Oracle BI 12c: Build Repositories Ed 1

Oracle Database

DURATION	MODULES	COURSE CODE
5 Days	**23 Lectures**	**—**

Course Overview

This Developing Applications with Java EE 6 on WebLogic Server 12c training teaches you to build & deploy enterprise applications that comply with Java Platform, Enterprise Edition 6 Web Profile. Create a web-based application that's accessible from desktop & mobile using JSF technology.

What You Will Learn

Course Introduction

- Lesson Agenda
- Instructor and Class Participants
- Training Site Information
- Course Audience
- Course Prerequisites
- Course Goal
- Course Objectives
- Course Methodology
- Course Materials
- Course Agenda
- Summary

Repository Basics

- Objectives
- Oracle BI Server Architecture
- Oracle BI Presentation Services
- Oracle BI Server
- Data Sources
- Oracle BI Repository
- Oracle BI Client Installer
- Oracle BI Administration Tool

- Physical Layer
- Objects in the Physical Layer
- Business Model and Mapping Layer
- Objects in the Business Model and Mapping Layer
- Business Model Mappings
- Measures
- Presentation Layer
- Presentation Layer Mappings
- Presentation Layer Defines the User Interface
- Repository Directory
- Repository Modes
- Uploading a Repository
- Reloading Server Metadata
- Sample Analysis Processing
- Uploading a Repository to BI Cloud Services
- Summary
- Practice 2-1 Overview: Exploring an Oracle BI Repository
- Quiz

Building the Physical Layer of a Repository

- Objectives
- Physical Layer
- Physical Layer Objects
- Database Object
- Database Object: General Properties
- Database Object: Features
- Connection Pool
- Schema Folder
- Physical Table
- Physical Table Properties
- Physical Column
- Key Column
- Physical Table: Alias
- Joins
- Sample Apps Scenario
- Implementation Steps
- Create a New Repository File
- Provide Repository Information
- Select the Data Source
- Select Metadata Types for Import
- Select Metadata Objects for Import
- Verify and Edit Connection Pool Properties
- Verify Objects for Import
- Verify the Import in the Physical Layer
- Verify Connectivity

- Create Alias Tables
- Define Keys and Joins
- Define Keys by Using the Physical Table Properties Dialog Box
- Open the Physical Diagram
- Define Foreign Key Joins
- Use the Joins Manager
- Print the Physical Diagram
- Design Tips for the Physical Layer
- Summary
- Practice 3-1 Overview: Sample Apps Business Scenario
- Practice 3-2 Overview: Creating a Repository and Importing a Data Source
- Practice 3-3 Overview: Creating Alias Tables
- Practice 3-4 Overview: Defining Keys and Joins
- Quiz

Building the Business Model and Mapping Layer of a Repository

- Objectives
- Business Model and Mapping (BMM) Layer
- Objects in the Business Model and Mapping Layer
- Business Model Mappings
- Objects in the Business Model and Mapping Layer
- Business Model
- Logical Tables
- Logical Table Sources
- Logical Table Source: Column Mappings
- Logical Columns
- Logical Primary Keys
- Logical Joins
- Measures
- BISAMPLE Example
- Implementation Steps
- 1. Create the Logical Business Model
- 2. Create the Logical Tables and Columns
- 3. Define the Logical Joins
- 4. Modify the Logical Tables and Columns
- 5. Define the Measures
- Printing the Business Model Diagram
- Design Tips
- Summary
- Practice 4-1 Overview: Creating the Business Model
- Practice 4-2 Overview: Creating Simple Measures
- Quiz

Building the Presentation Layer of a Repository

- Objectives

- Presentation Layer
- Subject Areas
- Presentation Tables
- Presentation Columns
- Presentation Layer Mappings
- Defining the User Interface in the Presentation Layer
- Nesting Presentation Tables
- Aliases
- Controlling Presentation Layer Object Visibility
- BISAMPLE Example
- Implementation Steps
- 1. Create a New Subject Area
- 2. Edit Presentation Layer Names
- 3. Reorder Tables
- 4. Delete Columns
- 5. Rename Columns
- 6. Reorder Columns
- Considerations
- Design Tips
- Summary
- Practice 5-1 Overview: Creating the Presentation Layer
- Quiz

