Introduction to ILE RPG IV Programming
(RG35)
5 Days (40% Lecture, 60% Workshop)

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.

Prerequisites: 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.

Course Outline

Introduction to RPG IV
Overview of RPG IV Heritage
RPG IV Specification Types Overview
Using Editor Prompting and HELP

Data Definition
Data Definition Methods
Definition Specification
Stand Alone Fields and Named Constants
Data Structures and Other Data Types

Calculations and Character Operations
Arithmetic Operations
Assignment Operations
EVAL Operation and Expressions
Op Code Extenders   e.g. EVAL(H)
RPG Built In Functions, e.g. %TRIM %LEN
Overview of /Free format C Specs

Conditional and Iteration Operations
IF/ELSE/ELSEIF Operations
SELECT/WHEN/OTHER Operations
DOU/DOW/FOR/ITER/LEAVE Operations

File Processing
Avoiding the Fixed RPG Logic Cycle
File Specifications
Full Procedural Processing
Sequential Processing
Keyed Processing w CHAIN Operation
READ/READP Operations
SETLL/SETGT/READE/READPE
WRITE/UPDATE/DELETE Operations
Op Code Extenders   e.g. READ(EN)
I/O Error Handling using Built-In Functions
    and Legacy Resulting Indicators
Output Specifications

Advanced File Processing
Processing Partial Files
Keys and Key Lists
Key Data Structures

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

Printing Reports
Program Described Printing in O Specs
Handling Page Overflow OFLIND
Externally Described Printer Files
Overview of DDS for Printer Files

Interactive Workstation Programming
Screen Design Aid and Display File DDS
Screen Record Formats
Using Function Keys
The Indicator Data Structure
Display of Database Records
Using and Editing Input/Output Fields
DDS Field and Keyword Conditioning

Modular Programming
Using Internal Subroutines
Executing External Programs
Legacy CALL Operation w/ PLIST
Using IBM supplied APIs
Running CL commands from RPG IV

Overview of ILE Concepts
Prototype/Procedure Interface Definition
Using the CALLP Operation
CRTBNDRPG Command
Creating Modules and Programs
Creating Programs combining Multiple Modules

Additional Topics
CRTBNDRPG Compiler Options
Using the ILE Debug Utility STRDBG
Reviewing Compiler Listings
Diagnosing Runtime Errors
Review of New Free Format Specifications

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