Oracle Database 11g: Use XML DB

Duration: 4 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

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Audience

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

Related Training

Required Prerequisites

Experience in basic use of Oracle RDBMS, including SQL DDL, and DML, and PL/SQL

Basics of XML
XML Fundamentals Ed 1.1  NEW

*Suggested Prerequisites*
Oracle Database: SQL Fundamentals I
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 and XML Review*
- Oracle XML DB Features
- Oracle XML DB Concepts and Terminology
- Reviewing the Basic XML Concepts and Terminology

*Storing XML Data in Oracle XML DB*
- Using XMLType
- Choosing an XMLType Storage Model
- Binary XML Storage
- Object-relational Storage
- CLOB Storage
- XMLType Storage Model Use Case Scenarios
- XMLType Storage Models: Relative Advantages and Disadvantages
- Specifying SQL Constraints and Loading XMLType Data

*Using XML Schema with Oracle XML DB*
- XML Schema Support in Oracle Database 11g
- XMLType and XML Schema
Registering, Deleting, Re-compiling, Generating, and Evolving XML Schemas
Local and Global XML Schemas
Oracle XML Schema Annotations
Creating XML Schema-Based XMLType Tables
Copy-Based XML Schema Evolution
In-Place XML Schema Evolution

Partitioning XMLType Tables and Columns
Partitioned Tables and Indexes
Why Partitioning?
Ordered Collection Tables
Equipartitioning
Advantages of Partitioning an OCT
Partitioning XMLType Table: During Table Creation
Maintaining a Partition
Steps to Partition an XMLTYPE Table Stored as Binary XML

Retrieving XML Data in Oracle XML DB
Retrieving XML Content: Overview
XQuery Support in Oracle Database
Using XMLQuery and XMLTable
Querying Table or View Data with the XQuery fn:collection Function
Using XMLQuery to Query Relational Data
Querying the Database: XMLType Data
Querying an XMLType Table by Using XMLQuery and XMLTable
Using XMLEXISTS, XMLCAST, DOC, and COLLECTION

Indexing XMLType Data
XMLIndex: Overview and Benefits
Structured and Unstructured Components of XMLIndex
Logical Parts of the Unstructured Component of an XMLIndex
Creating an XMLIndex Index Unstructured Component
Creating Secondary Indexes for the XMLIndex Index Unstructured Component
Dictionary Views for XMLIndex
XMLIndex Path Subsetting
Specifying Paths for XMLIndex

Generating XML Data
Using XQuery to Generate XML
Using the XMLELEMENT, XMLATTRIBUTES, and the XMLFOREST Functions
Generating Nested XML Elements
Using the XMLCONCAT and the XMLAGG Functions
Generating Master-Detail Content
Using the XMLSERIALIZE, XMLCOMMENT, XMLPI, and XMLPARSE Functions
Using the XMLCOLATTVAL, SYS_XMLGEN, SYS_XMLAGG, and XMLROOT Functions
Using the DBMS_XMLGEN PL/SQL Package

Transforming and Manipulating XML Data
Transforming XML: Overview and Benefits
Transformation Functions
Using the XMLTransform() Function
Creating XMLType Views
Using SQL Functions to Modify XML Data
Using the UPDATESQL, INSERTCHILDXML, and INSERTXMLBEFORE SQL Functions
Using the APPENDCHILDXML SQL Function
Using the DELETESQL SQL Function

Working With the Oracle XML DB Repository
Oracle XML DB Repository: Overview and Architecture
Hierarchical Structures in the Repository
Links in Oracle XML DB: Hard and Weak Links
Oracle XML DB Repository Services
Oracle XML DB Resource API for PL/SQL (DBMS_XDB)
Creating Folders and Resources by Using PL/SQL
Accessing Resources by Using SQL Access and Navigational Access
Working With Access Control Lists, Compound Documents, and Repository Events

Using Native Oracle XML DB Web Services
What Is a Web Service?
Web Service Standards and Architecture
Oracle XML DB Web Service: Overview
Adding a Web Services Configuration Servlet
Verifying the Addition of a Web Services Configuration Servlet
Granting Access to Web Services
Viewing the WSDL Using HTTP
Accessing PL/SQL Stored Procedures Using a Web Service

Exporting and Importing XML Data
SQL*Loader: Overview
Loading XMLType Data by Using SQL*Loader
Loading XMLType Data Stored in a Control File
Loading XMLType Data Stored in a Separate File
Oracle Data Pump: Components
Exporting and Importing XMLType Tables and Columns
Exporting XML Schema-Based XMLType Tables
Export and Import Modes

Workshop