Testing and Validating a Repository

- Objectives
- Validating a Repository
- BISAMPLE Example
- Consistency Check
- Checking Consistency
- Consistency Check Manager
- Using the validaterpd Utility to Check Repository Consistency
- Marking a Business Model Available for Queries
- Confirming a Consistent Repository
- Uploading a Repository
- Query Logging
- Setting a Logging Level
- Logging Levels
- Validating by Using the Analysis Editor
- Inspecting the Query Log
- Using Session Monitor to Inspect the Query Log
- Using nqlogviewer to Inspect the Query Log
- Opening obis1-query.log to Inspect the Query Log
- Oracle BI SELECT Statement: Syntax
- Oracle BI SELECT Statement Compared with Standard SQL
- Summary

- Practice 6-1 Overview: Testing the Repository
- Quiz

Managing Logical Table Sources

- Objectives
- Table Structures
- Business Challenge
- Business Solution
- BISAMPLE Example: Adding Multiple Sources to a Logical Table Source (LTS)
- Importing Additional Dimension Tables
- 1. Import Additional Tables
- 2. Create Aliases
- 3. Define Keys and Joins
- 4. Identify Physical Columns for Mappings
- Adding a New Mapping to an Existing Logical Table Source
- 1. Create a New Logical Column
- 2. Map a New Physical Source
- 3. Create the Column Mapping
- Adding a New Mapping to an Existing Logical Table Source: Result
- Adding a New Logical Table Source
- 1. Identify a Table that Stores Additional Information
- 2. Add a New Logical Table Source
- 3. Rename the New Logical Table Source
- 4. Verify Column Mappings
- 5. Rename the Logical Columns
- 6. Add the Columns to the Presentation layer
- 7. Verify Your Work
- Modeling for OLTP Systems
- Summary
- Practice 7-1 Overview: Importing Additional Dimension Tables
- Practice 7-2 Overview: Adding a New Mapping to an Existing
- Logical Table Source
- Practice 7-3 Overview: Adding a New Logical Table Source
- Quiz

Adding Calculations to a Fact

- Objectives
- Business Problem
- Business Solution
- Creating Calculation Measures by Using Existing Logical Columns
- 1. Create a New Logical Column
- 2. Specify Logical Columns as the Source
- 3. Build a Formula
- Creating Calculation Measures by Using Physical Columns
- 1. Create a New Logical Column

Working with Logical Dimensions

- Summary
- Practice 9-1 Overview: Creating Logical Dimension Hierarchies
- Practice 9-2 Overview: Creating Level-Based Measures
- Practice 9-3 Overview: Creating Share Measures
- Practice 9-4 Overview: Creating Dimension-Specific Aggregation Rules
- Practice 9-5 Overview: Creating Presentation Hierarchies
- Quiz

Working with Logical Dimension Hierarchies

- Objectives
- More Logical Dimensions Types
- Parent-Child Logical Dimensions
- Parent-Child Hierarchy: Example
- Parent-Child Logical Table
- Parent-Child Relationship Table
- Creating a Parent-Child Logical Dimension
- 1. Create a Logical Dimension Object
- 2. Set the Member Key
- 3. Set the Parent Column
- 4. Open the Parent-Child Relationship Table Settings Dialog Box
- 5. Enter Parent-Child Relationship Table Script Information
- 6. Enter Parent-Child Relationship Table Details
- 7. Preview Scripts
- 8. Confirm Parent-Child Relationship Table Settings
- 9. Confirm Changes to the BMM Layer
- 10. Confirm Changes to the Physical Layer
- 11. Modify the Physical Layer
- 12. Modify the BMM Layer
- 13. Create the Presentation Hierarchy
- 14. Verify Your Work
- Ragged and Skipped-Level Dimensions
- Creating Ragged and Skipped-Level Dimensions
- Summary
- Practice 10-1 Overview: Creating Parent-Child Hierarchies
- Practice 10-2 Overview: Creating Logical Dimensions with
- Ragged and Skipped-Level Hierarchies
- Quiz

Managing Usage Tracking

- Objectives
- Business Challenges
- Business Solution: Oracle BI Usage Tracking
- BISAMPLE Example
- Steps to Enable Usage Tracking
- 1. Create the Usage-Tracking Tables

- 2. Import the Usage-Tracking Table
- 3. Build a Usage-Tracking Business Model
- 4. Stop Oracle BI Components
- 5. Set Direct Insertion Parameters in NQSConfig.ini
- 6. Start Oracle BI Components
- 7. Test the Results
- Analyzing Usage-Tracking Data
- Summary
- Practice 11-1 Overview: Setting Up Usage Tracking
- Quiz

