Date: -24-05-2021

1)Default Interface Methods

Vehicle.java

```
public interface Vehicle {
    String getBrand();
    String speedUp();
    String slowDown();
    default String turnAlarmOn() {
        return "Turning the vehicle alarm on.";
    }
    default String turnAlarmOff() {
        return "Turning the vehicle alarm off.";
    }
}
```

Car.java

```
public class Car implements Vehicle {
   private String brand="BMW";
   @Override
   public String getBrand() {
      return brand;
   }
   @Override
   public String speedUp() {
      return "The car is speeding up.";
   }
   @Override
   public String slowDown() {
      return "The car is slowing down.";
   }
    }
```

Demo.java

```
public class Demo{

  public static void main(String args[]) {
        Vehicle car = new Car();
         System.out.println(car.getBrand());
         System.out.println(car.speedUp());
         System.out.println(car.slowDown());
         System.out.println(car.turnAlarmOn());
         System.out.println(car.turnAlarmOff());
 }
  }
```

2) Static Method:-

```
interface MyInterface{
  public void demo();
  public static void display() {
    System.out.println("This is a static method");
  }
}
public class Demo{
  public void demo() {
    System.out.println("This is the implementation of the demo
method");
  }
  public static void main(String args[]) {
    Demo obj = new Demo();
    obj.demo();
    MyInterface.display();
  }
}
```

3) SQL JDBC Connections:-

Create table:-

```
CREATE TABLE `users` (
   `user_id` int(11) NOT NULL AUTO_INCREMENT,
   `username` varchar(45) NOT NULL,
   `password` varchar(45) NOT NULL,
```

```
    `fullname` varchar(45) NOT NULL,
    `email` varchar(45) NOT NULL,
    PRIMARY KEY (`user_id`)
);
```

Program:-

```
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.SQLException;
import java.sql.Statement;

/**
 * Create Statement JDBC Example
 * @author Ramesh Fadatare
 *
 */
public class Demo {
        public static void main(String[] argv) throws SQLException
{
                String dbURL =
"jdbc:mysql://localhost:3306/demovirtusa";
                String username = "root";
                String password = "MyNewPass";

                try {

                   Connection conn =
DriverManager.getConnection(dbURL, username, password);

                   if (conn != null) {
                      System.out.println("Connected");
                   }
                } catch (SQLException ex) {
                   ex.printStackTrace();
                }
    }
}
```

4) CRUD Operations: -

a) Insert :-

```
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.PreparedStatement;
import java.sql.SQLException;
import java.sql.Statement;

public class Demo {

  public static void main(String args[]) {

        String dbURL = "jdbc:mysql://localhost:3306/demovirtusa";
        String username = "root";
        String password = "MyNewPass";

        try {

            Connection conn = DriverManager.getConnection(dbURL,
username, password);

            if (conn != null) {
                System.out.println("Connected");
                String sql = "INSERT INTO Users (username, password,
fullname, email ) VALUES (?, ?, ?, ?)";

                PreparedStatement statement = conn.prepareStatement(sql);
                statement.setString(1, "bhavi");
                statement.setString(2, "bhavi@gmail.com");
                statement.setString(3, "India");
                statement.setString(4, "bhavi@123");

                int rowsInserted = statement.executeUpdate();
                if (rowsInserted > 0) {
                    System.out.println("A new user was inserted
successfully!");
                }
            }
```

```
            conn.close();
          } catch (SQLException ex) {
            ex.printStackTrace();
          }
  }
}
```

b) Select

```
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.PreparedStatement;
import java.sql.SQLException;
import java.sql.Statement;
import java.sql.*;

public class Demo {

  public static void main(String args[]) {

        String dbURL = "jdbc:mysql://localhost:3306/demovirtusa";
        String username = "root";
        String password = "MyNewPass";

        try {

            Connection conn = DriverManager.getConnection(dbURL,
    username, password);

            if (conn != null) {
                String sql = "SELECT * FROM Users";

                Statement statement = conn.createStatement();
                ResultSet result = statement.executeQuery(sql);

                int count = 0;

                while (result.next()){
                    String name = result.getString(2);
                    String pass = result.getString(3);
```

```
                String fullname = result.getString("fullname");
                String email = result.getString("email");

                String output = "User #%d: %s - %s - %s - %s";
                System.out.println(String.format(output, ++count,
name, pass, fullname, email));
            }
        }

        conn.close();
    } catch (SQLException ex) {
        ex.printStackTrace();
    }
  }
}
```

c) UPDATE:-

```
    try {

        Connection conn = DriverManager.getConnection(dbURL,
    username, password);

        if (conn != null) {
            String sql = "UPDATE Users SET password=?,
    fullname=?, email=? WHERE username=?";

            PreparedStatement statement =
    conn.prepareStatement(sql);
            statement.setString(1, "123456789");
            statement.setString(2, "William Henry Bill Gates");
            statement.setString(3, "bill.gates@microsoft.com");
            statement.setString(4, "bhavi");

            int rowsUpdated = statement.executeUpdate();
            if (rowsUpdated > 0) {
            System.out.println("An existing user was updated
    successfully!");
            } else {
                System.out.println("Not updated");
```

```
                }
            }

            conn.close();
        }
```

d) DELETE

```
    try {

            Connection conn = DriverManager.getConnection(dbURL,
    username, password);

            if (conn != null) {
                String sql = "DELETE FROM Users WHERE
    username=?";

                PreparedStatement statement =
    conn.prepareStatement(sql);
                statement.setString(1, "bhavi");

                int rowsDeleted = statement.executeUpdate();
                if (rowsDeleted > 0) {
                    System.out.println("A user was deleted
    successfully!");
                }
            }

            conn.close();
        }
```

5) JUNIT

```
@Test
    void Addtest() {
        MyJunit junit = new MyJunit();
        int result=junit.add(12, 8);
       assertEquals(20, result);
    }
```