS CARDIM.
01300 01 CARDIM PIC X(80).
01400 WORKING-STORAGE SECTION.
01500 77 P1 PIC 99 COMP.
01600 77 P2 PIC 99 COMP.
01700 77 P3 PIC 99 COMP.
01800 01 DCONTROL. COPY DCONTCOB.
01900 02 DINPUT PIC X.
02000 01 DOUTPUT PIC X.
02100 01 DDYNAMIC.
02200 02 DDYNAMLN PIC S9(8) COMP SYNC.
02300 02 DDYNAMVA PIC X.
02400 01 PVREC.
02500 02 RECL PIC S9999 COMP SYNC.
02600 02 FILLER PIC X(2).
02700 02 FILLER PIC X.
02800 02 LTEXT PIC X(28).
02900 02 FILLER REDEFINES LTEXT.
03000 03 OFF1 PIC X(2).
03100 03 MTYPE PIC X(26).
03200 02 FILLER REDEFINES LTEXT.
03300 03 OFF2 PIC X(4).
03400 03 NSTR PIC X(24).
03500 02 FILLER REDEFINES LTEXT.
03600 03 OFF3 PIC X(6).
03700 03 LDATA PIC X(22).
03800 02 FILLER REDEFINES LTEXT.
03900 03 CHAR OCCURS 28 TIMES PIC X.
04000 02 FILLER PIC X(232).
04100 01 PMLIST-HEADER.
04200 02 FILLER PIC X(40) VALUE
04300     "MEMBER NAME" MEMBER TYPE
04400 02 FILLER PIC X(40) VALUE
04500     "ANALYST" PROGRAMMER
04600 02 FILLER PIC X(40) VALUE
04700     "DATE DEVELOPED" LAST AMENDMENT
04800 01 TEXT-CALL.
04900 02 FILLER PIC X(6) VALUE "TEXT ".
05000 02 FILLER PIC X(5) VALUE SPACE.
05100 02 REPORT-LINE.
05200 03 LINE-ENTRY PIC X(20) OCCURS 6 TIMES.
05300 02 FILLER PIC XX VALUE " ".
05400 PROCEDURE DIVISION.
05500 MOVE LOW-VALUES TO DCONTROL.
05600 MOVE "DM00" TO DDMR.
05700 MOVE 1 TO DOPTION1 DOPTION3 DOPTION8 DFUNC.
05800 MOVE 0 TO DBUFFLEN DOUTLEN DDYNAMLN.
05900 OPEN INPUT CARDS.
06000 NEXT-CARD.
06100 READ CARDS AT END CLOSE CARDS STOP RUN.
06200 IF CARDIM IS EQUAL TO "PMLIST." GO TO DMR-UI.
06300 MOVE 3 TO DOPTION2.
06400 PERFORM CALLODMR.
06500 IF CARDIM IS EQUAL TO "END." CLOSE CARDS STOP RUN.
06600 GO TO NEXT-CARD.
06700 DMR-UI.
06800 MOVE ZERO TO DOPTION2, MOVE 1 TO P2.
06900 MOVE CARDIM TO REPORT-LINE.
07000 MOVE "SKIP." TO CARDIM PERFORM CALLODMR.
07100 PERFORM CALLTEXT.
07200 MOVE "SPACE 3." TO CARDIM PERFORM CALLODMR.
07300 MOVE " * SYSTEMS SOFTWARE D" TO LINE-ENTRY (3).
07400 MOVE "EVELOPMENT SUMMARY " TO LINE-ENTRY (4).
07500 PERFORM CALLTEXT.
07600 MOVE "SPACE 2." TO CARDIM PERFORM CALLODMR.
07700 MOVE PMLIST-HEADER TO REPORT-LINE.
07800 PL1.
07900 MOVE ZERO TO RECL, CALL "IOR3" USING PVREC.
08000 IF RECL IS LESS THAN 5 MOVE 1 TO RECL CALL "IOR3" USING PVREC
08100     MOVE "SKIP." TO CARDIM PERFORM CALLODMR GO TO NEXT-CARD.
08200 PERFORM BLANKS VARYING P1 FROM 28 BY -1
08300     UNTIL P1 IS LESS THAN (RECL - 4).
08400 IF OFF1 IS EQUAL TO SPACE GO TO PL1 PL2 PL3 PL4
08500     DEPENDING ON P2.
08600 IF OFF3 IS EQUAL TO "GLOSSA" MOVE 1 TO P2
08700     PERFORM CALLTEXT GO TO PL1.
08800 PERFORM CALLTEXT, MOVE LTEXT TO LINE-ENTRY (1)

```

DATAMANAGER Control Block. DINPUT  
and DOUTPUT areas are not required.

POSTF record returned by IOR3. MSP  
supply standard DATAMANAGER post  
output record layouts for copying  
into the User Interface program.

DATAMANAGER initialisation.

Select DATAMANAGER printer output  
input from user defined buffer. The  
output buffer is not used.

Normal DATAMANAGER input/output.  
Input line print is required.

PMLIST processing. Generated  
input line print is not required.  
Note that DATAMANAGER SKIP, SPACE  
and TEXT commands are used to print  
the output.

X790

