Oracle 11G Data Warehousing fundamentals I

A QUI S'ADRESSE CE STAGE ?

Responsables d'applications
Ingénieurs support
Développeurs d'applications
Analystes de data warehouse
Développeurs
Administrateurs de data warehouse

QUELS SONT LES OBJECTIFS ?

Define the terminology and explain the basic concepts of data warehousing
Describe methods and tools for extracting, transforming, and loading data
Identify some of the tools for accessing and analyzing warehouse data
Identify the technology and some of the tools from Oracle to implement a successful data warehouse
Define the decision support purpose and end goal of a data warehouse
Describe the benefits of partitioning, parallel operations, materialized views, and query rewrite in a data warehouse
Explain the implementation and organizational issues surrounding a data warehouse project
Use materialized views and query rewrite to improve the data warehouse performance
Develop familiarity with some of the technologies required to implement a data warehouse

QUELS SONT LES PRÉ-REQUIS ?

Knowledge of general data warehousing concepts
Knowledge of client-server technology
Knowledge of relational server technology

COMBIEN DE TEMPS ?

3 jours

MÉTHODES PÉDAGOGIQUES

Alternance Théorie/Ateliers pratiques

ISTAM
Institut Supérieur des Technologies Avancées et Management

PROGRAMME

Introduction

- Course Objectives
- Course Schedule
- Course Pre-requisites and Suggested Pre-requisites
- The sh and dm Sample Schemas and Appendices Used in the Course
- Class Account Information
- SQL Environments and Data Warehousing Tools Used in this Course
- Oracle 11g Data Warehousing and SQL Documentation and Oracle By Examples
- Continuing Your Education: Recommended Follow-Up Classes

Data Warehousing, Business Intelligence, OLAP, and Data Mining

- Data Warehouse Definition and Properties
- Data Warehouses, Business Intelligence, Data Marts, and OLTP
- Typical Data Warehouse Components
- Warehouse Development Approaches
- Extraction, Transformation, and Loading (ETL)
- The Dimensional Model and Oracle OLAP
- Oracle Data Mining

Defining Data Warehouse Concepts and Terminology

- Data Warehouse Definition and Properties
- Data Warehouse Versus OLTP
- Data Warehouses Versus Data Marts
- Typical Data Warehouse Components
- Warehouse Development Approaches
- Data Warehousing Process Components
- Strategy Phase Deliverables
- Introducing the Case Study: Roy Independent School District (RISD)

Business, Logical, Dimensional, and Physical Modeling

- Data Warehouse Modeling Issues
- Defining the Business Model
- Defining the Logical Model
- Defining the Dimensional Model
- Defining the Physical Model: Star, Snowflake, and Third Normal Form
- Fact and Dimension Tables Characteristics
- Translating Business Dimensions into Dimension Tables
- Translating Dimensional Model to Physical Model

Database Sizing, Storage, Performance, and Security Considerations

- Database Sizing and Estimating and Validating the Database Size
- Oracle Database Architectural Advantages
- Data Partitioning
- Indexing
- Optimizing Star Queries: Tuning Star Queries
- Parallelism
- Security in Data Warehouses
- Oracle's Strategy for Data Warehouse Security

Oracle 11G Data Warehousing fundamentals II

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PROGRAMME

The ETL Process: Extracting Data

- Extraction, Transformation, and Loading (ETL) Process
- ETL: Tasks, Importance, and Cost
- Extracting Data and Examining Data Sources
- Mapping Data
- Logical and Physical Extraction Methods
- Extraction Techniques and Maintaining Extraction Metadata
- Possible ETL Failures and Maintaining ETL Quality
- Oracle's ETL Tools: Oracle Warehouse Builder, SQL*Loader, and Data Pump

The ETL Process: Transforming Data

- Transformation
- Remote and Onsite Staging Models
- Data Anomalies
- Transformation Routines
- Transforming Data: Problems and Solutions
- Quality Data: Importance and Benefits
- Transformation Techniques and Tools
- Maintaining Transformation Metadata

The ETL Process: Loading Data

- Loading Data into the Warehouse
- Transportation Using Flat Files, Distributed Systems, and Transportable, Tablespaces
- Data Refresh Models: Extract Processing Environment
- Building the Loading Process
- ata Granularity
- Loading Techniques Provided by Oracle
- Postprocessing of Loaded Data
- Indexing and Sorting Data and Verifying Data Integrity

Refreshing the Warehouse Data

- Developing a Refresh Strategy for Capturing Changed Data
- User Requirements and Assistance
- Load Window Requirements
- Planning and Scheduling the Load Window
- Capturing Changed Data for Refresh
- Time- and Date-Stamping, Database triggers, and Database Logs
- Applying the Changes to Data
- Final Tasks

Oracle 11G Data Warehousing fundamentals III

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PROGRAMME

Materialized Views

- Using Summaries to Improve Performance
- Using Materialized Views for Summary Management
- Types of Materialized Views
- Build Modes and Refresh Modes
- Query Rewrite: Overview
- Cost-Based Query Rewrite Process
- Working With Dimensions and Hierarchies

Leaving a Metadata Trail

- Defining Warehouse Metadata
- Metadata Users and Types
- Examining Metadata: ETL Metadata
- Extraction, Transformation, and Loading Metadata
- Defining Metadata Goals and Intended Usage
- Identifying Target Metadata Users and Choosing Metadata Tools and Techniques
- Integrating Multiple Sets of Metadata
- Managing Changes to Metadata

Data Warehouse Implementation Considerations

- Project Management
- Requirements Specification or Definition
- Logical, Dimensional, and Physical Data Models
- Data Warehouse Architecture
- ETL, Reporting, and Security Considerations
- Metadata Management
- Testing the Implementation and Post Implementation Change Management
- Some Useful Resources and White Papers