

At the end of this workshop, the student will be able to code and test batch IMS COBOL programs to load a database, retrieve information from the database and update the database with adds, changes and deletes.

### Audience

- Applications Programmers
- Programmer/Analysts

### Course Length

- Five Days

### Prerequisites

- COBOL skills and general programming experience

### Teaching Methods

- Instructor-led or Self-directed with a Mentor
- Skeleton programs to reduce coding times
- Sample solutions, test data, setup instructions

### Learning Objectives

- Apply IMS batch programming concepts
- Differentiate between physical and logical databases.
- Recognize and interpret DBD gen statements
- Select a PSB to support program functions
- Construct SSA□s to handle data retrieval and update
- Code calls to retrieve data and update the database
- Detect and handle error situations
- Compile, link, and execute batch IMS programs
- Test/debug IMS batch programs
- Practice using DLT0

## Course Outline

### Conceptual Review

- Database concepts
- The Hierarchical Model
- The Physical Data Base
- The Logical Data Base
- Components in the IMS Batch Environment

### Working Storage Coding Considerations

- Function codes
- Qualified and Unqualified SSA□s
- I/O Area

### Creating a Database from Scratch

- The DBA□s role
- The Programmer□s role

### Workshop 1

#### Retrieving Data from the Database

- Sequential Retrieval
- Direct Retrieval for selected records
- Efficiency considerations: the Path Call
- Using DLT0 to test call patterns

### Workshop 2 & 3

#### Database Updates

- Test Environment Considerations
- Using DLT0
- Backing out changes
- Adding new records
- Applying changes to existing records
- Review of SSA considerations
- Multiple level control break
- Summary vs. Detail reporting

### Workshop 4 & 5

## Workshops

### Workshop 1: Initial Load of the Database from a flat file

Database test case description  
PSB selection  
Procedure Division coding considerations  
    The DL/I Insert Call (ISRT)  
    Success/Error handling  
JCL considerations

### Workshop 2: Sequential Retrieval of Data for reporting

Test case description and JCL  
PSB selection  
The GN, GNP function codes  
Simple but inelegant: Using DLT0  
The COBOL alternative:  
    SSA considerations  
    Procedure Division statements

### Workshop 3: Selective Retrieval of Data

Test case description and JCL  
The GU function code  
The PATH call  
SSA considerations  
I/O Area alternatives  
Procedure division considerations

### Workshop 4: Applying Changes from an Input File

Test case description and JCL  
PSB selection  
The ISRT and REPL function codes  
Procedure Division coding  
    Call structure  
    Success/Error Handling

### Workshop 5: Deleting Records

Test case description and JCL  
PSB selection  
The DLET function code  
Procedure Division coding  
    Call structure  
    Success/Error Handling