```

08900          MOVE ***** TO LINE-ENTRY (5), MOVE 2 TO P2 GO TO PL1.
09000
09100          PL2. MOVE MTYPE TO LINE-ENTRY (2) MOVE 3 TO P2 GO TO PL1.
09200
09300          PL3. IF OFF2 IS NOT EQUAL TO SPACE GO TO PL1.
09400             IF NSTR IS EQUAL TO "ANALYST"
09500                MOVE 4 TO P2 MOVE 3 TO P3 GO TO PL1.
09600             IF NSTR IS EQUAL TO "PROGRAMMER"
09700                MOVE 4 TO P2 MOVE 4 TO P3 GO TO PL1.
09800             IF NSTR IS EQUAL TO "DATES DEVELOPED"
09900                MOVE 4 TO P2 MOVE 5 TO P3 GO TO PL1.
10000             IF NSTR IS EQUAL TO "DATE LAST AMENDED"
10100                MOVE 4 TO P2 MOVE 6 TO P3 GO TO PL1.
10200                MOVE 3 TO P2 GO TO PL1.
10300
10400          PL4. MOVE LDATA TO LINE-ENTRY (P3) MOVE 3 TO P2 GO TO PL1.
10500          BLANKS.
10600             MOVE SPACE TO CHAR (P1).
10700          CALLDMR.
10800             MOVE 80 TO DINPLREC DINPLEN.
10900             CALL "DMRUS" USING DCONTROL DOUTPUT DDYNAMIC CARDIM.
11000             IF (DRETURN2 IS EQUAL TO 3) OR
11100                (DSEVRITY IS EQUAL TO "S" OR "C" OR "E")
11200                DISPLAY "DATAMANAGER DETECTED ERROR" UPON SYSLST
11300                STOP RUN.
11400          CALLTEXT.
11500             MOVE 133 TO DINPLREC DINPLEN.
11600             CALL "DMRUS" USING DCONTROL DOUTPUT DDYNAMIC TEXT-CALL.
11700             MOVE SPACE TO REPORT-LINE.

```

END OF PRINT

00155 PRINT IOR3.

Here is IOR3, the post file input module coded in DOS VSE Assembler.

