

## **IMS Basic Programming Techniques**

### **Course Summary**

#### **Description**

Students will gain an understanding of the hierarchical concepts of IMS; the IMS database structures and their impact on programs; the process of defining database structures; database access and update methods; methods of validating database access and updates; and, commonly used command codes.

#### **Objectives**

At the completion of this course, the student will be able to:

- Understand the basic IMS components (DBD and PSB)
- Be able to code batch IMS programs the read, insert, update and delete IMS databases
- Code all required programs such as calls, entry, SSAs (qualified and unqualified) and PCBs in the linkage section
- Understand how to work within a hierarchical structure
- Understand and utilize command codes including path calls

#### **Topics**

- Database Definition
- Program Specification Block
- CALL Statement and its Parameters
- Linkage Section of a COBOL Program
- RETRIEVE Functions (GU, GN, GNP)
- UPDATE Functions (ISRT, REPL, DLET)

#### **Audience**

Programmers responsible for writing application programs which will access IMS databases.

#### **Prerequisites**

Experience with a high level programming language such as COBOL, PL/1 or C. Experience with TSO/ISPF. Experience with program compilation procedures.

#### **Duration**

Three – five days (more intensive labs in longer format)

*Due to the nature of this material, this document refers to numerous hardware and software products by their trade names. References to other companies and their products are for informational purposes only, and all trademarks are the properties of their respective companies. It is not the intent of ProTech Professional Technical Services, Inc. to use any of these names generically*

## IMS Basic Programming Techniques

### Course Outline

- I. Introduction to IMS Concepts**
  - A. File structures
  - B. Hierarchical concepts
    - 1. SEGMENT
    - 2. FIELD
    - 3. Sequence field
    - 4. Search key
    - 5. Parent
    - 6. Child
    - 7. Root segment
    - 8. Database record
    - 9. Twins
    - 10. Maximums
- II. Basic Database Definition**
  - A. The purpose
  - B. Components
  - C. DBD statement
  - D. DATASET statement
  - E. SEGM statement
  - F. FIELD statement
  - G. Other optional statements
    - 1. LCHILD statement
    - 2. XDFLD statement
  - H. Other required statements
    - 1. DBDGEN statement
    - 2. FINISH statement
    - 3. END statement
- III. Program Specific Block**
  - A. The purpose
  - B. Application views
  - C. Control statements
  - D. PCB statement
- III. Program Specific Block**
  - E. SENSEG statement
  - F. SENFLD statement
  - G. PSBGEN statement
- IV. Program Components**
  - A. IMS and the program
  - B. IMS interface
  - C. Program setup overview
  - D. Program communication blocks
  - E. ENTRY statement
  - F. CALL statement
- V. Get Calls**
  - A. GU
  - B. GN
  - C. GNP
- VI. Update Calls**
  - A. Insert
  - B. Replace
  - C. Delete
- VII. JCL Considerations**
  - A. Compilation JCL
  - B. Execution JCL
- VIII. IMS Workshop**
  - A. IMS workshop
    - 1. Client
    - 2. Consultant
    - 3. Problem
    - 4. Solution
  - B. Procedures
  - C. Database description
  - D. Useful Copy Book members