Oracle R Enterprise Essentials

This Oracle R Enterprise Essentials training will teach you how to leverage the Oracle Database as a high performance computing platform from the powerful R statistical programming language and environment. Overcome the memory limitations of the open source client R engine. Prepare data, perform statistical analysis, and build predictive models on Big Data data sets that are generally impossible with open source R. Generate graphics and invoke R scripts from SQL for integration with the Oracle stack!

Learn To:

- Start up R, load ORE, and connect to Oracle Database.
- Use common constructs of the R language.
- Use the ORE Transparency Layer.
- Use ORE for embedded R execution.
- Use ORE predictive analytics packages.
- Use ROracle.

Benefits To You

By taking this course, you will get a chance to manipulate database data using the R language. You will develop the knowledge and skills to use Oracle Database for predictive analysis using R. Leverage the database server machine for executing R scripts from SQL and R, both individually and in a data-parallel and task-parallel manner.

More Information

Oracle has adopted R as a language and environment to support statisticians, data analysts, and data scientists in performing statistical data analysis and advanced analytics, as well as generating sophisticated graphics. Oracle R Enterprise (ORE) is a component of the Oracle Database Advanced Analytics Option. ORE makes the open source R statistical programming language and environment ready for the enterprise and big data.

Prerequisites

Suggested Prerequisite

- Oracle Database 11g: Data Mining Techniques Ed 1

Required Prerequisite

- Experience with statistics or R programming experience

Audience

- Data Scientist
- Data Scientist

Objectives

- Start up R, load ORE, and connect to Oracle Database
- Apply R Language Basics
- Use the ORE Transparency Layer

- Use ORE for embedded R execution
- Use ORE predictive analytics packages
- Interact directly with Oracle Database objects using ROracle

Topics

- Introducing Oracle R Enterprise
    - Using R: What, Who, and Why?
    - R User Interfaces
    - Oracle's Strategy for R
- Getting Started with ORE
    - Prerequisites for Using ORE
    - Starting R and Loading ORE
    - Basic Database Interaction with ORE
- Introducing the R Language and Environment
    - Accessing R Help
    - R language basics
    - Debugging with R
- Producing Graphs in R and ORE
    - R Graph Types
    - R Graphics Packages
    - Overloaded Functions for ORE
- Using the ORE Transparency Layer - Part 1
    - Introducing the Transparency Layer
    - Working with Oracle Database
    - ORE Packages, Classes, and Functions
    - Common Data Transformations and Data Type Mapping
- Using the ORE Transparency Layer - Part 2
    - Object Persistence
    - Ordering Framework
    - In-database Sampling and Random Partitioning
    - Case Study Examination
- ORE Embedded R Execution - R Interface
    - Rationale for Embedded R Execution
    - Embedded R Execution
    - Connecting to Databases from an Embedded R Function
    - Generating Graphs within an Embedded R Function
- ORE Embedded R Execution - SQL Interface
    - Embedded R Execution
    - Using R Scripts in the Database Repository
    - Generating Output Using rq*Eval Functions
    - Parallel Execution for Embedded R Scripts
- Using ORE Predictive Analytics - Part 1
    - Using Functions in the OREdm Package
    - Using Functions in the OREmodels Package
- Using ORE Predictive Analytics - Part 2
    - Scoring data within R models in the database
    - Preparing Time Series Data
    - Exponential Smoothing for Time Series Data Predictions
- Using ROracle for Direct Database Access
    - What is ROracle?
    - Authentication
    - Table Access Methods
    - Query Execution

- Rollback