Enterprise COBOL Unicode and XML Support (2 Day)

Benefits
Students who complete this course will be able to use the Unicode and XML processing capabilities of the IBM Enterprise COBOL for z/OS and OS/390 compiler. This enables students to build routines to convert Web-originated XML transactions to classic COBOL data structure based transactions and back.

Audience
Experienced z/OS or OS/390 COBOL application programmers. Students should already be familiar with the LE COBOL compiler family and its capabilities.

Prerequisites
At the very least, the student entering this course should have a strong programming background in COBOL. The installation must be using the Enterprise COBOL compiler and have Unicode support services activated.

Major Topics Include
- Introduction to Unicode
- National data type
- Intrinsic functions: DISPLAY-OF, NATIONAL-OF
- Introduction to XML
- The XML PARSE statement
- The XML Special registers
- XML Events
- Coding processing procedures
- Extracting character string fields while parsing
- Extracting numeric fields while parsing
- Handling exceptions while parsing
- The XML GENERATE statement
- Handling attributes and namespaces
- The Enterprise COBOL V4R1 enhancements to XML work
- XML PARSE with validation

Exercises
There are ten hands-on exercises.
Course Objectives
On successful completion of this course, the student, with the aid of the appropriate reference materials, should be able to:

1. Describe the attributes of Unicode, and explain the difference between the three formats of Unicode data (UTF-8, UTF-16, UTF-32)
2. Code Unicode data items, Unicode literals, and Unicode hex literals in COBOL programs
3. Use intrinsic functions to convert between code pages including EBCDIC, ASCII, and Unicode
4. Describe the basic rules for XML document structure
5. Invoke the IBM high speed XML parser from a COBOL program to extract data from an XML document into a COBOL record structure
6. Use the XML GENERATE statement to create XML data from a COBOL data structure
7. Use Enterprise COBOL 4.1 or later facilities to work with namespaces and attributes, and to parse XML documents a record or a segment at a time
8. Use Enterprise COBOL 4.2 or later to validate an XML document against a schema stored in an external file or an internal data item.

Enterprise COBOL Unicode and XML Support - Topical Outline

COBOL Support For Unicode
What Is Unicode?
Unicode Support in Enterprise COBOL
When Will You Need To Use Unicode Support?
Things To Watch Out For
Computer Exercise: Set Up and Handling Unicode

COBOL Support for XML: The Set Up
What is XML?
Processing XML Documents
Preparing to Use the COBOL XML Parser
Computer Exercise: Prepare Data for Parsing

COBOL Support for XML: XML PARSE
The XML PARSE Statement
The XML Special Registers
The XML Events
Coding the Processing Procedure
Computer Exercise: Basic XML Parsing

Peak Solutions, Inc.  125 North Enola Drive, Enola, PA  17025  717-541-1357
Enterprise COBOL Unicode and XML Support - Topical Outline (continued)

COBOL Support for XML: Processing Procedure Considerations
   What To Do In A Processing Procedure
   Extracting Data During Parsing
   Computer Exercise: Extracting Data During Parsing

   Extracting Data During Parsing, continued
   Computer Exercise: Extracting Multiple Data Fields During Parsing

   Extracting Numeric Data During Parsing
   Early Termination of Parse
   Exceptions in Parsing
   Restrictions in Processing Procedures
   Computer Exercise: Extracting Numeric Data During Parsing

Parsing Pure Passed XML

COBOL XML Support: The XML GENERATE Statement
   The “Wrapper” paradigm
   The XML GENERATE statement
   XML GENERATE and exceptions
   Computer Exercise: Creating XML Output

Attributes, Namespaces, and Enterprise COBOL V4 Enhancements
   COBOL, XML, and Attributes
   COBOL, XML, and Namespaces
   Enterprise COBOL V4 Enhancements
      Compiler option XMLPARSE
      Namespace support
      Attributes in generation
      Record level processing
      XML header generation
   Computer Exercise: Using Some of the New Features

XMLPARSE(XMLSS) Differences
   Processing Differences for XML PARSE
   XML PARSE migration issues
   Processing Differences for XML GENERATE
   Computer Exercise: Code clean up

Enterprise COBOL V4R2 Enhancements
   Introduction to XML Schemas
   Preparing XML schemas for PARSE
   XML PARSE ... VALIDATING
   Computer Exercise: Schemas and Validation