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education

course description

Pathway application programming I (COBOL) U4190S

course overview

Acquire the skills you need to develop Pathway applications quickly and efficiently. Through classroom discussion and hands-on programming exercises with an HP NonStop™ server, you will advance your application programming skills in the Pathway environment. You will have the choice of performing lab exercises using either the Enscribe or the NonStop SQL/MP database. After completing this 5-day course, you will understand how Pathway applications utilize the features of the system architecture and operating system, and you will be able to apply what you have learned to your own application programs.

audience

Application programmers who will be developing applications using the Pathway product.

benefits to you

- Writing server programs with COBOL85
- Context-free COBOL85 server programs that access Enscribe and or NonStop SQL/MP databases
- Using NonStop Transaction Monitor/MP (TM/MP) to ensure database consistency and integrity in the Pathway application environment
- Debugging requester and server programs using the Inspect facility
- Pathway system administration through configuration, starting, stopping, and monitoring components

pre-requisites

- Concepts and Facilities course
 - Six months of COBOL programming experience
- Recommended:
- Knowledge of ANSI-standard SQL, if you plan to perform the NonStop SQL labs

next steps

Pathway Application Programming II course

to order

You can order this course online at <http://education.hp.com>. At the site, select a country, then choose "registration" or "Book a course" and fill out the online registration form.

why hp education?

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module	key topics
Pathway introduction	<ul style="list-style-type: none">• Online transaction processing (OLTP) in the NonStop server environment• Requester-server approach to online transaction processing• Pathway application and its role in online transaction processing• Components of a Pathway environment• Starting PATHMON and PATHCOM• Client/server options available in the Pathway environment
Pathway configuration and operation	<ul style="list-style-type: none">• Starting PATHMON and PATHCOM• Difference between global and object-specific configuration parameters• Configuring global and object-specific parameters• Cold starting and cool starting a Pathway system• Starting the Pathway objects individually• Monitoring and maintaining a Pathway system• Shutting down a Pathway system• Capturing the configuration specifications for the current Pathway environment <p>Lab Exercise (30 minutes):</p> <ul style="list-style-type: none">• Establish your individual lab environment and practice starting and shutting down a Pathway application environment <p>Lab Exercise (1 hour):</p> <ul style="list-style-type: none">• Create, start, and exit from a Pathway application environment• Configure Pathway TCP, TERM, PROGRAM, and SERVER objects• Display Pathway object attributes and information• Shut down a Pathway application environment <p>Lab Exercise (1 hour):</p> <ul style="list-style-type: none">• Manage and monitor a Pathway application environment• Capture the current Pathway configuration parameters
SCREEN COBOL requesters	<ul style="list-style-type: none">• Steps a programmer performs to develop a SCREEN COBOL requester• Several functions of SCREEN COBOL• Similarities and differences between SCREEN COBOL and COBOL• Components of a basic SCREEN COBOL program• Writing basic SCREEN COBOL statements to display and accept data• Writing basic SCREEN COBOL statements to communicate with other requester programs• Using the SCREEN COBOL Utility Program (SCUP) to maintain pseudo-object libraries <p>Lab Exercise (1 hour):</p> <ul style="list-style-type: none">• Lay out and use a SCREEN COBOL screen• Define fields and attributes that make up a SCREEN COBOL screen
additional SCREEN COBOL topics	<ul style="list-style-type: none">• Writing basic SCREEN COBOL statements to communicate with server programs• Coding SCREEN COBOL verbs to enhance screen displays• Basic functions of TM/MP (Transaction Monitoring Facility, TMF) software• Writing SCREEN COBOL statements for a requester to operate in a TM/MP environment• Defining and using overlay screens in SCREEN COBOL <p>Lab Exercise (1.5 hours):</p> <ul style="list-style-type: none">• Code SCREEN COBOL requester programs• Code ACCEPT, PERFORM ONE, and CALL statements
Inspect debugging	<ul style="list-style-type: none">• Basic syntax and use of common Inspect commands used to debug programs• Necessary steps to debug a stand-alone process• Necessary steps to debug a SCREEN COBOL requester• Necessary steps to debug a Pathway server <p>Lab Exercise (2 hours):</p> <ul style="list-style-type: none">• Gain experience in enabling a database to be protected by the TM/MP facility• Demonstrate the difference between audited and nonaudited databases <p>Lab Exercise (2 hours):</p> <ul style="list-style-type: none">• Code overlay screens

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server fundamentals

- Basic function of a server
- Function of \$RECEIVE in interprocess communication
- Steps that make up the basic structure of a server program
- Coding the COBOL85 server program to use \$RECEIVE properly
- How server programs can utilize the enhanced capabilities of the D.xx versions of the NonStop Kernel operating system
- Why servers should be context-free
- Problems that can occur when servers have concurrent access to a database

Lab Exercise (1 hour):

- Code a Pathway server to use \$RECEIVE

Lab Exercise (1 hour):

- Establish an Inspect session in a Pathway application environment
- Use Inspect to examine the message passed between a requester and server in the Pathway application environment

server programs—Enscribe database access

- Coding SELECT statements to associate logical file names to physical file names
- Coding statements to open the database files in the correct mode for server access
- Using the NonStop server extension to solve positioning problems
- Coding file access statements to read, update, and delete database records
- Locking implications when accessing Enscribe files
- Establishing a Declaratives Section in a server to handle I/O errors
- Compiling a server program that accesses Enscribe files

server programs—NonStop SQL/MP database access

- Identifying and defining a host variable
- Coding an SQL/MP SELECT statement that accesses a single row of a NonStop SQL table
- Writing a variety of Data Manipulation Language (DML) statements to insert, update, and delete records in an SQL/MP database
- Operation of a cursor
- Constructing a series of statements that use a cursor
- Writing statements to report SQL/MP run-time errors
- Process used to compile a COBOL85 program with embedded SQL/MP statements
- Writing statements to compile a COBOL85 server program that accesses a NonStop SQL/MP database

Lab Exercise (1.5 hours):

- Code simple server programs to access an Enscribe or SQL/MP database
- Code a variety of statements and then compile and test your server program

Lab Exercise (2 hours):

- Code slightly more advanced statements to access an Enscribe or NonStop SQL/MP database to include the insertion of new information based on screen input

Lab Exercise (5 hours)—Optional:

- Put into practice some of the advanced concepts learned about SCREEN COBOL

Lab Exercise (3 hours)—Optional:

- Gain a complete picture of a Pathway requester server pair
- Design and build copy libraries, the DDL source, and a simple database

for more information

For more information on HP Education Services, contact any of our worldwide offices or visit our worldwide web site on the internet at <http://education.hp.com>

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9/02 U4190S