```

00100          PRINT OF IOR3
00200          IOR3 CSECT
00300             TITLE 'POSTF INPUT MODULE'
00400             STM 14,12,12(13)          SAVE REGS
00500             USING IOR3,10
00600             LR 10,15                  MODULE BASE
00700             LR 3,13
00800             LA 13,SAVE                SAVE AREA
00900             ST 3,4(13)                CHAIN BACK
01000             ST 13,8(3)               CHAIN FORWARD.
01100             L 2,0(1)                  RECORD AREA.
01200             * 3156/600 VARIABLE BLOCKED SYS010 INPUT
01300             OC 0(2,2),0(2)           CLOSE REQUIRED.
01400             BNZ EOF                  YES-BRANCH
01500          REOPEN NOP NOOPEN          SKIP OPEN 2ND TIME
01600             OI *-3,240
01700             OPEN POSTF
01800          NOOPEN EQU *
01900             GET POSTF,(2)            GET NEXT RECORD
02000          RETURN EQU *
02100             L 13,4(13)               PREVIOUS SAVE AREA.
02200             LM 14,12,12(13)          RESET REGS.
02300             BR 14                    RETURN
02400             SPACE 2
02500          EOF EQU *
02600             CLOSE POSTF
02700             XC 0(2,2),0(2)           INDIC EOF
02800             NI REOPEN+1,15          RE-OPEN ON NEXT READ.
02900             B RETURN
03000          LTORG
03100          SAVE DS 18A(0)
03200             SPACE 2
03300          POSTF DTFSDBLKSIZE=3156,EOFADDR=EOF,IOAREA1=IN1,IOAREA2=IN2,
03400             DEVADDR=SYS010,DEVICE=2314,WORKA=YES,RECSIZE=600,
03500             RECFORM=VARBLK
03600             SPACE 2
03700             SPACE 2
03800          IN1 DS CL3156
03900          IN2 DS CL3156
          END
          END OF PRINT

```

CHAPTER 11

DATAMANAGER CHANGE DEMONSTRATION (X900)



COMMANDS DEMONSTRATED	DESCRIPTION
STATUS "CONV". COPY EMPLOYEE-SALARY TO EMPLOYEE-SALARY-HISTORY. MODIFY EMPLOYEE-SALARY-HISTORY. 10 OBSOLETE-DEFINITION 20 NOTE 30 'THIS DEFINITION WAS CURRENT FROM 1979 -1980' 40 SEE EMPLOYEE-SALARY 50 ARCHIVE  KEEP AND LIST EXCEPT FILES WHEN ANY EQ 'EMP'. DROP LIST KEPT-DATA GROUPS. LIST KEPT-DATA. MODIFY EMPLOYEE-SALARY-HISTORY. LOCATE 'OBSOLETE-DEFINITION' LINE ITEM LOCATE 'ARCHIVE' DELETE LINE LOCATE NEXT 'ITEM' DELETE LINE  REMOVE EMPLOYEE-SALARY-HISTORY. PRINT P1-ERS-NEW-MEMBERS. PERFORM COMMAND-STREAM P1-ERS-NEW-MEMBERS MEMBER P1-ERS. PRODUCE COBOL FROM P1U02MEMP NOGEN PRINT USING HELD-AS VERSION 2 ALIAS COBOL. SWITCH OFF MESSAGES. PRODUCE COBOL FROM P1U02MEMP NOGEN PRINT USING HELD-AS VERSION 2 ALIAS COBOL. SWITCH ON MESSAGES. SWITCH ON NAME-CONCATENATION SELECT NAME,ALIAS LOW-LEVEL. LIST ONLY "TRANSACTION". SWITCH OFF NAME.	To show newly released general-usage features of DATAMANAGER Release 4.0 and 4.1.  New database and MARKIV related features of DATAMANAGER Releases 4.0 and 4.1 are shown in Demonstrations X400 to X750.  Examples of new clauses and selections for the GLOSSARY and WHICH commands are given in Demonstration X360.  The reader is assumed to be an experienced DATAMANAGER user.

00158 STATUS "CONV".  
 DM00096I NON-FROZEN STATUS CONV RECOGNISED  
  
 00159 COPY EMPLOYEE-SALARY TO EMPLOYEE-SALARY-HISTORY.  
 DM01632I COPY SUCCESSFULLY COMPLETED  
  
 00160 MODIFY EMPLOYEE-SALARY-HISTORY.  
 00161 10 OBSOLETE-DEFINITION  
 00162 20 NOTE  
 00163 30 'THIS DEFINITION WAS CURRENT FROM 1979 -1980'  
 00164 40 SEE EMPLOYEE-SALARY  
 00165 50 ARCHIVE  
 00166  
  
 DM01180I ALTERATION HAS CREATED NEW SOURCE RECORD  
 DM01296I ENCODING OF EMPLOYEE-SALARY-HISTORY  
 OBSOLETE-DEFINITION  
 00010 NOTE  
 00020 'THIS DEFINITION WAS CURRENT FROM 1979 -1980'  
 00030 SEE EMPLOYEE-SALARY  
 00040 ARCHIVE  
 00050 ITEM  
 00100 HELD-AS NUMERIC 5 CONTENTS RANGE 10000 TO 50000  
 00200 REPORTED-AS PICTURE '£B99,999'  
 00300 ENTERED-AS NUMERIC 5  
 00400 ALIAS LOW-LEVEL 'EMPSAL'  
 07000 CATALOG 'SALARY', 'NUMERIC'  
 08000 DESCRIPTION  
 09000 'YEARLY SALARY. INCLUDES GEOGRAPHICAL ALLOWANCES'  
 09100 EMPLOYEE-SALARY-HISTORY SUCCESSFULLY ENCODED  
  
 DM01280I

