**19CSE204-Object Oriented Paradigm**

**Semester --- 3**


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## OVERVIEW:

The application works using the object-oriented concepts for the ***Crop Prediction Console***. It includes concepts of inheritance, abstraction, exceptional handling etc.

The working of this application (i.e., ***Crop Prediction Console***) provides user the required services like finding the suitable crop, fertilizer to maximise the yield, area-based queries etc. The use of oops concepts makes the application more efficient and effective.

## TEAM MEMBERS:

| Rollo/ Name | Concept | Contribution | Justify your contribution | Program Name |
|---|---|---|---|---|
| **NIKUNJ** | Main Class | CLI design, preparing queries, method calls | | Main.java |
| **SRIDHAR** | Methods | Create, update, delete, select, drop, linking to database | | Database Operation. java |
| **ADITYA** | Creation of database | Created table state and district | | |
| **SRIKAR** | Setting up database environment | Setting up mysql on localhost | | |
| **HARSHA** | Debugging and testing | Checking if code works | | |

**Program:**

***Main.java:***

```
package com.amrita;

import java.sql.SQLException;
import java.util.Scanner;

public class Main {
    public static void main(String[] args) throws
SQLException {
        Scanner user_input = new Scanner(System.in);
        DatabaseOperations d = new DatabaseOperations();

        String query;

        System.out.println("=============Welcome to the
Crop Prediction Console===============");
        System.out.println("Please select an option to
operate a database ");
        System.out.println("1. Insert");
        System.out.println("2. Update");
        System.out.println("3. Delete");
        System.out.println("4. Select everything from a
table");
        System.out.println("5. Drop Table");
        System.out.println("==================Please
Select an option======================");

        int option = user_input.nextInt();
        if(option == 1){
            String table_name;
            System.out.println("Please enter the table
name : ");
            user_input.nextLine();
            table_name = user_input.nextLine();

            int State_id = user_input.nextInt();
            user_input.nextLine();
            String State_name = user_input.nextLine();
```

```
            query = "INSERT INTO "+table_name+" VALUES
('"+State_id+"','"+State_name+"')";
            d.Insert(query);
        }
        else if (option == 2){
            String table_name;
            System.out.println("Please enter the table
name : ");
            user_input.nextLine();
            table_name = user_input.nextLine();
            System.out.println("Please enter the column
you want to make changes in : ");
            String UpdateCol = user_input.nextLine();
            System.out.println("Please enter the value you
want to change : ");
            String Value = user_input.nextLine();
            System.out.println("Please enter the State_id
to change the corresponding row: ");
            int changes = user_input.nextInt();
            query = "UPDATE "+table_name+" SET " +
UpdateCol + "='" + Value + "' WHERE State_id = " +changes;
            d.Update(query);
        }
        else if(option == 3){
            String table_name;
            System.out.println("Please enter the table
name : ");
            user_input.nextLine();
            table_name = user_input.nextLine();
            System.out.println("Please enter the id of the
entry to delete : ");
            int DeleteEntry = user_input.nextInt();
            query = "DELETE FROM " +table_name+ " WHERE
State_id ="+DeleteEntry;
            d.Delete(query);
        }
        else if(option == 4){
            String table_name;
            System.out.println("Please enter a table name
```

```
: ");
            user_input.nextLine();
            table_name = user_input.nextLine();
            query = "SELECT * FROM "+table_name;
            d.Select(query);
        }
        else if(option == 5){
            String table_name;
            System.out.println("Please enter a table name
: ");
            user_input.nextLine();
            table_name = user_input.nextLine();
            query = "DROP TABLE "+table_name;
            d.Drop(query);
        }
    }
}
```

***DatabaseOperation.java:***

```
package com.amrita;

import java.sql.*;

public class DatabaseOperations{
    public String username = "root";
    public String password = "root";
    public String Dburl =
"jdbc:mysql://localhost:3306/crop_prediction_based_on_soil
_nutrient_estimation";

    public void Insert(String query) throws SQLException {
        try{
            int rows_effected = 0;
            //creating the connection to the database
            Connection connect =
DriverManager.getConnection(Dburl,username,password);

            //creating a statement && executing a query
```

```
            Statement statement =
connect.createStatement();

            //excecuting a query
            rows_effected =
statement.executeUpdate(query);
            //prinring the result
            System.out.println(rows_effected + " rows have
been inserted.");
            //closing the connection
            connect.close();
        } catch (SQLException throwables) {
            throwables.printStackTrace();
        }
    }
    public void Update(String query) throws SQLException{
        try{
            int rows = 0;

            //creating the connection to the database
            Connection connection =
DriverManager.getConnection(Dburl,username,password);

            // creating a statement && executing the query
here
            Statement statement =
connection.createStatement();
            //executing a query
            rows = statement.executeUpdate(query);
            //printing the rows affected
            System.out.println(rows + " rows have been
updated.");
            //closing the connection
            connection.close();
        } catch (SQLException throwables) {
            throwables.printStackTrace();
        }
    }
    public void Delete(String query) throws SQLException{
        try{
```

```
            int rows_effected = 0;
            //creating a connection to the database
            Connection connection =
DriverManager.getConnection(Dburl,username,password);
            //creating a statement
            Statement statement =
connection.createStatement();
            //executing a query
            rows_effected =
statement.executeUpdate(query);
            //printing the rows effected statement;
            System.out.println(rows_effected + " have been
updated");
            connection.close();
        } catch (SQLException throwables){
            throwables.printStackTrace();
        }
    }
    public void Select(String query) throws SQLException{
        try{
            int count = 0;
            //creating a connection to the database
            Connection connection =
DriverManager.getConnection(Dburl,username,password);
            //creating a statement
            Statement statement =
connection.createStatement();
            //storing the result of executed query in a
result set object
            ResultSet set = statement.executeQuery(query);
            while(set.next()){
                int id = set.getInt("State_id");
                String name = set.getString("State_Name");
                System.out.println(id + "    " + name);
                count++;
            }
            System.out.println(count + " rows are
Selected");
        } catch (SQLException throwables) {
```

```
            throwables.printStackTrace();
        }
    }
    public void Drop(String query) throws SQLException{
        try{
            //creating a connection
            Connection connection =
DriverManager.getConnection(Dburl,username,password);
            //creating a statement
            Statement statement =
connection.createStatement();
            statement.executeUpdate(query);
            System.out.println("TABLE DROPPED");

        }catch (SQLException throwables){
            throwables.printStackTrace();
        }
    }

}
```

**Output**