COBOL Application Programming

Course Summary

Description

This course will cover I/O processing, conditional testing, arithmetic operations, table handling, subprogram concepts and linkage conventions. The course will cover structured programming using the new COBOL for MVS constructs for Do groups (inline performs), Dowhile, Dountil, Selection (IF THEN ELSE) and Case (evaluate). This course is current to the latest release of COBOL for MVS/VM but can be taught for any predecessors.

Objectives

Upon completion of the course each participant should have:

- An understanding of each of the COBOL Divisions: Identification, Environment, Data, and Procedure.
- Knowledge of good programming techniques in COBOL II. Inline performs (do groups), Evaluate (case), Perform with test after (dountil), Perform with test before (dowhile), If Then Else (selection), and sequence.
- An understanding of the basic I/O functions and verbs. Open, Close, Read, Write, Rewrite, Start, file organization, file access mode, fixed and variable length records processing.
- An understanding of the Arithmetic instructions and different numeric data types. Add, Subtract, Multiply, Divide, Compute Pic 9 data (external decimal), Comp-3 data (packed), and Comp data (binary).
- An understanding of table handling techniques. Table creation, searching tables, binary versus sequential searches, the SEARCH verb, indexing versus subscripting, and usage index data types.
- An understanding of the subprogram concept. Static versus dynamic calls, Parameter list and linkage conventions, By Content and By Reference, External data items.

Topics

- COBOL divisions identification, environment, data and procedure
- Programming techniques in COBOL II in-line performs (do groups), evaluate (case), perform with test after (dountil), perform with test before (dowhile), if then else (selection) and sequence
- Basic I/O functions and verbs open, close, read, write, rewrite, start, file organization, file access mode, fixed and variable length records processing
- Table handling techniques table creation, searching tables, binary vs. sequential searches, the SEARCH verb, indexing vs. subscripting and usage index data types
- Subprogram concept static vs. dynamic calls, parameter list and linkage conventions, by content and reference, external data items

Audience

This course is designed for application programmers and systems analysts who are or will be using the COBOL 85 standard from COBOL for MVS thru Enterprise COBOL.

Prerequisites

Students should have a basic familiarity with TSO/ISPF (or equivalent) for editing programs and submitting jobs. Knowledge of another programming language is helpful but not required.

Duration

Five days

Due to the nature of this material, this document refers to numerous hardware and software products by their trade names. References to other companies and their products are for informational purposes only, and all trademarks are the properties of their respective companies. It is not the intent of ProTech Professional Technical Services, Inc. to use any of these names generically

COBOL Application Programming

Course Outline

I. COBOL Overview
- A. Language advantages
- B. Coding requirements

II. COBOL Divisions
- A. Identification division
- B. Environment division
- C. Data division
- D. Copy statement
- E. Procedure division
- F. COBOL statements

III. I/O Operations
- A. OPEN statement
- B. READ command
- C. WRITE statement
- D. DISPLAY statement

IV. MOVE Statement
- A. Statement overview
- B. Moving different data types

V. Logic Flow Control
- A. Dowhile vs. Dountil
- B. PERFORM statement
- C. Goback statement

VI. COBOL Compiler
- A. Reserved words
- B. Compiler output improvement
- C. Run time options

VII. Data Validation
- A. IF conditional statement
- B. Conditional types
- C. Nested conditionals
- D. EVALUATE statement

VIII. Numeric Editing
- A. Editing concepts
- B. Numeric sign handling
- C. Floating dollar signs

IX. Arithmetic Commands
- A. Add statements
- B. SUBTRACT statement
- C. MULTIPLY statement
- D. DIVIDE statement
- E. COMPUTE

X. COBOL Reporting
- A. Report overview
- B. Report components
- C. File considerations
- D. ACCEPT command

XI. Table Handling
- A. Table definition
- B. COBOL table structure
- C. Table accessing
- D. SET statement
- E. SEARCH statement

XII. Data Representation
- A. Defining COBOL data types
- B. Internal representations

XII. COBOL Subprograms
- A. Basic concepts
- B. Subprogram types
- C. CALL statement
- D. Subprogram entry
- E. Linkage section
- F. Nested subprogramming

Due to the nature of this material, this document refers to numerous hardware and software products by their trade names. References to other companies and their products are for informational purposes only, and all trademarks are the properties of their respective companies. It is not the intent of ProTech Professional Technical Services, Inc. to use any of these names generically