*The new member definition, OBSOLETE-DEFINITION, enables definitions of obsolete members that are retained in the dictionary to be made invisible to the user during dictionary documentation and interrogation (unless specified in member type clauses). Let us modify a copy of an existing definition to make it an OBSOLETE-DEFINITION*

00167 KEEP AND LIST EXCEPT FILES WHEN ANY EQ 'EMP'.

... then show that the obsolete member, EMPLOYEE-SALARY-HISTORY, is not included in a KEPT-DATA list. Note how the new EXCEPT clause

LIST OF MEMBERS MEMBER NAME	TYPE	USAGE	CONDITION	AC	ALT	REM	OWNER
EMPLOYEE-AFTER-UPDATE	ITEM	1	SCE ENC	YES	YES	YES	
EMPLOYEE-BEFORE-UPDATE	ITEM	2	SCE ENC	YES	YES	YES	
EMPLOYEE-CODE	ITEM	8	SCE ENC	YES			PERSONNEL
EMPLOYEE-DATA	GROUP	1	SCE ENC	YES	YES	YES	
EMPLOYEE-DEPARTMENT	ITEM	4	SCE ENC	YES			PERSONNEL
EMPLOYEE-IDENTIFICATION	GROUP	1	SCE ENC	YES	YES	YES	
EMPLOYEE-LEAVERS	ITEM	1	SCE ENC	YES	YES	YES	
EMPLOYEE-MASTER-RECORD	GROUP	1	SCE ENC	YES	YES	YES	
EMPLOYEE-NAME	ITEM	2	SCE ENC	YES			PERSONNEL
EMPLOYEE-NEWCOMERS	ITEM	2	SCE ENC	YES	YES	YES	
EMPLOYEE-REPORT-DATA	GROUP	1	SCE ENC	YES	YES	YES	
EMPLOYEE-REPORT-HEADER	GROUP	3	SCE ENC	YES	YES	YES	
EMPLOYEE-SALARY	ITEM	3	SCE ENC	YES			PERSONNEL
EMPLOYEE-STREET	ITEM	1	SCE ENC	YES	YES	YES	
EMPLOYEE-TELEPHONE	ITEM	1	SCE ENC	YES	YES	YES	
EMPLOYEE-TOWN	ITEM	1	SCE ENC	YES	YES	YES	
EMPLOYEE-TRANSACTIONS-FORM	GROUP	2	SCE ENC	YES	YES	YES	
EMPLOYING-COMPANY	ITEM	1	SCE ENC	YES	YES	YES	

LIST CONTAINS 12 ITEMS  
6 GROUPS  
18 MEMBERS IN TOTAL

DM01541I 18 ENTRIES ADDED TO KEPT-DATA LIST

00168 DROP LIST KEPT-DATA GROUPS.  
DM01543I 6 ENTRIES DROPPED FROM KEPT-DATA LIST

... and the new DROP command allow increased selectivity.

00169 LIST KEPT-DATA.

LIST OF SELECTED MEMBERS MEMBER NAME	TYPE	USAGE	CONDITION	AC	ALT	REM	OWNER
EMPLOYEE-AFTER-UPDATE	ITEM	1	SCE ENC	YES	YES	YES	
EMPLOYEE-BEFORE-UPDATE	ITEM	2	SCE ENC	YES	YES	YES	
EMPLOYEE-CODE	ITEM	8	SCE ENC	YES			PERSONNEL
EMPLOYEE-DEPARTMENT	ITEM	4	SCE ENC	YES			PERSONNEL
EMPLOYEE-LEAVERS	ITEM	1	SCE ENC	YES	YES	YES	
EMPLOYEE-NAME	ITEM	2	SCE ENC	YES			PERSONNEL
EMPLOYEE-NEWCOMERS	ITEM	2	SCE ENC	YES	YES	YES	
EMPLOYEE-SALARY	ITEM	3	SCE ENC	YES			PERSONNEL
EMPLOYEE-STREET	ITEM	1	SCE ENC	YES	YES	YES	
EMPLOYEE-TELEPHONE	ITEM	1	SCE ENC	YES	YES	YES	
EMPLOYEE-TOWN	ITEM	1	SCE ENC	YES	YES	YES	
EMPLOYING-COMPANY	ITEM	1	SCE ENC	YES	YES	YES	

LIST CONTAINS 12 ITEMS  
12 MEMBERS IN TOTAL

00170 MODIFY EMPLOYEE-SALARY-HISTORY.  
00171 LOCATE 'OBSOLETE-DEFINITION'

00000010 OBSOLETE-DEFINITION  
00172 LINE ITEM  
00173 LOCATE 'ARCHIVE'

00000050 ARCHIVE  
00174 DELETE LINE  
DM01187I 1 LINES DELETED

00176 LOCATE NEXT 'ITEM'

00000100 ITEM  
00176 DELETE LINE  
DM01187I 1 LINES DELETED

00177 .

DM01180I ALTERATION HAS CREATED NEW SOURCE RECORD  
DM01296I ENCODING OF EMPLOYEE-SALARY-HISTORY

00010 ITEM  
00020 NOTE  
00030 'THIS DEFINITION WAS CURRENT FROM 1979 -1980'  
00040 SEE EMPLOYEE-SALARY  
00200 HELD-AS NUMERIC 5 CONTENTS RANGE 10000 TO 50000  
00300 REPORTED-AS PICTURE '£899,999'  
00400 ENTERED-AS NUMERIC 5  
07000 ALIAS LOW-LEVEL 'EMPSAL'  
08000 CATALOG 'SALARY', 'NUMERIC'  
09000 DESCRIPTION  
09100 'YEARLY SALARY. INCLUDES GEOGRAPHICAL ALLOWANCES'  
DM01280I EMPLOYEE-SALARY-HISTORY SUCCESSFULLY ENCODED

00178 REMOVE EMPLOYEE-SALARY-HISTORY.  
DM01251I EMPLOYEE-SALARY-HISTORY REMOVED FROM DICTIONARY

00179 PRINT P1-ERS-NEW-MEMBERS.

PRINT OF P1-ERS-NEW-MEMBERS  
00100 COMMAND-STREAM  
00200 DESCRIPTION 'THIS MEMBER GIVES DETAILS OF NEW MEMBER DEFINITIONS INTRODUCED'  
00300 'SINCE THE START OF YEAR'  
00400 CONTENTS

To change EMPLOYEE-SALARY-HISTORY back to an ITEM definition, we can use a combination of the LOCATE clause and the new LINE clause of the MODIFY command. This enables us to change a definition without knowing the line numbers, simply the text to be changed.

Now remove EMPLOYEE-SALARY-HISTORY to return the dictionary to an unchanged state. Now let us first print then activate a COMMAND-STREAM. This produces a report of any updating of the dictionary which has occurred during a given period of time by three different classes of user. (Note that output may be different according to dictionary usage.)

X900