Using Model Checker and Aggregates

- Objectives
- Business Challenge
- Business Solution: Aggregate Tables
- Model Check Manager
- Model Check Manager Dialog Box
- Oracle BI Aggregate Navigation
- Aggregated Facts
- Modeling Aggregates
- BISAMPLE Example
- Steps to Implement Aggregate Navigation
- 1. Import Tables and Create Aliases
- 2. Create Joins
- 3. Create the Fact Logical Table Source and Mappings
- 4. Specify the Fact Aggregation Content
- 5. Specify Content for the Fact Detail Source
- 6. Create the Dimension Logical Table Source and Mappings
- 7. Specify the Dimension Aggregation Content
- 8. Specify Content for the Dimension Detail Source
- 9. Test Results for Levels Stored in Aggregates
- 10. Test Results for Data That Is Above or Below Levels
- Aggregate Persistence Wizard
- Model Checker
- Aggregate Persistence Wizard: Steps
- Aggregate Persistence Wizard Steps
- 1. Open the Aggregate Persistence Wizard
- 2. Specify a File Name and Location
- 3. Select the Business Model and Measures
- 4. Select Dimensions and Levels
- 5. Select the Connection Pool, Container, and Name
- 6. Review the Aggregate Definition
- 7. View the Complete Aggregate Script
- 8. Verify that the Script was Created
- 9. Run the Aggregate Persistence Script

- 10. Verify Aggregates in the Physical Layer
- 11. Verify That Aggregates Are Populated
- 12. Verify Aggregates in the BMM Layer
- 13. Test Results for Levels Stored in Aggregates
- Setting the Number of Elements
- Enable Aggregates
- Generate Fragmented Aggregates in Aggregate Persistence
- Troubleshooting Aggregate Navigation
- Considerations
- Summary
- Practice 12-1 Overview: Using Aggregate Tables
- Practice 12-2 Overview: Using the Aggregate Persistence Wizard
- Quiz

Using Partitions and Fragments

- Objectives
- Business Challenge
- Business Solution: Oracle BI Server
- Partition
- Partitioning by Fact
- Partitioning by Value
- Partitioning by Level
- Complex Partitioning
- BISAMPLE Example: Value-Based (Order Date)
- Implementation Steps
- Specify Fragmentation Content
- Summary
- Practice 13-1 Overview: Modeling a Value-Based Partition
- Quiz

Using Repository Variables

- Objectives
- Variables
- Variable Manager
- Types of Variables
- Repository Variables
- Static Repository Variables
- Dynamic Repository Variables
- Session Variables
- System Session Variables
- Nonsystem Session Variables
- Initialization Blocks
- Initialization Block: Example
- Initialization Block Example: Edit Data Source
- Initialization Block Example: Edit Data Target

- BISAMPLE Example
- Implementation Steps
- 1. Create a Dedicated Connection Pool
- 2. Open the Variable Manager
- 3. Create an Initialization Block
- 4. Edit the Data Source
- 5. Edit the Data Target
- 6. Test the Initialization Block Query
- 7. Use the Variable to Determine Content
- 8. Verify Your Work
- Summary
- Practice 14-1 Overview: Creating Dynamic Repository Variables
- Practice 14-2 Overview: Using Dynamic Repository Variables as Filters
- Quiz

Modeling Time Series Data

- Objectives
- Time Comparisons
- Business Challenge: Time Comparisons
- Oracle BI Solution: Model Time Comparisons
- Time Dimensions
- Time Series Functions
- Time Series Grains
- BISAMPLE Example
- Steps to Model Time Series Data
- 1. Identify a Time Dimension and Chronological Keys
- 2. Create a Measure by Using the AGO Function
- 3. Use a Column with the AGO Function to Create Additional Measures
- 4. Create a Measure by Using the TODATE Function
- 5. Create a Measure by Using the PERIODROLLING Function
- 6. Add New Measures to the Presentation Layer
- 7. Test the Results
- Summary
- Practice 15-1 Overview: Creating Time Series Calculation Measures
- Quiz

Modeling Many-to-Many Relationships

- Objective
- Business Challenge and Solution
- Bridge Table
- BISAMPLE Example
- Steps to Model a Bridge Table
- 1. Import Tables
- 2. Create the Physical Model
- 3. Create the Logical Model

