

Introduction to ILE RPG IV Programming

Course Summary

Description

This class provides an introduction to RPG IV programming on the IBM i (iSeries and AS/400). No previous knowledge of RPG is required or assumed. This course covers both Fixed format and /FREE format C Specifications, with the current language enhancements. Students are also introduced to Free format File and Definition specifications, though those are not the focus.

The class focuses on the student's ability to read and maintain existing RPG IV programs, and to create new programs using modern language capabilities. Some popular RPG legacy capabilities are reviewed to assist the student in reading, maintaining and enhancing existing programs.

Topics

- Introduction to RPG IV
- Data Definition
- Calculations and Character Operations
- Conditional and Iterative Operations
- File Processing
- Advanced File Processing
- Arrays and Tables
- Printing Reports
- Interactive Workstation Programming
- Modular Programming
- Overview of ILE Concepts

Audience

This course is designed for those wanting an introduction to RPG IV programming on the IBM i (iSeries and AS/400).

Prerequisites

Before taking this course, you should have a basic knowledge of computer programming as well as these tools from IBM: Source Entry Utility (SEU) and Programming Development Manager (PDM), or IBM's RDi.

Duration

Five days

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Course Outline

I. Introduction to RPG IV

- A. Overview of RPG IV Heritage
- B. RPG IV Specification Types Overview Using Editor Prompting and HELP

II. Data Definition

- A. Data Definition Methods
- B. Definition Specification
- C. Stand Alone Fields and Named Constants
- D. Data Structures and Data Types

III. Calculations and Character Operations

- A. Arithmetic Operations
- B. Assignment Operations
- C. EVAL Operation and Expressions
- D. RPG IV Built In Functions, e.g. %TRIM %LEN
- E. Overview of /Free format C Specs

IV. Conditional and Iterative Operations

- A. IF/ELSE Operations
- B. SELECT/WHEN/OTHER Operations
- C. DO/DOU/DOW/FOR/ ITER/LEAVE Operations

V. File Processing

- A. Avoiding the Fixed RPG Logic Cycle
- B. File Specifications
- C. Full Procedural Processing
- D. Sequential Processing
- E. Keyed Processing
- F. CHAIN Operation
- G. READ/READP Operations
- H. SETLL/SETGT/READP/READPE
- I. WRITE/UPDATE/DELETE Operations
- J. I/O Error Handling using Built-In Functions and Resulting Indicators
- K. Fundamental File Loop
- L. Output Specifications

VI. Advanced File Processing

- A. Processing Partial Files Keys and Key Lists
- B. Key Data Structures

VII. Arrays and Tables

- A. Difference between Tables and Arrays
- B. Defining and Initializing Arrays Runtime vs. Compile Time Arrays
- C. The Indicator Array *IN

VIII. Printing Reports

- A. Program Described Printing in O Specs
- B. Handling Page Overflow OFLIND
- C. Externally Described Printer Files
- D. Overview of DDS for Printer Files

IX. Interactive Workstation Programming

- A. Screen Design Aid and Display File DDS Screen Record Formats
- B. Using Function Keys
- C. The Indicator Data Structure Display of Database Records
- D. Using and Editing Input/Output Fields DDS Field and Keyword Conditioning

X. Modular Programming

- A. Using Internal Subroutines
- B. Subroutine Flow of Control
- C. Executing External Programs
- D. CALL Operation
- E. Passing Parameters
- F. *ENTRY PLIST Operation
- G. Using IBM supplied APIs
- H. Running CL commands from RPG IV

XI. Overview of ILE Concepts

- A. Prototype/Procedure Interface Definition Using the CALLP Operation CRTBNDRPG Command
- B. Creating Modules and Programs
- C. Creating Programs combining Multiple Modules

XII. Additional Topics

- A. CRTBNDRPG Compiler Options Using the ILE Debug Utility STRDBG Reviewing Compiler Listings Diagnosing Runtime Errors
- B. Review of New Free Format Specifications