```

00500 TEXT
00600 -----
00700 'REPORT OF NEW AND AMENDED MEMBER DEFINITIONS SINCE 1ST JANUARY 1982',
00800 'BY ANALYST,PERSONNEL MANAGER AND PROGRAMMER',
00900 -----
01000 'CIRCULATION AJ,PL,MM',
01100 ' ',
01200 KEEP WHAT CONSTITUTES P1-ERS.
01300 TEXT 'NEW/ANALYST'
01400 ' ',
01500 LIST KEPT-DATA ALPHABETICALLY IF INTRODUCED AFTER 01/01/82 AT 00/00/01 BY USER
01600 'ANALYST'
01700 TEXT 'NEW/PERSONNEL MANAGER'
01800 ' ',
01900 LIST KEPT-DATA ALPHABETICALLY IF INTRODUCED AFTER 01/01/82 AT 00/00/01 BY USER
02000 'PERSONNEL-MANAGER'
02100 TEXT 'NEW/PROGRAMMER'
02200 ' ',
02300 LIST KEPT-DATA ALPHABETICALLY IF INTRODUCED AFTER 01/01/82 AT 00/00/01 BY USER
02400 'PROGRAMMER'
02500 TEXT 'AMENDED/ANALYST'
02600 ' ',
02700 LIST KEPT-DATA ALPHABETICALLY IF AMENDED AFTER 01/01/82 AT 00/00/01 BY USER
02800 'ANALYST'
02900 TEXT 'AMENDED/PERSONNEL MANAGER'
03000 ' ',
03100 LIST KEPT-DATA ALPHABETICALLY IF AMENDED AFTER 01/01/82 AT 00/00/01 BY USER
03200 'PERSONNEL-MANAGER'
03300 TEXT 'AMENDED/PROGRAMMER'
03400 ' ',
03500 LIST KEPT-DATA ALPHABETICALLY IF AMENDED AFTER 01/01/82 AT 00/00/01 BY USER
03600 'PROGRAMMER'
END OF PRINT

```

