ADVANCED BUSINESS APPLICATION PROGRAMMING (ABAP)

SAP ABAP

Introduction

ABAP (Advanced Business Application Programming) is a very high level programming language created by SAP. SAP's most recent development platform, NetWeaver, supports both ABAP and Java for programming SAP's Web Application Server.ABAP is one of the many application-specific fourth-generation languages (4GLs). ABAP was one of the first languages to include the concept of *Logical Databases* (LDBs), which provides a high level of abstraction from the basic database level. It was also intended to be used by SAP customers to enhance SAP applications, customers can develop custom reports and interfaces with ABAP programming.

All ABAP programs reside inside the SAP database. In the database all ABAP code exists in two forms: source code, which can be viewed and edited with the ABAP Workbench tools, and generated code. ABAP programs execute under the control of the runtime system, which is part of the SAP kernel.

SAP has three different layers as presentation layer (GUI), **application layer** (programs run on this) and **data base layer** where all data is stored and retrieved from user driven conditions, commands given by end user programmer through **presentation layer**.
In ABAP, there are 7 different types of programs:

Include, executable, function module, module pool, subroutine, class, interface

Course Contents
Technologies

- systems (my Business Suite and NetWeaver)
- Technical structure of an Web Application Server

ABAP Workbench Basics

- Data types and data objects
- Internal tables
- Data retrieval (authorization check)
- Subroutines
- ABAP runtime system
- Function groups and function modules

Advanced ABAP

- Open SQL
- Dynamic programming
- Program calls and memory management

ABAP Objects

- Classes and objects
- Inheritance
- Polymorphism (casting)
- Interfaces
- Events
- Global classes and interfaces
- Exception handling

ABAP Dictionary

- Database tables
- Performance for table accesses
- Consistency by means of input check (foreign key dependency)
- Dependency for ABAP Dictionary objects
- Views
- Search helps

List Creation Techniques

- Data output in lists
- Selection screen
- Logical database
- Interactive lists
- List creation with the ALV grid control:
- Simple lists
- Field catalog
- Layout
- Event handling

Dialog Programming

- Screen (basics)
- Program interface (GUI title, GUI status)
- Screen elements for output (text fields, status icons, and group boxes)
- Screen elements for input/output
- Subscreen and tabstrip control
- Table control
- Context menu
- Lists in dialog programming

Database Changes

- Database updates with open SQL
- LUWs and client/server architecture
- locking concept
- Organize database changes
- Complex LUW processing
- Number assignment
- Change document creation

Enhancements and Modifications

- Changes to the standard system

- Personalization

- Enhancements to ABAP Dictionary elements

- Enhancements via customer exits

- Business Transaction Events

- Business Add-Ins

- Modifications