

Database Arrays

Adabas supports array structures within the database in the form of multiple-value fields and periodic groups.

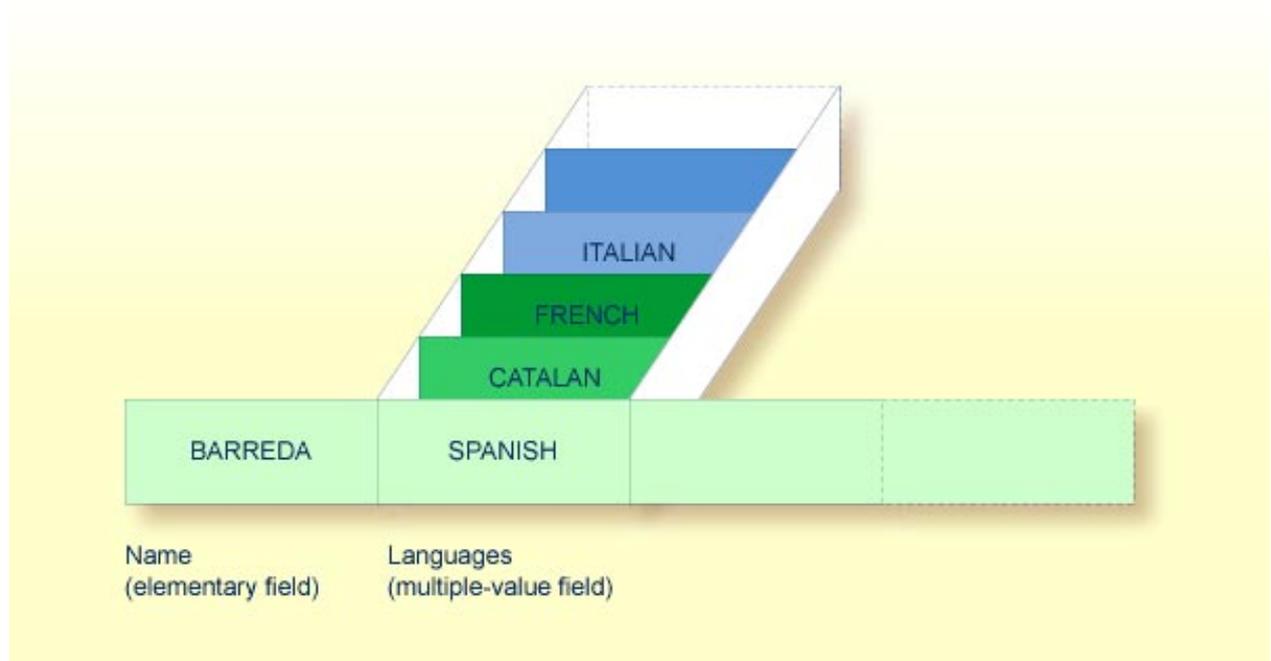
The following topics are covered:

- Multiple-Value Fields
- Periodic Groups
- Referencing Multiple-Value Fields and Periodic Groups
- Multiple-Value Fields Within Periodic Groups
- Referencing Multiple-Value Fields Within Periodic Groups
- Referencing the Internal Count of a Database Array

Multiple-Value Fields

A multiple-value field is a field which can have more than one value (up to 191) within a given record.

Example:



