Experiment-5

1.1 Objective:

The purpose of this lab is to set up connectivity between Java programming with database.

1.2 Learning Outcomes:

At the end learners will be able to:

a. Understand the importance of the Database connectivity.
b. Explore their understanding for similar type of problems.
c. Understand the role of data source.
d. Understand the role of JDBC-ODBC Bridge.
e. Learners can use ODBC driver effectively for forming the connection.
f. Learners can understand the significance of java.sql package.
g. Learners can realize and explain the working of two tiers and three tier architecture of JDBC.

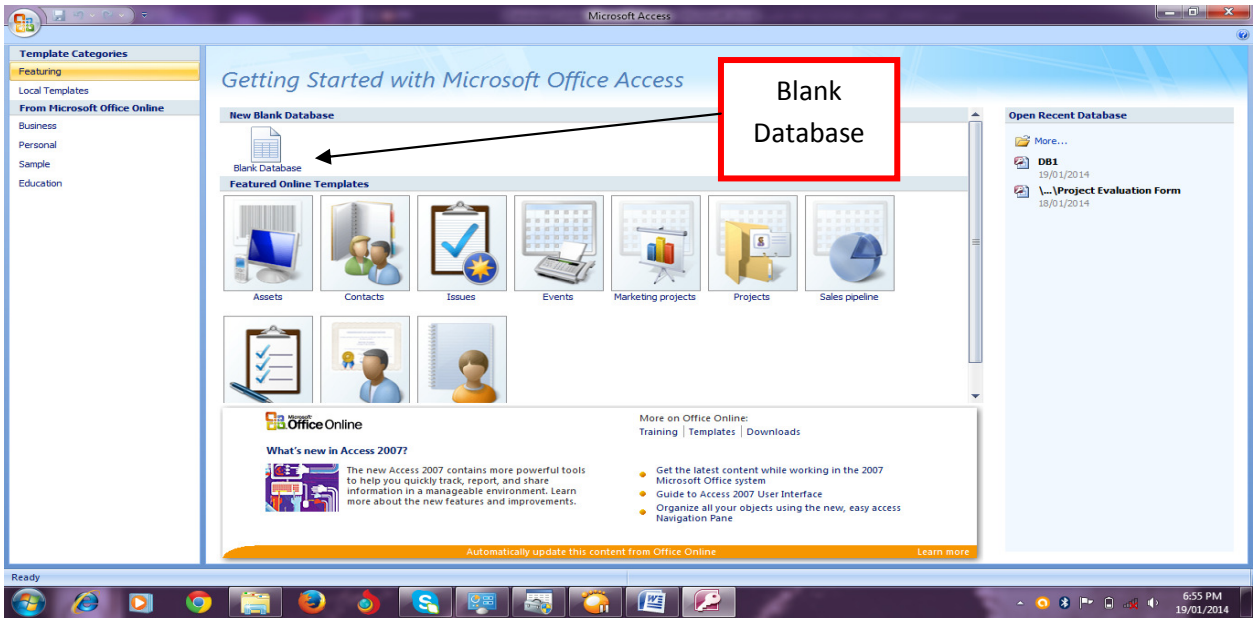
1.3 Resources required

- MS Access for creating the data source.
- JDK for compiling and executing Java programming code

1.4 Steps to Connect with the MS Access Database

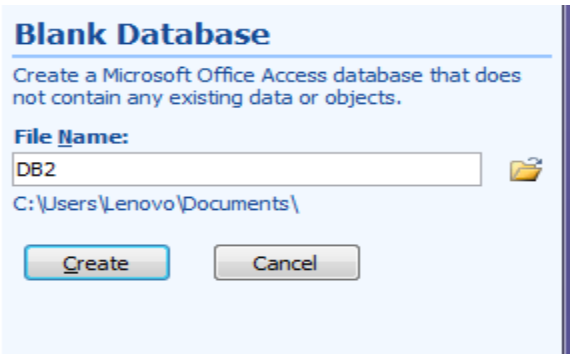
In this section we are intended to connect Java with MS Access Database. We will follow the following steps as given below. For the simplicity I have given the screen shots which will help you in making the connectivity.