```

00180 PERFORM COMMAND-STREAM P1-ERS-NEW-MEMBERS
00181 MEMBER P1-ERS.

```

```

DMO1551I 32 GENERATED INPUT LINES

```

```

-----
REPORT OF NEW AND AMENDED MEMBER DEFINITIONS SINCE 1ST JANUARY 1982
BY ANALYST,PERSONNEL MANAGER AND PROGRAMMER

```

```

-----
CIRCULATION AJ,PL,MM

```

```

DMO1541I 54 ENTRIES ADDED TO KEPT-DATA LIST
NEW/ANALYST

```

```

LIST OF SELECTED MEMBERS

```

```

LIST CONTAINS 0 MEMBERS IN TOTAL

```

```

NEW/PERSONNEL MANAGER

```

```

LIST OF SELECTED MEMBERS

```

```

LIST CONTAINS 0 MEMBERS IN TOTAL

```

```

NEW/PROGRAMMER

```

```

LIST OF SELECTED MEMBERS

```

```

LIST CONTAINS 0 MEMBERS IN TOTAL

```

```

AMENDED/ANALYST

```

```

LIST OF SELECTED MEMBERS

```

MEMBER NAME	TYPE	USAGE	CONDITION	AC	ALT	REM	OWNER
STANDARD-DATE	ITEM	4	SCE	ENC	YES	YES	YES
TRANSACTION-CODE	ITEM	4	SCE	ENC	YES	YES	YES
TRANSACTION-DATA	ITEM	2	SCE	ENC	YES	YES	YES
TRANSACTION-DATE	ITEM	2	SCE	ENC	YES	YES	YES

```

LIST CONTAINS 4 ITEMS
4 MEMBERS IN TOTAL

```

```

AMENDED/PERSONNEL MANAGER

```

```

LIST OF SELECTED MEMBERS

```

```

LIST CONTAINS 0 MEMBERS IN TOTAL

```

```

AMENDED/PROGRAMMER

```

```

LIST OF SELECTED MEMBERS

```

```

LIST CONTAINS 0 MEMBERS IN TOTAL

```

X900

00214  
00215

PRODUCE COBOL FROM P1U02MEMP NOGEN PRINT  
USING HELD-AS VERSION 2 ALIAS COBOL.

*When executing certain commands, DATAMANAGER may not be able to process all options specified, but may use default values or make substitutions and output the appropriate message. For example, in this PRODUCE command, no version 2 or COBOL alias is available for any member. In cases where default values are acceptable, and the user has no need to be informed of any substitutions, output can be improved by switching off any informatory or warning messages.*