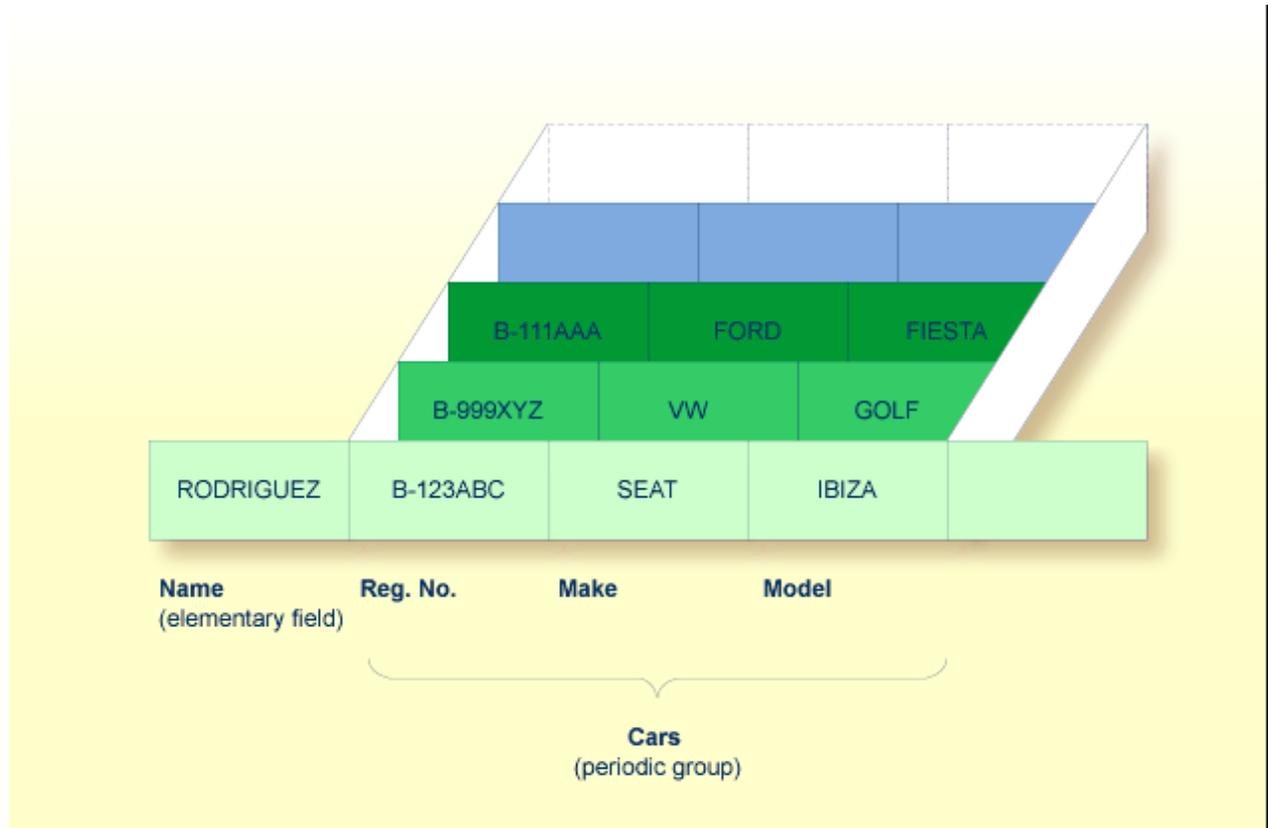
Assuming that the above is a record in an employees file, the first field (Name) is an elementary field, which can contain only one value, namely the name of the person; whereas the second field (Languages), which contains the languages spoken by the person, is a multiple-value field, as a person can speak more than one language.

Periodic Groups

A periodic group is a group of fields (which may be elementary fields and/or multiple-value fields) that may have more than one occurrence (up to 191) within a given record.

The different values of an multiple-value field are usually called *occurrences*; that is, the number of occurrences is the number of values which the field contains, and a specific occurrence means a specific value. Similarly, in the case of periodic groups, occurrences refer to a group of values.

Example:



Assuming that the above is a record in a vehicles file, the first field (Name) is an elementary field which contains the name of a person; Cars is a periodic group which contains the automobiles owned by that person. The periodic group consists of three fields which contain the registration number, make and model of each automobile. Each occurrence of Cars contains the values for one automobile.

Referencing Multiple-Value Fields and Periodic Groups

To reference one or more occurrences of a multiple-value field or a periodic group, you specify an *index notation* after the field name.

Examples:

The following examples use the multiple-value field LANGUAGES and the periodic group CARS from the previous examples.

The various values of the multiple-value field LANGUAGES can be referenced as follows.

LANGUAGES (1)	References the first value ("SPANISH").
LANGUAGES (X)	The value of the variable X determines the value to be referenced.
LANGUAGES (1:3)	References the first three values ("SPANISH", "CATALAN" and "FRENCH").
LANGUAGES (6:10)	References the sixth to tenth values.
LANGUAGES (X:Y)	The values of the variables X and Y determine the values to be referenced.