Step-1: Open MS Access and choose blank database option.

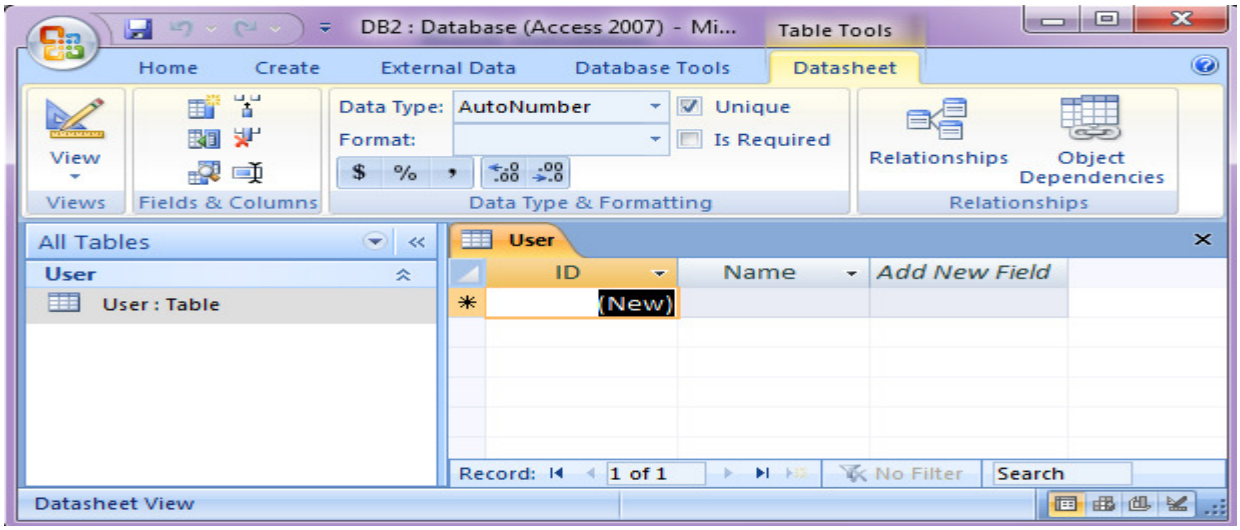


Step-2: Setting the name for the database

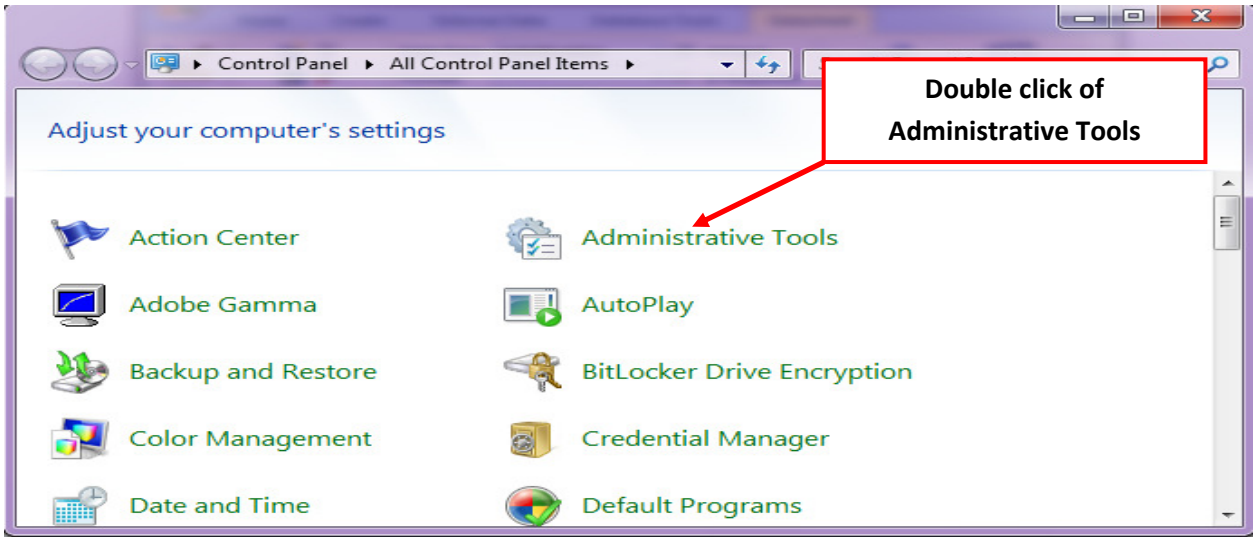
Step-3: Choose the database name and click on create

