

## IBM i (iSeries, AS/400) Control Language Programming Workshop

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### Course Summary

#### Description

This class provides a comprehensive introduction to the IBM i (AS/400) Control Language, and focuses on writing programs using CL. The students will write, test and debug numerous Control Language programs in increasing complexity. This class is current with all the newest Control Language enhancements and the latest IBM announcements. Testing, Troubleshooting and Debugging are a major focus.

#### Topics

- Introduction to Control Language
- Basic CL Programming
- Testing and Debugging
- Input/Output in a CL Program
- Error Handling and Messages
- Using IBM Supplied APIs in CL
- Selective Prompting for Commands
- Troubleshooting Program Errors and Abends
- Creating Proxy Commands
- Most Recent CL Enhancements

#### Prerequisite

Introduction to Programming Concepts and Facilities Workshop (AS15) or equivalent knowledge/experience.

#### Duration

Four Days

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### Course Outline

- I. **Introduction to Control Language**
  - A. What is CL?
  - B. As the JCL and CLIST Replacement
  - C. Command Names
  - D. Command Parameters
  - E. Using the Prompter F4=Prompt
  - F. Keyword and Positional Notation
  - G. The IBM i User Interface
- II. **Basic CL Programming**
  - A. Creating CL Programs
  - B. CLP and CLLE Programs
  - C. Creating CLLE Modules
  - D. Structure of a CL Source Member
  - E. Declaring Variables
  - F. Manipulating Variables
  - G. CL Control Structures
  - H. Using Complex Expressions
  - I. Restart-ability - Controlling Workflow
  - J. Error Handling using MONMSG
- III. **Testing and Debugging**
  - A. Using the CLP and CLLE Debuggers
- IV. **Input/Output in a CL Program**
  - A. Passing Parameters
  - B. Using external information
  - C. Using Files and Data Areas
  - D. Simple Display File Usage
  - E. Using \*OUTFILES and QTEMP
  - F. File Override Processing
- V. **Error Handling and Messages**
  - A. Understanding Message Files
  - B. Message Handling Commands
  - C. Error Handling in CL programs
  - D. Advanced Message Handling
- VI. **Using IBM Supplied APIs in CL**
  - A. QCMDEXC
  - B. QUSCMDLN
  - C. Other APIs
- VII. **Selective Prompting for Commands**
- VIII. **Troubleshooting Program Errors**
- IX. **and Abends**
- X. **Creating Proxy Commands**
- XI. **Most Recent CL Enhancements**
  - A. Structured Operations
  - B. Expanded Data Types
  - C. Multiple File Operations
  - D. Compiler Directing Commands
  - E. INCLUDE Command
  - F. Built-In Functions