

Structured PL/1 Coding Workshop

Course Summary

Description

Students who complete this course will be able to write or maintain PL/1 programs that do not require advanced capabilities of the language. The emphasis here is learning the basics of the language, along with developing program design skills using pseudocode.

Objectives

After taking this course, students will be able to:

- Describe the basic elements of the PL/1 language
- Code PL/1 programs that handle sequential processing of CONSECUTIVE files, using move mode record I/O
- Design a program using pseudocode to arrive at a solid structured design for implementation in PL/1
- Handle most programming applications for batch jobs: file transfers, reports (including page breaks and control breaks), and match merge applications
- Code PL/1 programs that handle arrays and tables
- Use limited stream I/O functions, primarily for debugging.

Topics

- Elements of PL/1
- Data descriptions
- Sequential files
- Major PL/1 verbs
- Built-in functions: elementary
- Pseudovariables
- Pseudocode and program design
- Common logic requirements
- Programming from pseudocode
- Working with print files
- Match merge logic
- Arrays
- Elementary debugging

Audience

This course is designed for experienced programmers needing to learn PL/1 as a second language, or reviewing PL/1 after having been away. Entry level programmers learning PL/1 as their first programming language would also find this course beneficial.

Prerequisites

At the very least, the student entering this course should have background in using a text editor for keying in programs, and know how to run jobs and examine the output. Some introduction to computer and programming concepts is also recommended.

Duration

Five days

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Course Outline

- I. Introduction**
 - A. A PL/1 Program
 - B. PL/1 language elements
 - C. Describing elementary data items: CHARACTER and BIT
 - D. Describing CONSECUTIVE files
 - E. Assignment statement
 - F. Processing sequential files
 - G. OPEN, READ, WRITE, CLOSE, ON ENDFILE, DO ... END
 - H. Computer Exercise: A First PL/1 Program
- II. Numeric data elements: DECIMAL and BINARY**
 - A. Structures
 - B. Additional data descriptions: PICTURE and editing
 - C. Computer Exercise: A Report with Pictures
- III. Logical expressions**
 - A. IF statements
 - B. DO loops
 - C. Computer Exercise: A More Complex Report
- IV. Program design concepts**
 - A. A general pseudocode design approach
 - B. Built-in functions and pseudovariables
 - C. Computer Exercise: Programming with Pseudocode
- V. Report considerations**
 - A. Pseudocode: Report with page breaks
 - B. Computer Exercise: A Report with Page Breaks
- VI. Introduction to Stream I/O**
 - A. Control Breaks
 - B. Pseudocode: Examples with control breaks
 - C. Computer Exercise: A Report with Two Levels of Control
- VII. Breaks**
 - A. File merges and match merges
 - B. SELECT groups
 - C. Internal procedures and CALL
 - D. Pseudocode: Match merge examples
 - E. Writing Maintainable Code
 - F. Computer Exercise: Match Merge Logic
- VIII. Arrays**
 - A. Multi-dimensional arrays
 - B. Initializing arrays
 - C. Array operations
 - D. Computer Exercise: Table Handling
- IX. BLOCKS and Recognition of Names**
 - A. LEAVE, EXIT, and STOP
 - B. DEFINED
 - C. LIKE
 - D. Update in place processing
 - E. Arithmetic expressions
 - F. GO TO
 - G. Optional Computer Exercise: Match Merge Extensions