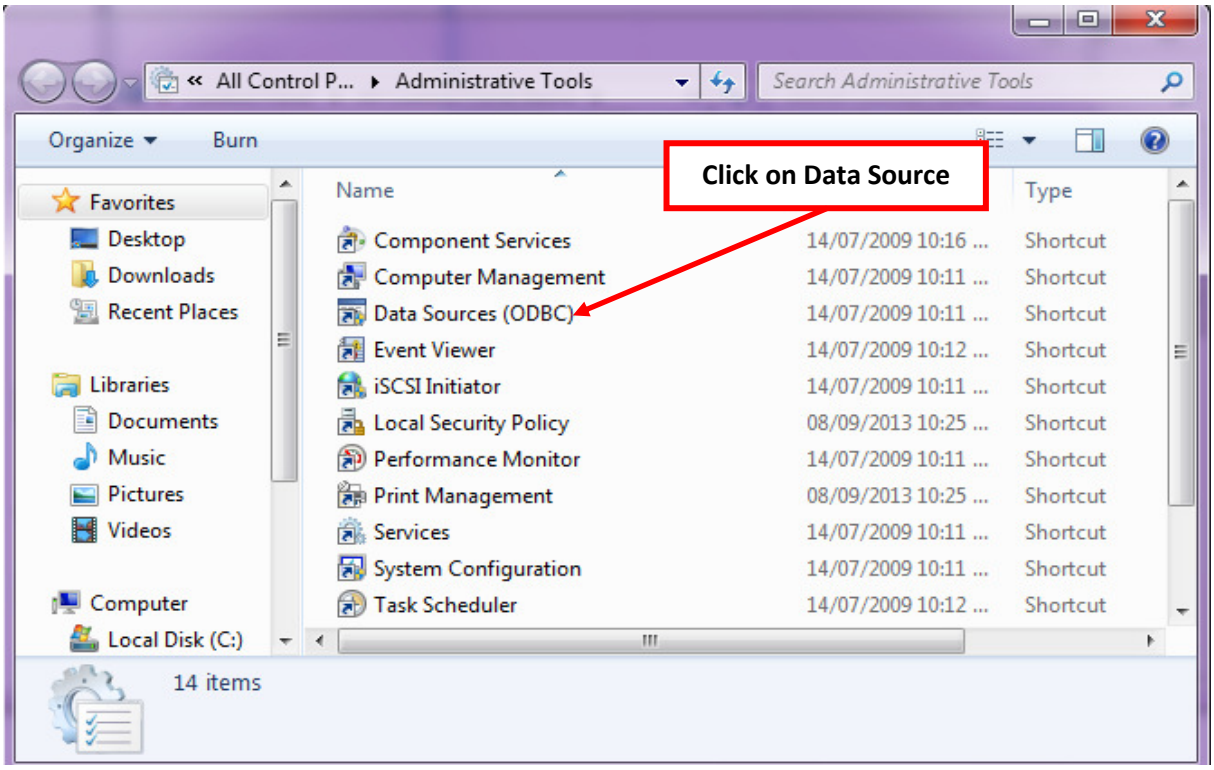


Step-4: Table created and I have given the table name as user

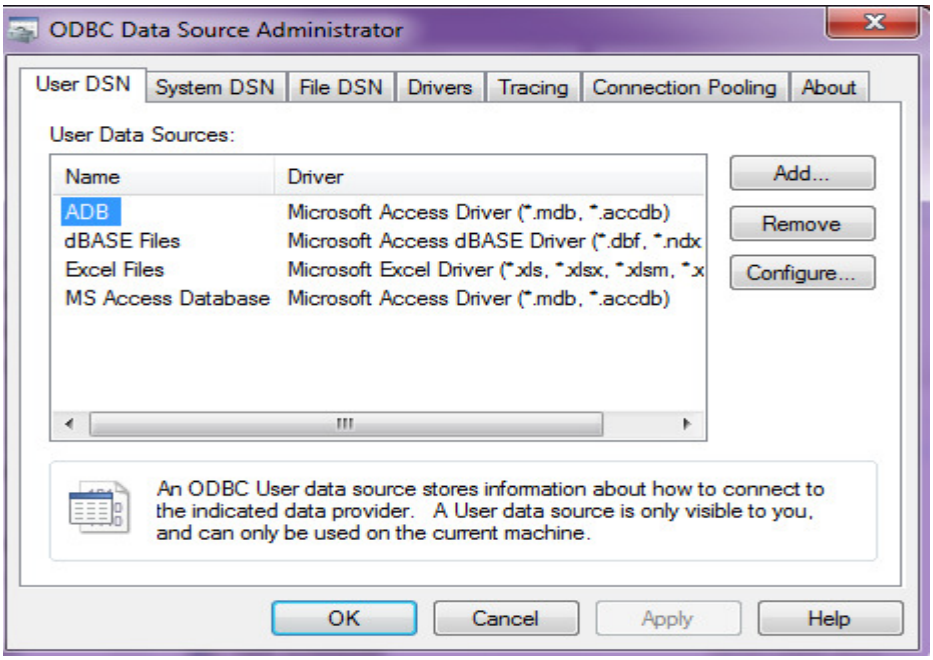


