CS262 Lab Assignment 7

For this assignment, you can create a interface using console only.

If the **com.mysql.jdbc.Driver** showing **class not found error** then you can follow the following link

https://www.javatpoint.com/example-to-connect-to-the-mysql-database

You can start the assignment with the following code

```
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.PreparedStatement;
import java.sql.ResultSet;
import java.sql.SQLException;
import java.sql.Statement;
import java.util.Date;

public class MySQLAccess {
    private Connection connect = null;
    private Statement statement = null;
    private PreparedStatement preparedStatement = null;
    private ResultSet resultSet = null;

    public void readDataBase() throws Exception {
        try {
            // This will load the MySQL driver, each DB has its own driver
            Class.forName("com.mysql.jdbc.Driver");
            // Setup the connection with the DB
            connect = DriverManager
                    .getConnection("jdbc:mysql://localhost:3306/dbName",
"sqluser",”sqluserpassword");
```

Question 1.) You have already created the following database,

Consider the following relational schema for the Office of the Controller of Examinations Application.

Student (Rollno, Name, Dob, Gender, Doa, Bcode);

Implement a check constraint for

- Gender

Branch (Bcode, Bname, Dno);

Department (Dno, Dname);

Course (Ccode, Cname, Credits, Dno);

Branch_Course (Bcode, Ccode, Semester);

Enrolls (Rollno, Ccode, Sess, Grade);

Implement a check constraint for grade Value Set (‘S’, ‘A’, ‘B’, ‘C’, ‘D’, ‘E’, ‘U’);

Students are admitted to Branches and they are offered by Departments. A branch is offered by only one department.

Each branch has a set of Courses (Subjects). Each student must enroll during a semester. Courses are offered by Departments. A course is offered only by one department. If a student is unsuccessful in a course he/she must enroll for the course during next session. A student has successfully completed a course if the grade obtained by is from the list (A, B, C, D, and E).

A student is unsuccessful if he/she have grade 'U' in a course.

Primary Keys are underlined.

a.) Create a program to interact with the database.

b.) Create a program to create a new branch, department and course. At the time of creating a course also map the course with the branch.

c.) Create a program which will take the student information from the user and insert it into the database.

d.) Create a program which entrolls a student to anyone of the already created courses. If user enters the course which is not already present in the course relation then give a message to the user that the course does not exist.

Create the following listing using program

e.) List details of Departments that offer more than 3 branches.

f.) List the details of Departments that offer more than 6 courses.

g.) List the details of courses that are common for more than 3 branches.

h.) List students who got 'S' in more than 2 courses during single enrollment.

Question 2.) Consider the following relations for an Order Processing Database application in a Company.

Customer (**Customerno varchar2 (5), Cname varchar2 (50)**);

Implement check constraints to check Customerno starts with **'C'**.

Cust_Order (**Orderno varchar2(5), Odate Date,** Customerno **references Customer, Ord_amt number(8)**);

Implement check constraints to check Orderno starts with '**O**'.

Ord_amt is derived attribute (default value is 0);

Item (**Itemno varchar2 (5), Item_name varchar2 (30), unit_price number (5)**);

Implement check constraint to check Itemno starts with **'I'**.

Order_item (**Orderno references Cust_order,** Itemno **references item, qty number (3)**);

a.) Implement a program which make an entry for a new customer in the customer table. If any of the check constraint violates, give the message to the user with the information about the constraint.

b.) Implement a program which make an entry for a new item in the item table. If any of the check constraint violates, give the message to the user with the information about the constraint.

c.) Implement a program which make an entry for a new order. For any new order two entries will me made, one in Cust_Order relation and another in Order_item relation.

d.) Implement a program to edit the value of Ord_amt of existing order.

Create the program to list the following details to the user,

e.) List the details of customers who have placed more than 3 orders.

f.) List details of items whose price is less than the average price of all items in each order.

g.) List the orderno and number of items in each order.

h.) List the details of items that are present in 25% of the orders.