

IM1010 – IMS/DB (Batch) Application Programming Workshop

Course Synopsis	Duration:	Five (5) days.
	Audience:	This course is intended for a Systems Analyst/Applications Programmer or an Applications Programmer who will be responsible for the development of IMS/DB application programs.
	Prerequisites:	Knowledge of COBOL/COBOL II and TSO/ISPF.
	Delivery Method:	Instructor led, Hands-on workshops

Brief Description	<p>This course provides a comprehensive presentation of the major features and capabilities of IMS/DB (Batch). IMS/DB programming concepts and coding techniques are explained. Detailed coding examples are provided to reinforce the class materials and hands-on workshop problems.</p>
	<p>Feminine</p>

Course Objectives What You'll Learn	<p>Upon successful completion of this course, the student will be able to:</p>
	<ul style="list-style-type: none"> • Understand the environment that supports the execution of IMS/DB application programs • Understand the purpose and program structure associated with an IMS/DB application program • Understand the use and coding requirements for SSAs, Boolean SSAs, Command Codes and Secondary Indexes • Complete numerous in-class exercises and hands-on programming (COBOL) workshops

Topics Covered	<p>I. IMS Overview</p> <ul style="list-style-type: none"> • IMS Overview • Hierarchical Database Structures <ul style="list-style-type: none"> – Definitions – Key Fields – Search Fields – Corporate Database: Key and Search Fields – Financial Database: Key and Search Fields • IMS/Database Access Methods • IMS/Operating System Access Methods 	<ul style="list-style-type: none"> • Corporate Database: DBD Coding Requirements • Financial Database: DBD Coding Requirements • "GSAM" Database: DBD Coding Requirements • The DBDGEN Utility
	<p>II. Database Descriptions (DBD)</p> <ul style="list-style-type: none"> • Use of the DBD Library • The Role of a DBD Library • DBD Coding 	<p>III. Program Specification Blocks (PSB)</p> <ul style="list-style-type: none"> • Use of the PSB Library • The Role of a PSB Library • PSB Coding <ul style="list-style-type: none"> – PSB #1: All Segments and Processing Options – PSB #2: All Segments and Different Processing Options – PSB #3: Some Segments and Different Processing Options • The PSBGEN Utility

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Topics
Covered Continued

IV. *Application Control Blocks (ACB)*

- The Role of a ACB Library
- The ACBGEN Utility

V. *Application Program Structure*

- Non-IMS File Considerations
- IMS Database Considerations
- Explanation of IMS Coding
- Coding and use of IMS Call Functions

VI. *Program Communication Blocks (PCB)*

- Format of a PCB Mask
- Coding PCB Masks

VII. *Segment Descriptions*

- Coding Segment Descriptions
 - Segment Descriptions: Corporate Database
 - Segment Descriptions: Financial Database

VIII. *Segment Search Arguments (SSAs)*

- Coding Qualified SSAs
- An Explanation of each Field within a Qualified SSA
- Coding Examples: Qualified SSAs
- Coding Unqualified SSAs
- Coding Examples: Unqualified SSAs
- SSA Coding Rules

IX. *Coding IMS Calls*

- Get Unique/Get Hold Unique calls
- Get Next/Get Hold Next calls
- Get Next within Parent/Get Hold Next within Parent Calls
- Insert Calls
- Replace and Delete Calls

X. *Boolean SSAs*

- Coding Boolean SSAs
- An Explanation of each Field within a Boolean SSA
- Boolean Expressions

XI. *Command Codes (Part I)*

- Use of Command Codes
- Coding Qualified SSAs with Command Codes
- Coding Unqualified SSAs with Command Codes
- Coding Boolean SSAs with Command Codes
- The Null Command Code
- The C Command Code
- The D Command Code
- Coding Example Associated with the D Command Code (Retrieval Call)
- Coding Example Associated with the D Command Code (Insert Call)

XII. *Command Codes (Part II)*

- The N Command Code
- Coding Example Associated with the N Command Code
- The F Command Code
- The L Command Code
- The P Command Code
- The U Command Code
- The V Command Code

XIII. *Secondary Index Concepts*

- Secondary Index File Structures
- Source and Target Segments
- Pointer Segments
- Storage of Pointer Segments

XIV. *Secondary Index Data Structures and DBD Coding Requirements*

- Secondary Data Structures
- Secondary Index DBD Requirements
- Secondary Index DBD Coding Example
- Secondary Index Segment Description
- Secondary Index SSAs

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Covered Continued**XV. Additional Secondary Index Topics**

- Defining a Secondary Index (To be used as an Index) within a PSB
- Defining a Secondary Index (To be Accessed as a Database) within a PSB
- Processing a Secondary Index as a Database
- Coding Example: Secondary Index used as an Index
- Coding Example: Secondary Index used as a Database

XVI. "Symbolic" Checkpoint and Restart Calls

- Why Issue Checkpoint Calls?
- "Symbolic" Checkpoint (PSB and Program considerations)
- "Symbolic" Checkpoint (Call Parameters)
- Restart Call Parameters

Appendix A: Logical Relationships

- Logical Relationship Concepts
- Unidirectional Logical Relationships
- Bidirectional Logical Relationships

Appendix B: Coding Example

- An Example of a Completely Coded IMS/DB Application Program Written in COBOL II