

Duration: 5 Days

Audience:

Application Programmers with little or no previous experience in PL/I who require formal training in the basic language features and programming techniques.

Pre-requisites:

An understanding of computer concepts is assumed.

A working knowledge of TSO/ISPF is required. This can be gained from our z/OS TSO/ISPF Workshop.

Course Objectives

Each delegate will acquire a working knowledge of PL/I and will gain a solid foundation in the fundamentals of PL/I coding including program structure, design, execution and debugging. The concepts of structured programming are introduced with examples and explanation. Good programming practice is encouraged throughout. The course starts with the basics and furthers learning with 48 hands on assignments until delegates are capable of complex programming logic and design.

Course Content

Module 1: Documentation & Other information

The manuals, where PL/I programs execute and explanation of this material.

Module 2: Syntax & Language Structure

Program Structure Coding rules Introduction to Instructions & Statements Understanding compilation output

Module 3: Compiling and Debugging

Compile process Compiler option and how to override them Link/Bind options and how to override them Common Link/Bind Control Statements Compilation errors and correct



Run-time errors and correction Debugging aids; DISPLAY, PUT and HEX Built-in Function

Module 4: Define, Move and Initialize fields

DECLARE Statement Data attributes BIN, CHAR, DEC, PIC and POINTER types Field initialization Continuation rules Group Structures DEFINE and BASED attributes

Module 5: Sequential Record File Processing

File types BSAM vs QSAM File processing overview DECLARE a file File instructions; Open, Read, Write. Rewrite. Locate and Close How to handle end-of-file Using Variable Length Records Using VSAM ESDS Clusters

Module 6: Structure Programming

Understanding unstructured issues Structure programming terminology The 4 DO instruction formats ITERATE instruction LEAVE instruction CALL Instruction

Module 7: Decision Making

Condition terminology Relational expression and operators Using Built-in Functions within relational expressions IF-THEN-ELSE construct Nested IF instructions SELECT-WHEN-OTHERWISE instructions



Module 8: Arithmetic

Mathematic symbols Source versus Target fields Mathematic assignments Some mathematical Built-in Functions Displaying the results for diagnostic purposes Displaying the results for end users

Module 9: Character manipulation

SUBSTR Built-in Function INDEX Built-in Function CENTRE, LEFT and RIGHT Built-in Functions LOWERCASE, UPPERCASE and TRANSLATE Built-in Functions REPLACE, SCRUBOUT, SQUEEZE and TRIM Built-in Functions TALLY Built-in Function

Module 10: Working with Dates

PL/I DATETIME Built-in Function LE CEELOCT Callable Service and why to use it PL/I DATE Built-in Function Obtaining the Julian Date PL/I TIME and TIMESTAMP Built-in Functions Obtaining the day of the week name

Module 11: Using Stream I/O

The differences between RECORD and STREAM I/O GET and PUT instructions in Data Mode GET and PUT instructions in Edit Mode GET and PUT instructions in List Mode FORMAT statement

Module 12: Sub-programs

Common features of Internal and External routines Built-in Functions differences Receiving parameter input END, EXIT and RETURN instructions CALL for Internal subroutines Call for External subroutines DECLARE EXTERNAL



Static versus Dynamic External subroutine FETCH instructions PLIRETC and PLIRETV Built-in Functions Forcing a User ABEND Retrieving the JCL PARM information

Module 13: Working with Arrays

Defining an array Initializing an array Subscripting Performing a sequential search of an array Performing a binary search of an array Passing an array to an external subroutine

Module 14: Indexed File Processing

DECLARE FILE for VSAM ENDFILE, KEY, RECORD, TRANSMIT and UNDEFINEDFILE conditions OPEN (implicit vs explicit) CLOSE, READ, WRITE, REWRITE and DELETE instructions Using Alternate Indices

Module 15: Relative File Processing

DECLARE FILE for VSAM ENDFILE, KEY, RECORD, TRANSMIT and UNDEFINEDFILE conditions OPEN (implicit vs explicit) CLOSE, READ, WRITE, REWRITE and DELETE instructions