Setting an Implicit Fact Column

Importing Metadata from Multidimensional Data Sources

Security

- Objectives
- Business Challenge: Security Strategy
- Business Solution: Oracle BI Security
- Managing Oracle BI Security
- Oracle BI Default Security Model
- Default Security Realm
- Default Authentication Providers
- Default Users
- Default Groups
- Default Application Roles
- Default Application Policies
- Default Presentation Services Privileges
- Default Application Role Hierarchy: Example
- BISAMPLE Example
- Create Groups
- Create Group Hierarchies
- Create Users
- Assign Users to Groups
- Create Application Roles
- Map Application Roles
- Application Role Hierarchies
- Verify Security Settings in Oracle BI
- Verify Security Settings in the Repository
- Set Up Object Permissions
- Set Up Object Permissions and Verify
- Permission Inheritance
- Permission Inheritance: Example
- Set Row-Level Security (Data Filters)
- Set Query Limits
- Set Timing Restrictions
- Summary
- Practice 19-1 Overview: Exploring Default Security Settings
- Practice 19-2 Overview: Creating Users and Groups
- Practice 19-3 Overview: Creating Application Roles
- Practice 19-4 Overview: Setting Up Object Permissions
- Practice 19-5 Overview: Setting Row-Level Security (Data Filters)
- Practice 19-6 Overview: Setting Query Limits and Timing Restrictions
- Quiz

Cache Management

- Objective
- Business Challenge
- Business Solution: Oracle BI Server Query Cache

- Advantages of Caching
- Costs of Caching
- Query Cache: Architecture
- Monitoring and Managing the Cache
- Cache Management Techniques
- Using Fusion Middleware Control to Configure Caching
- Using NQSConfig.ini to Manually Edit Cache Parameters
- Setting Caching and Cache Persistence for Tables
- Using the Cache Manager
- Inspecting SQL for Cache Entries
- Modifying the Cache Manager Column Display
- Inspecting Cache Reports
- Purging Cache Entries Manually Using the Cache Manager
- Purging Cache Entries Automatically
- Using Event Polling Tables
- Seeding the Cache
- Cache Hit Conditions
- Summary
- Practice 20-1 Overview: Enabling Query Caching
- Practice 20-2 Overview: Modifying Cache Parameters
- Practice 20-3 Overview: Seeding the Cache
- Quiz

Setting Up and Using the Multiuser Development Environment

- Objectives
- Business Challenge
- Business Solution: Oracle BI Multiuser Development Environment (MUDE)
- Oracle BI Repository Development Process
- SCM Three-Way Merge Process
- Oracle BI Repository Three-Way Merge Process
- Multiuser Development Projects
- Overview: Oracle BI Multiuser Development
- BISAMPLE Example
- Steps to Set Up an Oracle BI MUDE
- 1. Create Projects
- 2. Edit Projects
- 3. Set Up a Shared Network Directory
- 4. Copy the Master Repository to the Shared Directory
- 5. Set Up a Pointer to the Multiuser Directory
- Making Changes in an Oracle BI MUDE
- 1. Check Out Projects
- 2. Administration Tool Tasks During Checkout
- 3. Modify Metadata
- 4. Multiuser Options During Development
- 5. Publish Local Changes to Master Repository

- 6. Define Merge Strategy
- 7. Track Project History
- History Menu Options
- Deleting History Items
- Source Control Management System
- MDS XML Repository Storage
- Summary
- Practice 21-1 Overview: Setting Up a Multiuser Development Environment
- Practice 21-2 Overview: Using a Multiuser Development Environment
- Quiz

Performing a Patch Merge

- Objectives
- Patch Merge
- Creating a Patch
- Applying a Patch
- Steps to Perform a Patch Merge
- 1. Compare Current and Original Repositories
- 2. Equalize Objects
- 3. Create a Patch File
- 4. Apply the Patch
- 5. Make Merge Decisions
- 6. Verify Your Work
- Summary
- Practice 22-1 Overview: Performing a Patch Merge
- Quiz

Managing Metadata and Working with Service Instances

- Objectives
- Singleton Data Dictionary
- BI Service Instance
- SDD and Service Instance Directory Structure
- BI Application Archive (BAR) Files
- Using BAR Files to Move Between Environments
- Exporting a Service Instance into a BAR file
- Example: Exporting a Service Instance into a BAR file
- Importing a BAR File into a Service Instance
- Example: Importing a BAR file into a Service Instance
- Managing Service Instances
- Quiz
- Summary
- A Using Administration Tool Utilities
- Objectives A-2
- Wizards and Utilities A-3
- Accessing Wizards and Utilities A-4