

Advanced Topics in COBOL (3 Day)

Benefits

Students who complete this course will be able to code mainline programs and subroutines, passing arguments and receiving parameters, including nested programs, external subroutines, and static and dynamic linkages.

In addition, the student will gain theory and practice in building and working with tables and variable length records using subscripts and indexes, and with using the string handling capabilities of COBOL.

Audience

Experienced COBOL programmers who need to maintain or create programs that use subroutine linkages, work with tables, or use string handling facilities; beginning COBOL programmers in an intensive training program.

Prerequisites

The student should have a good background in coding basic COBOL programs, such as might be obtained in successfully completing course, "Structured COBOL Workshop for Enterprise COBOL".

Major Topics Include

- Subroutines and CALL, passing arguments and receiving parameters
- Nested programs and external subroutines
- Static versus dynamic CALLs
- CALL ... ON OVERFLOW and CALL ... ON EXCEPTION; CANCEL
- COMMON, GLOBAL, INITIAL, and EXTERNAL attributes
- Defining tables (single- and multi-dimensional)
- Initializing and sorting tables
- PERFORM ... VARYING
- Subscripts and indexes
- SET, SEARCH, SEARCH ALL
- ALL subscripting (intrinsic functions)
- Variable length record processing
- INSPECT, STRING, UNSTRING
- COBOL SORT facility
- Dynamic File Allocation
- Pointer, procedure-pointer, and function-pointer data types

Exercises

There are 11 hands-on exercises.

Advanced Topics in COBOL (Enterprise, z/OS) - Topical Outline

Day One

Introduction to Subroutines

Invoking Subroutines - CALL

Leaving a CALLED program

Passing Arguments and Receiving Parameters

Computer Exercise: A Mainline and Subroutines

Additional Subroutine Topics

Static vs. Dynamic CALLS

CALL ... ON OVERFLOW / EXCEPTION

CANCEL

Passing Arguments BY VALUE

How arguments are passed

How parameters are received

Returning values: the RETURNING phrase

Shared Data: the EXTERNAL Attribute

Computer Exercise: External Subroutines and Shared Data

Nested Programs

Nested Programs - The Concept

Nested Program Structures

The Uses of Nested Programs

The INITIAL Attribute

Computer Exercise: Nested Programs

Additional Subroutine Capabilities - Optional

ENTRY Points

Local-storage

Recursive programs

Table Handling

Tables and subscripts

Loading a Table From a File

Looking Up an Element in a Table

Computer Exercise: Build and Print a Table

Day Two

Table Handling, II

Sorting a Table

Computer Exercise: Table Sorting

Table Handling, III

Variable Length Tables

Two-Dimensional Tables

Initializing Tables

VALUE clauses, REDEFINES and INITIALIZE

Loops and I/O

PERFORM ... VARYING

Computer Exercise: Two Dimensional Tables

Indexing

Index-names and Index Data Items

SET, SEARCH, SEARCH ALL

Computer Exercise: Using Indexes and SEARCH

Intrinsic Functions and Tables

Concepts and Syntax

The ALL subscript

Day Three

Variable Length Records

Defining

Processing

Computer Exercise: Reading a File With Variable Length Records

Introduction to String Handling In COBOL

Hex Notation

Reference Modification

LENGTH OF special register (IBM extension)

LENGTH intrinsic function

INSPECT

Computer Exercise: Analyzing Strings

More String Handling in COBOL

STRING

UNSTRING

Computer Exercise: More String Handling

COBOL SORT Facility (Optional)

Sort files

The SORT verb

Sort control statements

MERGE

Computer Exercise: COBOL SORT

Other Advanced Topics

Null-terminated strings

Pointers

Address Of Special Register

Procedure-pointers

Function-pointers

Dynamic file allocation