2019

Lab Manual

Databases lab

Introduction

Safa Khader Alwan
Al-Balqa Applied University
10/3/2019

Student information:

Student name	
Student number	
Grade	

Overview

The purpose of this lab is to get you familiar with Oracle and its use in our environment. Even though the material is not very challenging, please do the lab. I'm available during lab time to resolve any system related problems.

Objectives

After completing this lesson, you should be able to do the following:

- List the features of Oracle 10g
- Discuss the theoretical and physical aspects of a relational database
- Describe the Oracle implementation of the RDBMS
- Understand the goals of the course

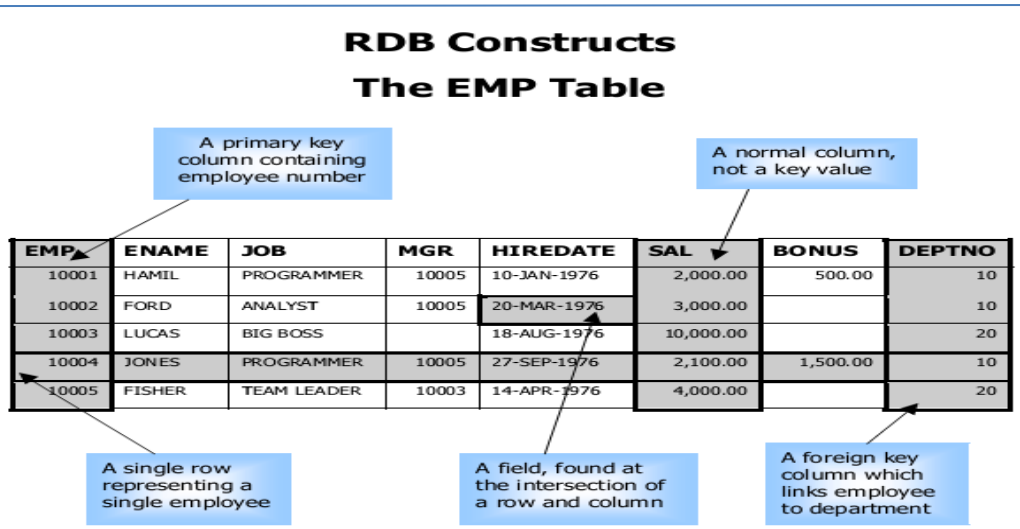
Goals of the Course

After completing this course, you should be able to do the following:

- Identify the major structural components of Oracle Database 10g
- Retrieve row and column data from tables with the SELECT statement
- Create reports of sorted and restricted data
- Employ SQL functions to generate and retrieve customized data
- Run data manipulation language (DML) statements to update data in Oracle Database 10g
- Obtain metadata by querying the dictionary views

Definition of a Relational Database

A relational database is a collection of relations or two-dimensional tables.

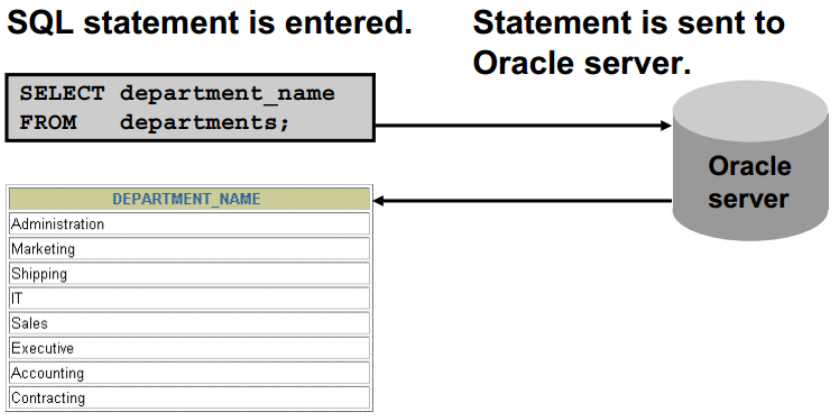


- Each row of data in a table is uniquely identified by a primary key (PK).
- You can logically relate data from multiple tables using foreign keys (FK).

A relational database:

- Can be accessed and modified by executing structured query language (SQL) statements
- Contains a collection of tables with no physical pointers
- Uses a set of operators

Communicating with an RDBMS Using SQL



Introduction to SQL

Very briefly, before we get into actually using SQL, let's summarize what can be done with SQL:

- Query the Database - SQL allows you to easily query data held on the database. Queries can be very simple and only take up a couple of lines or they can be quite complex and take up several pages of text.
- Change Data held within the Database - Changing data is just as easy as querying the data. Existing data can be modified, and you can remove data or insert new data.
- Change the Structure of the Database - SQL allows you to actually modify the structure of the database, meaning you can easily create new database objects such as tables, indexes, views, sequences…etc.

SQL commands

Most SQL commands fall into one of three categories:

- Queries - You will use these the most. They are for retrieving data from the database, and they are neither DML nor DDL.
- Commands that allow you to modify the data held within the database - these commands are referred to as Data Manipulation Language commands or DML for short.
- Commands which allow you to modify the structure of the database - these commands are known as Data Definition Language commands or DDL for short

  During this course we will learn how to use commands from all categories.

SELECT **INSERT** **UPDATE** **DELETE**	**Data Manipulation Language commands or DML**
CREATE ALTER **DROP** **RENAME** **TRUNCATE** **COMMENT**	**Data Definition Language commands or DDL**
GRANT **REVOKE**	**Data control language (DCL)**
COMMIT **ROLLBACK** **SAVEPOINT**	**Transaction control**

Retrieving Data Using the SQL SELECT Statement

- List the capabilities of SQL SELECT statements
- Execute a basic SELECT statement
- Differentiate between SQL statements and iSQL*Plus commands

Capabilities of SQL SELECT Statements