

## Oracle 10g: Data Warehousing Fundamentals

**Duration:** 3 Days

### What you will learn

In this course, participants study the issues involved in planning, designing, building, populating, and maintaining a successful data warehouse. Participants learn the reasons why data warehousing is a compelling decision support solution in today's business climate. During the course, participants examine warehouse technologies; they also examine Oracle's approach to a successful data warehouse implementation by identifying proven Data Warehouse and Business Intelligence (DW and BI) technologies and tools provided by Oracle. Students are provided tours of Oracle Warehouse Builder through viewlets. Participants identify features of Oracle10g database, which aid the data warehouse implementation. Students are given a set of data warehouse implementation templates (documents such as project management plan, data models, and so on.), they analyze the case study provided to them, and answer the questions based on the case study. In addition, students will also perform self-guided practices on Analytical Workspace Manager (AWM) and Oracle Warehouse Builder.

**Learn To:** Define the terminology and explain the basic concepts of data warehousing  
Identify the technology and tools from Oracle to implement a successful data warehouse  
Define the decision support purpose and end goal of a data warehouse  
Describe the OLAP and Data mining techniques and tools  
Develop familiarity with the various technologies required to implement a data warehouse  
Explain the implementation and organizational issues surrounding a data warehouse project using a case study

### Audience

Business Analysts  
Business Intelligence Developer  
Data Modelers  
Data Warehouse Administrator  
Data Warehouse Analyst  
Data Warehouse Developer

### Prerequisites

#### *Suggested Prerequisites*

Knowledge of database technologies, client-server  
Knowledge relational server technology is suggested

### Course Objectives

Define the terminology and explain the basic concepts of data warehousing  
Define the decision support purpose and end goal of a data warehouse  
Develop familiarity with the various technologies required to implement a data warehouse  
Identify the technology and tools from Oracle to implement a successful data warehouse  
Describe methods and tools for extracting, transforming, and loading data  
Identify the tools for accessing and analyzing warehouse data  
Identify the new features of Oracle Database 10g that aid in implementing the data warehouse  
Describe the OLAP and Data mining techniques and tools  
Explain the implementation and organizational issues surrounding a data warehouse project

### Course Topics

## **Data Warehousing and Business Intelligence**

- Understanding the evolution of data warehouses from MIS
- Describing the differences between OLTP and OLAP
- Identifying the business drivers for data warehouses
- Identifying the role of business intelligence in today's market
- Recognizing the tools and technology from Oracle
- Identifying the components of Oracle E-business Intelligence

## **Defining Data Warehouse Concepts and Terminology**

- Identifying a common, broadly accepted definition of a data warehouse
- Describing the differences between dependent and independent data marts
- Identifying some of the main warehouse development approaches
- Recognizing some of the operational properties and common terminology of a data warehouse
- Exploring the case study introduced

## **Business, Logical, and Dimensional Modeling**

- Describing the data warehouse modeling issues
- Identifying the data structures for data warehouses
- Defining business and logical models
- Defining dimensional model

## **Physical Modeling: Sizing, Storage, Performance, and Security Considerations**

- Describing how to translate the dimensional model to physical model
- Explaining data warehouse sizing techniques and test load sampling
- Describing data warehouse partitioning methods
- Understanding indexing types and strategies
- Explaining parallelism in data warehouse operations
- Explaining the importance of security in data warehouses
- Identifying the tools and technologies provided by Oracle

## **The ETL Process: Extracting Data**

- Outlining the ETL (Extraction, Transformation, and Loading) processes for building a data warehouse
- Identifying ETL tasks, importance, and cost
- Explaining how to examine data sources
- Identifying extraction techniques and methods
- Identifying analysis issues and design options for extraction processes
- Listing the selection criteria for the ETL tools
- Describing Oracle's solution for ETL process

## **The ETL Process: Transforming Data**

- Defining transformation
- Identifying possible staging models
- Identifying data anomalies and eliminate them
- Describing the importance of data quality
- Describing techniques for transforming data
- Listing Oracle's features and tools that can be used to transform data

## **The ETL Process: Loading Data**

- Explaining key concepts in loading warehouse data
- Outlining how to build the loading process for the initial load
- Identifying loading techniques
- Describing the loading techniques provided by Oracle

Identifying the tasks that take place after data is loaded

Explaining the issues involved in designing the transportation, loading, and scheduling processes

### **Refreshing Warehouse Data**

Describing methods for capturing changed data

Explaining techniques for applying the changes

Describing the Change Data Capture mechanism and refresh mechanisms supported in Oracle10g

Describing the techniques for purging and archiving data and outlining techniques supported by Oracle

Outlining the final tasks, such as publishing the data, controlling access, and automating processes

### **Summary Management**

Discussing summary management and Oracle implementation of summaries

Describing materialized views

Identifying the types, build modes, and refresh methods for materialized views

Explaining the query rewrite mechanism in Oracle

Describing the significance of Oracle dimensions

### **Leaving Metadata Trail**

Defining warehouse metadata, its types, and its role in a warehouse environment

Developing a metadata strategy

Outlining the Common Warehouse Meta-model (CWM)

Describing Oracle Warehouse Builder's compliance with OMG-CWM)

### **OLAP and Data Mining**

Defining Online Analytical Processing

Comparing ROLAP and MOLAP

Describing the benefits of OLAP and RDBMS integration

Describing the benefits of OLAP for end users and IT

Define data mining

Describe the tools and technology from Oracle for OLAP and data mining

### **Data Warehouse Implementation Considerations**

Describing the project management plan

Specifying the requirements for the implementation

Describing the metadata repository, technical architecture and other considerations

Describing post implementation change management considerations