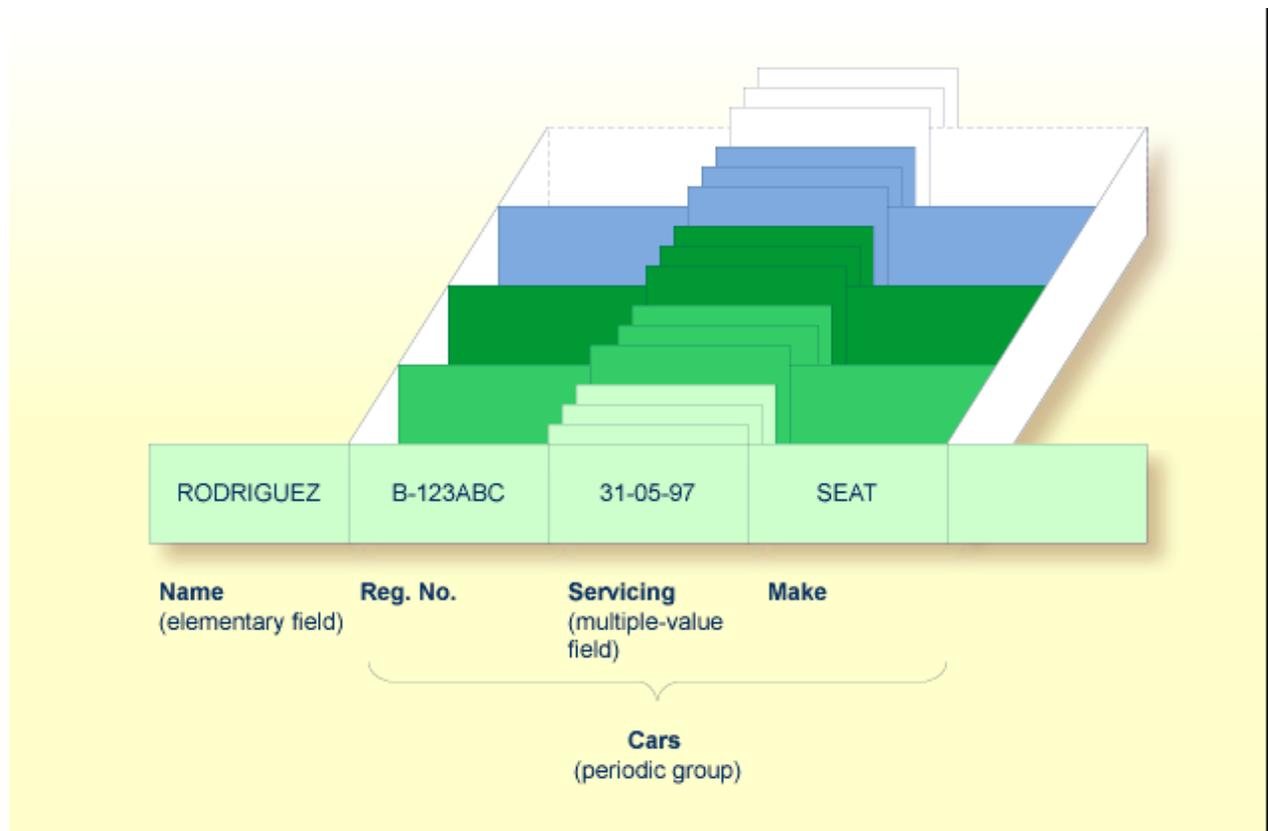
The various occurrences of the periodic group CARS can be referenced in the same manner:

CARS (1)	References the first occurrence ("B-123ABC/SEAT/IBIZA").
CARS (X)	The value of the variable X determines the occurrence to be referenced.
CARS (1:2)	References the first two occurrences ("B-123ABC/ SEAT/IBIZA" and "B-999XYZ/VW/GOLF").
CARS (4:7)	References the fourth to seventh occurrences.
CARS (X:Y)	The values of the variables X and Y determine the occurrences to be referenced.

Multiple-Value Fields Within Periodic Groups

An Adabas array can have up to two dimensions: a multiple-value field within a periodic group.

Example:



Assuming that the above is a record in a vehicles file, the first field (Name) is an elementary field which contains the name of a person; Cars is a periodic group which contains the automobiles owned by that person. The periodic group consists of three fields which contain the registration number, servicing dates and make of each automobile. Within

the periodic group Cars, the field Servicing is a multiple-value field, containing the different servicing dates for each automobile.

Referencing Multiple-Value Fields Within Periodic Groups

To reference one or more occurrences of a multiple-value field within a periodic group, you specify a "two-dimensional" index notation after the field name.

Examples:

The following examples use the multiple-value field SERVICING within the periodic group CARS from the example above. The various values of the multiple-value field can be referenced as follows:

SERVICING (1,1)	References the first value of SERVICING in the first occurrence of CARS ("31-05-97")
SERVICING (1;5,1)	References the first value of SERVICING in the first five occurrences of CARS.
SERVICING (1;5,1:10)	References the first ten values of SERVICING in the first five occurrences of CARS.

Referencing the Internal Count of a Database Array

It is sometimes necessary to reference a multiple-value field or a periodic group without knowing how many values/occurrences exist in a given record. Adabas maintains an internal count of the number of values in each multiple-value field and the number of occurrences of each periodic group. This count may be read in a READ statement by specifying "C*" immediately before the field name.

The count is returned in format/length N3. See Referencing the Internal Count for a Database Array in the Statements documentation for further details.

Examples:

C*LANGUAGES	Returns the number of values of the multiple-value field LANGUAGES.
C*CARS	Returns the number of occurrences of the periodic group CARS.
C*SERVICING(1)	Returns the number of values of the multiple-value field SERVICING in the first occurrence of a periodic group (assuming that SERVICING is a multiple-value field within a periodic group.)