Oracle Database 11g: Use XML DB

Duration: 3 Days

What you will learn

This course introduces students to Oracle XML DB, a feature of the Oracle Database. Students learn to store, retrieve, generate, and manipulate XML data in Oracle Database 11g.

Students learn about the different storage models for storing XML documents in Oracle XML DB. Students query XMLType data by using SQL/XML standard functions and XQuery. Students generate and manipulate XML data and learn to use Oracle XML DB Repository. In addition, students access and manipulate repository resources using protocols such as SQL, and PL/SQL. Students learn to manage changes in an XML schema after registering it with Oracle XML DB. Students also learn how to import and export XML data.

Oracle SQL Developer is the major development tool in this course. SQL*Plus is also available as an optional tool.

Learn To:

Store and retrieve XML Data in Oracle XML DB
Generate XML Data from relational data in the database
Use XQuery to query, generate, and transform XML data
Manipulate XML Data in Oracle XML DB
Use Oracle XML DB Repository
Export and Import XMLType Data

Audience

Application Developers
Database Administrators
Developer
End Users
Forms Developer
PL/SQL Developer
Support Engineer
Technical Consultant

Prerequisites

Required Prerequisites
Experience in basic use of Oracle RDBMS, including SQL DDL and DML, and PL/SQL
Experience in use of XML required
Oracle Database: Program with PL/SQL

Suggested Prerequisites
Oracle Database 11g: Introduction to SQL
Oracle Database: SQL Fundamentals II
Course Objectives
Explain the basic concepts of Oracle XML DB
Store XML Data in Oracle XML DB
Retrieve XML Data in Oracle XML DB
Create and use indexes on XML data
Generate XML from relational data in the database
Use XQuery to query, generate, and transform XML data
Manipulate XML Data in Oracle XML DB
Manage changes to an XML schema that is registered in Oracle XML DB
Use Oracle XML DB Repository
Export and import XMLType data using Oracle Data Pump

Course Topics

**Introduction to Oracle XML DB**
Oracle XML DB Features
Oracle XML DB concepts and terminology
Using Oracle SQL Developer

**Storing XML Data in Oracle XML DB**
XMLType
Using XML Schema with Oracle XML DB
Choosing an XMLType Storage Model
Object-relational Storage
CLOB Storage
Binary XML Storage
XMLType Storage Models: Relative Advantages
Specifying SQL Constraints

**Retrieving XML Data in Oracle XML DB**
Retrieving XML Content: Overview
XQuery: Review
Using XMLQuery to query relational data
Joining tables by using XMLQuery
Querying an XMLType table by using XMLQuery
Querying an XMLType table by using XMLTable
Using the XMLExists function
Using the XMLCast function

**Indexing XMLType Data**
Indexing XMLType Data: Overview
Using Function-based Index on XMLType Data
Using a Full-text Index
XMLIndex Index: Components
Creating an XMLIndex Index
Dictionary Views for XMLIndex
Specifying the Paths for XMLIndex
Asynchronous maintenance of XMLIndex Index

**Generating and Transforming XML Data**
Using XQuery to Generate XML Data
Using SQL/XML standard functions: XMLELEMENT, XMLATTRIBUTES, XMLFOREST, XMLCONCAT
Using SQL/XML standard functions: XMLAGG, XMLSERIALIZE, XMLCOMMENT, XMLPI, XMLPARSE
Using Oracle database SQL functions to generate XML
Using the DBMS_XMLEN GENER PL/SQL Package
Generating Recursive XML with a Hierarchical Query
Creating XMLType Views
Transforming XML

Using XQuery with Oracle XML DB: Additional Use Cases
Using XQuery: Overview
Static Type-Checking of XQuery Expressions
XMLTable Versus XMLQuery
Querying an XML document in Oracle XML DB Repository
Using XQuery with PL/SQL: Binding Dynamic Variables
XQuery Support in SQL*Plus

Manipulating XML Data
Using SQL functions to modify XML data
UPDATEXML function
INSERTCHILDXML function
INSERTXMLBEFORE function
APPENDCHILDXML function
DELETEXML function

Oracle XML DB Repository
Overview of Oracle XML DB Repository
Oracle XML DB Repository: Architecture
Hierarchical Structures in the Repository
XML DB Repository Services
Oracle XML DB Resource API for PL/SQL
Creating folders and resources using PL/SQL
Accessing resources: SQL, Navigational, and Internet Access
Using Native Oracle XML DB Web Services

Using Oracle XML DB Repository
Access Control Lists
Managing an ACL on a Resource
Managing Privileges
Compound Documents
Repository Events
Implementing Repository Events
Implementing Repository Events: Example

Managing Changes in an XML Schema
XML Schema Evolution
Copy-based XML Schema Evolution
Using DBMS_XMSCHHEMA.copyEvolve Procedure
Copy-based XML Schema Evolution: Example
Using DBMS_XMSCHHEMA.copyEvolve: Guidelines, Disadvantages
In-Place XML Schema Evolution
In-Place XML Schema Evolution: Example
In-Place XML Schema Evolution: Supported operations, Guidelines, and Restrictions
Exporting and Importing XML Data

SQL*Loader: Overview
Loading XMLType Data by Using SQL*Loader
Oracle Data Pump Components
Exporting and Importing XMLType Tables and Columns
Exporting XML Schema-based XMLType Tables
Exporting XMLType Data: Example
Importing XMLType Data: Example

Workshop
Workshop I
Workshop II