```

DMO2273W      MEMBER NAME USED INSTEAD OF REQUESTED ALIAS
                FD P1U02MEMP
                  BLOCK CONTAINS 205 CHARACTERS
                  LABEL RECORDS ARE STANDARD
DMO2273W      MEMBER NAME USED INSTEAD OF REQUESTED ALIAS
                  DATA RECORD IS EMPLOYEE-MASTER-RECORD.
                01 EMPLOYEE-MASTER-RECORD.
                  EMPLOYEE-MASTER-RECORD MEMBER NAME USED INSTEAD OF REQUESTED ALIAS
                    02 EMPLOYEE-CODE          PIC 9(4).
                      REQUESTED FORM/VERSION OF NAME IS NOT AVAILABLE
                      EMPLOYEE-CODE IS HELD-AS VERSION 01
DMO2272W      EMPLOYEE-CODE MEMBER NAME USED INSTEAD OF REQUESTED ALIAS
DMO2271W      02 EMPLOYEE-IDENTIFICATION.
DMO2273W      EMPLOYEE-IDENTIFICATION MEMBER NAME USED INSTEAD OF REQUESTED ALIAS
                    04 EMPLOYEE-NAME        PIC X(30).
                      REQUESTED FORM/VERSION OF NAME IS NOT AVAILABLE
                      EMPLOYEE-NAME IS HELD-AS VERSION 01
DMO2272W      EMPLOYEE-NAME MEMBER NAME USED INSTEAD OF REQUESTED ALIAS
DMO2271W      04 EMPLOYEE-STREET          PIC X(40).
DMO2273W      REQUESTED FORM/VERSION OF NAME IS NOT AVAILABLE
                  EMPLOYEE-STREET IS HELD-AS VERSION 01
DMO2272W      EMPLOYEE-STREET MEMBER NAME USED INSTEAD OF REQUESTED ALIAS
DMO2271W      04 EMPLOYEE-TOWN           PIC X(20).
DMO2273W      REQUESTED FORM/VERSION OF NAME IS NOT AVAILABLE
                  EMPLOYEE-TOWN IS HELD-AS VERSION 01
DMO2272W      EMPLOYEE-TOWN MEMBER NAME USED INSTEAD OF REQUESTED ALIAS
DMO2271W      04 EMPLOYEE-TELEPHONE     PIC 9(10).
DMO2273W      REQUESTED FORM/VERSION OF NAME IS NOT AVAILABLE
                  EMPLOYEE-TELEPHONE IS HELD-AS VERSION 01
DMO2272W      EMPLOYEE-TELEPHONE MEMBER NAME USED INSTEAD OF REQUESTED ALIAS
DMO2271W      02 EMPLOYEE-DEPARTMENT    PIC 999.
DMO2273W      REQUESTED FORM/VERSION OF NAME IS NOT AVAILABLE
                  EMPLOYEE-DEPARTMENT IS HELD-AS VERSION 01
DMO2272W      EMPLOYEE-DEPARTMENT MEMBER NAME USED INSTEAD OF REQUESTED ALIAS
DMO2271W      02 EMPLOYEE-SALARY       PIC 9(5).
DMO2273W      REQUESTED FORM/VERSION OF NAME IS NOT AVAILABLE
                  EMPLOYEE-SALARY IS HELD-AS VERSION 01
DMO2272W      EMPLOYEE-SALARY MEMBER NAME USED INSTEAD OF REQUESTED ALIAS
DMO2271W      02 EDUCATION.
DMO2273W      EDUCATION MEMBER NAME USED INSTEAD OF REQUESTED ALIAS
                    04 COLLEGE-NAME      PIC X(30).
                      REQUESTED FORM/VERSION OF NAME IS NOT AVAILABLE
                      COLLEGE-NAME IS HELD-AS VERSION 01
DMO2272W      COLLEGE-NAME MEMBER NAME USED INSTEAD OF REQUESTED ALIAS
DMO2271W      04 QUALIFICATIONS        PIC X(10).
DMO2273W      REQUESTED FORM/VERSION OF NAME IS NOT AVAILABLE
                  QUALIFICATIONS IS HELD-AS VERSION 01
DMO2272W      QUALIFICATIONS MEMBER NAME USED INSTEAD OF REQUESTED ALIAS
DMO2271W      02 EXPERIENCE.
DMO2273W      EXPERIENCE MEMBER NAME USED INSTEAD OF REQUESTED ALIAS
                    04 EMPLOYING-COMPANY  PIC X(30).
                      REQUESTED FORM/VERSION OF NAME IS NOT AVAILABLE
                      EMPLOYING-COMPANY IS HELD-AS VERSION 01
DMO2272W      EMPLOYING-COMPANY MEMBER NAME USED INSTEAD OF REQUESTED ALIAS
DMO2271W      04 EXPERIENCE-CODE       PIC 99.
DMO2273W      REQUESTED FORM/VERSION OF NAME IS NOT AVAILABLE
                  EXPERIENCE-CODE IS HELD-AS VERSION 01
DMO2272W      EXPERIENCE-CODE MEMBER NAME USED INSTEAD OF REQUESTED ALIAS
DMO2271W      04 EXPERIENCE-YRS       PIC 99.
DMO2273W      REQUESTED FORM/VERSION OF NAME IS NOT AVAILABLE
                  EXPERIENCE-YRS IS HELD-AS VERSION 01
DMO2272W      EXPERIENCE-YRS MEMBER NAME USED INSTEAD OF REQUESTED ALIAS
DMO2271W      02 TAX-CODE             PIC 9(4).
DMO2273W      REQUESTED FORM/VERSION OF NAME IS NOT AVAILABLE
                  TAX-CODE IS HELD-AS VERSION 01
DMO2272W      TAX-CODE MEMBER NAME USED INSTEAD OF REQUESTED ALIAS
DMO2271W      02 SOCIAL-SECURITY-CODE  PIC X(15).
DMO2273W      REQUESTED FORM/VERSION OF NAME IS NOT AVAILABLE
                  SOCIAL-SECURITY-CODE IS HELD-AS VERSION 01
DMO2272W      SOCIAL-SECURITY-CODE MEMBER NAME USED INSTEAD OF REQUESTED ALIAS
DMO2271W
DMO2217I      P1U02MEMP SUCCESSFULLY GENERATED

```

X900

