ABAP WORKBENCH Overview

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ABAP

"Advanced Business Application Programming"
4th Generation Language
? Similar to other programming languages
?Used with SAP relational database

ABAP Uses

? Provide additional business functionality
?Customize or add onto existing apps
?Most Common uses - custom reports and interfaces

ABAP/4 Workbench

Integrated graphical environment in SAP to write ABAP/4 applications
Write code, design screens, make user interfaces, debug, and test

ABAP/4 Development Workbench

1. All programs are stored in the R/3 Repository.
2. A program is simply an object.
3. All definitions are kept in the data dictionary.e.g. variable descriptions and parameters of fields.
4. Double-clicking will navigate you to wherever the object is stored.
5. Remote call functions let you access other systems.SAP Easy Access Menu

Standard screen displayed first

1. Access to the various tools through transaction codes
2. Transaction code to be entered in the command line bar
3. Tree navigation possible to access the various objects Reporting and Dialog Programming

1. Reporting you use the ABAP/4 Open SQL to read data from the R/3 database
A report consists of a selection screen on which you define the dataset you wish to display, and a list which displays the data itself.

2. dialog programming you use the screen painter to create screens and program the sequence in which they appear ABAP/4 Programs
All ABAP/4 programs (objects) are made up of:

1. -Source code -Text elements -Attributes Creating Programs
   -Begin by first specifying a development class.
   -Development classes are categories of SAP objects (e.g. program object).
   -Customer-specific program names begin with Y or Z.
   -If you are creating a test object which you do not wish to be transported, choose Local Object.
   -The development class is then set to $TMP automatically.
   -The ABAP/4 Editor (SE38)

The ABAP/4 Editor can run in three different modes:
-1. Command mode
-2. PC mode with line numbering
-3. PC mode without line numbering

?You can switch between editor modes by choosing Settings ® Editor mode
-It is recommended that you do your work in PC mode with line numbering

ABAP/4 Editor (options)
?Check/Generate
?Insert Statement
?Split Line/Copy/Move...
?Fetch
?Position
?Goto Menu
?Utilities (Local/Global Search)
?Upload/Download
?Set/Display Breakpoints
?Printing (Only a part ...)

ABAP Syntax

?An ABAP/4 program consists of individual statements
- Each statement must end with a period.
- The first word of a statement is known as the key word.
- Words are separated from each other by at least one blank.
- Statements can be indented.
- Statements can extend over several lines.

You can concatenate several consecutive statements with an identical key word (e.g. WRITE:).
- Follow the key word with a colon.
- Separate each concatenated part with a comma.
- End the lines of the concatenated statements with a period.

ABAP/4 Syntax (cont.)

You can insert comments into a program in two ways: 1. An asterisk (*) in column 1 flags the whole line as a comment.

A quotation mark (") within a line flags the remainder of the line as a comment.

Tables and the Select Statement
- The Tables: <name> statement declares an ABAP/4 Dictionary table in the ABAP/4 program and allocates a table work area with the structure of <name>.
- The Select statement reads the table <name> line by line and places each line read in the table work area.
  - Note: Double-clicking on the Tables: statement in the editor will display how the table is defined in the data dictionary.

Basic Dictionary Objects
- Tables - collection of records of data in fields.
- Data elements - contain the semantic definition (e.g. short description) of what is contained within a field.
- Domains - describe the technical attributes of the table's fields (e.g. field type, length, value range, etc.).

3 Levels of the Dictionary
- Tables or Structures
  - composed of one or more fields
- Data Elements
  - each field refers to a data element that describes the meaning of the field
- Domain
  - determines the technical properties of the field
  - data type and size (including number of decimal places)
  - allowed data values
  - output characteristics
- Elements and Domains
  - Domain - provides the technical description
  - Element - determines the role played
- Integrity Checking
  - Domain Range/Value Integrity Checks
    - value table
      - only values contained in the value table can be entered in fields referring to this domain
    - fixed values
      - only values that match a value in the user specified list of admissible values can be entered in fields referring to this domain
    - Referential Integrity Checking
      - check table
        - foreign key values must match an entry in the specified check table
        - check tables bound to input fields on data entry screens
      - position the cursor on input field and press F4 to get a list of permissible values
      - the default check table for a field is the value table of the underlying domain
      - from the "Dictionary: Table/Structure: Display Fields" screen, Select GoTo...Foreign Keys (F8)

Viewing the Contents of a Database Table
- From the Data Dictionary
  - Click on the Table Radio Button & enter the Table Name
- From the Dictionary Table: Table/Structure: Display Fields screen choose Utilities...Table Contents
  - Data Browser (from main menu item Overview)
- Enter the Table Name
- Choose Table...Table Contents or press Enter
- Fill in the appropriate Selection Screen entries
- Click on the Execute icon on the application toolbar, (or press F8)

Structures and Aggregated Objects (Views)
- Besides defining tables stored in the database, you can also define the structure of data which occurs when performing calculations in programs, or when passing data between programs.
- Structures are defined and activated in the ABAP/4 Dictionary.
- While data can be permanently stored in the database, data in structures exists only during the runtime of a program.
- Aggregated objects are objects which come from several different tables.
- Views are application-specific views of different ABAP/4 Dictionary tables.
- Views allow you to gather information from fields of different tables and present it to users in the form they require.

ABAP/4 Dictionary (In summary)
The ABAP/4 Dictionary is the central facility in the system where you can create and maintain data declarations, tables, structures and aggregated objects. Since it is integrated into the ABAP/4 Development Workbench as an active component, any change made in the ABAP/4 Dictionary takes immediate effect in programs affected.

ABAP/4 Repository Information

The ABAP/4 Repository Information System allows you to obtain information about objects (tables, fields, domains, etc.) in the ABAP/4 Repository. You can find anything that is used in programs by using the Data Repository.

In summary

The ABAP/4 Repository Information System allows search for ABAP/4 Development Workbench objects by specifying required attributes. From the ABAP/4 Development Workbench: Overview @ Repository Information system.