**Assignment 1**

**Problem Statement :**

Study of open source relational database: MySQL

**Objectives:**

1) Understand MySQL the open source relational SQL Database Management System.

2) Understand the data manipulation with the help of MySQL.

3) Understand managing and storing data.

**Outcomes:**

1) Learn the installation of MySQL.

2) Should be able to perform MySQL Queries to do CRUD (Create, Read, Update and Delete)/

3) Should be able to understand how the data gets stored into the database.

**S/W & H/W Requirements:**

1) Operating System (Windows / Ubuntu)

2) MySQL Database

**Theory:**

**What are Relational Databases ?**

It is a database in which data stored in it is inter-related. This type of data is arranged in columns and rows.

**What is MySQL ?**

It is a type of relational database in which data is stored in the form of tables with columns and rows. Tables can be related to each other.

MySQL is written in C and C++. SQL is a language programmers use to create, modify and extract data from relational databases, as well as control user access to the database. In addition to relational databases and SQL, an RDBMS like MySQL works with an operation system to implement a relational database in a computer’s storage system, manages users, allows for network access and facilitates testing database integrity and creation of backups

SQL uses ***sqldump -u root -p --all-databases > C:\backup\backup\_data.sql*** to backup the data to file backup\_data.sql.

To restore database use ***sql -u root -p < C:\backup\backup\_data.sql.***

MSQL has stand-alone clients that allow users to interact with a MySQL database using SQL, but more often MySQL is used with other programs to implement application that need relational database capability. MySQL is a component of the LAMP stack, Apache, MySQL, Perl/PHP/Python. MySQL is used by Drupal, WordPress, Facebook, Twitter, Youtube.

**What is Oracle ?**

Oracle database is a relational database management system. It is known as Oracle database, OracleDB or simply Oracle. It is produced and marketed by Oracle Corporation.

Oracle database is the first database designed for enterprise grid computing. The enterprise grid computing provides the most flexible and cost effective way to manage information and applications.

Following are the four editions of the Oracle database.

**Enterprise Edition:** It is the most robust and secure edition. It offers all features, including superior performance and security.

**Standard Edition:** It provides the base functionality for users that do not require Enterprise Edition's robust package.

**Express Edition (XE)**: It is the lightweight, free and limited Windows and Linux edition.

**Oracle Lite:** It is designed for mobile devices.

**Installing MySQL on Ubuntu using command line:**

1) sudo apt-get update

2) curl -OL https://dev.mysql.com/get/mysql-apt-config\_0.8.15-1\_all.deb

3) sudo dpkg -i mysql-apt-config\_0.8.15-1\_all.deb

4) sudo apt-get install mysql-server -y

5) sudo systemctl statis mysql.service

6) sudo mysql

You will be now in mysql shell.

**Basic Statements For MySQL:**

1) Creating Database

CREATE DATABASE db\_name;

2) Deleting Database

DROP DATABASE db\_name;

3) Switching to Database

USE db\_name

3) Showing tables in Database

SHOW TABLES;

4) Creating Tables

CREATE TABLE table\_name(column1 data\_type constraint,column2 data\_type);

5) View structure of table

DESCRIBE table\_name;

6) See the constraints

SHOW CREATE TABLE table\_name;

7) Delete table

DROP TABLE table\_name;

**Conclusion:**

Learnt how to install MySQL in ubuntu as well as windows. Learnt about storage of data into a database. We can establish relation between two different tables and can avoid redundancy of data.