```
00216 SWITCH OFF MESSAGES.  
DM00107I COMMAND PROCESSED  
  
00217 PRODUCE COBOL FROM P1U02MEMP NOGEN PRINT  
00218 USING HELD-AS VERSION 2 ALIAS COBOL.  
  
FD P1U02MEMP  
BLOCK CONTAINS 205 CHARACTERS  
LABEL RECORDS ARE STANDARD  
DATA RECORD IS EMPLOYEE-MASTER-RECORD.  
01 EMPLOYEE-MASTER-RECORD.  
02 EMPLOYEE-CODE PIC 9(4).  
02 EMPLOYEE-IDENTIFICATION.  
04 EMPLOYEE-NAME PIC X(30).  
04 EMPLOYEE-STREET PIC X(40).  
04 EMPLOYEE-TOWN PIC X(20).  
04 EMPLOYEE-TELEPHONE PIC 9(10).  
02 EMPLOYEE-DEPARTMENT PIC 999.  
02 EMPLOYEE-SALARY PIC 9(5).  
02 EDUCATION.  
04 COLLEGE-NAME PIC X(30).  
04 QUALIFICATIONS PIC X(10).  
02 EXPERIENCE.  
04 EMPLOYING-COMPANY PIC X(30).  
04 EXPERIENCE-CODE PIC 99.  
04 EXPERIENCE-YRS PIC 99.  
02 TAX-CODE PIC 9(4).  
02 SOCIAL-SECURITY-CODE PIC X(15).  
  
00219 SWITCH ON MESSAGES.  
DM00107I COMMAND PROCESSED
```

*Now the output can be read  
more easily.*

X900

00220 SWITCH ON NAME-CONCATENATION SELECT  
00221 NAME,ALIAS LOW-LEVEL.  
DM00107I COMMAND PROCESSED

00222 LIST ONLY "TRANSACTION".

LIST OF MEMBERS

MEMBER NAME	TYPE	USAGE	CONDITION	AC	ALT	REM	OWNER
TRANSACTION-CODE EMPTRANS	ITEM	4	SCE ENC	YES	YES	YES	YES
TRANSACTION-DATA EMPTRADA	ITEM	2	SCE ENC	YES	YES	YES	YES
TRANSACTION-DATE EMPDATE	ITEM	2	SCE ENC	YES	YES	YES	YES
TRANSACTION-RECORD TRANSREC	GROUP	4	SCE ENC	YES	YES	YES	YES
TRANSACTION-TOTAL EMPTRAN	ITEM	1	SCE ENC	YES	YES	YES	YES

LIST CONTAINS 4 ITEMS  
1 GROUP  
5 MEMBERS IN TOTAL

00223 SWITCH OFF NAME.  
DM00107I COMMAND PROCESSED

*Extra information can be  
output from some interrogation  
commands by first switching  
on name concatenation and  
specifying what further details  
are required.*

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AMENDMENT  
RECORD

This manual when issued should contain 172 pages (86 sheets), comprising:

Preliminary pages	4 pages ( 2 sheets)
Chapter 1	4 pages ( 2 sheets)
Chapter 2	8 pages ( 4 sheets)
Chapter 3	66 pages (33 sheets)
Chapter 4	12 pages ( 6 sheets)
Chapter 5	10 pages ( 5 sheets)
Chapter 6	14 pages ( 7 sheets)
Chapter 7	14 pages ( 7 sheets)
Chapter 8	10 pages ( 5 sheets)
Chapter 9	8 pages ( 4 sheets)
Chapter 10	4 pages ( 2 sheets)
Chapter 11	6 pages ( 3 sheets)
General Index	6 pages ( 3 sheets)
Command Index	4 pages ( 2 sheets)
Amendment Record	2 pages ( 1 sheet)

in addition to the nine divider sheets containing the headings of Chapters 3 to 11.

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If any updates to the information contained in this manual become necessary, additional or replacement pages will be issued. Such pages will be accompanied by a front sheet, the amendment list, detailing the action required to update the manual. On completion of the updating, the amendment list should be filed behind this page. An entry should be made in the table overleaf to record the action taken.

Each page of this manual is annotated (immediately above the page reference) with the publication date of the page. Update pages will be similarly annotated. It is thus always possible to check that the latest version of a page is held.

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