Step-5: Now open Control panel and double click of Administrative tools.

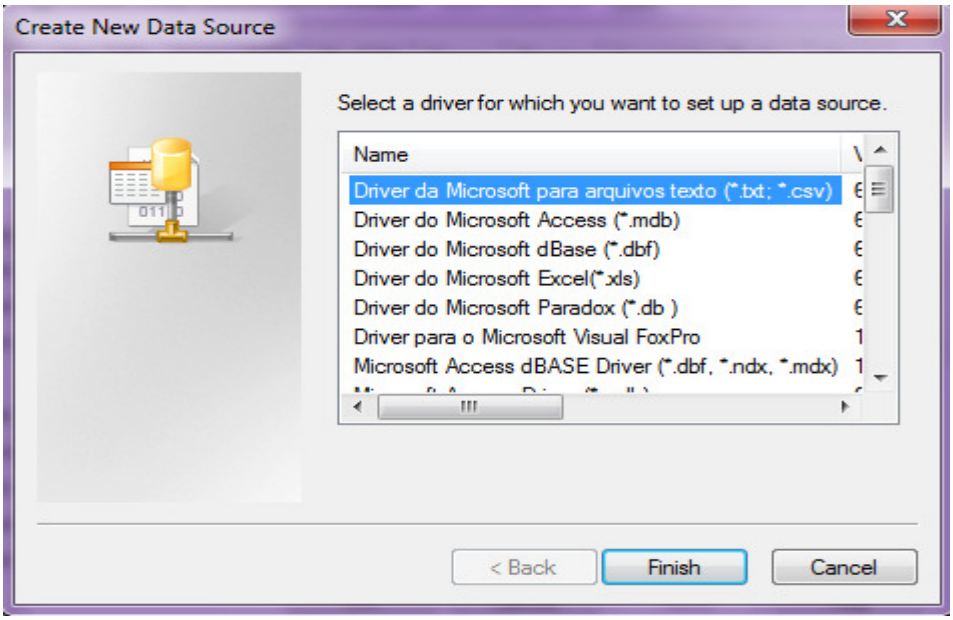




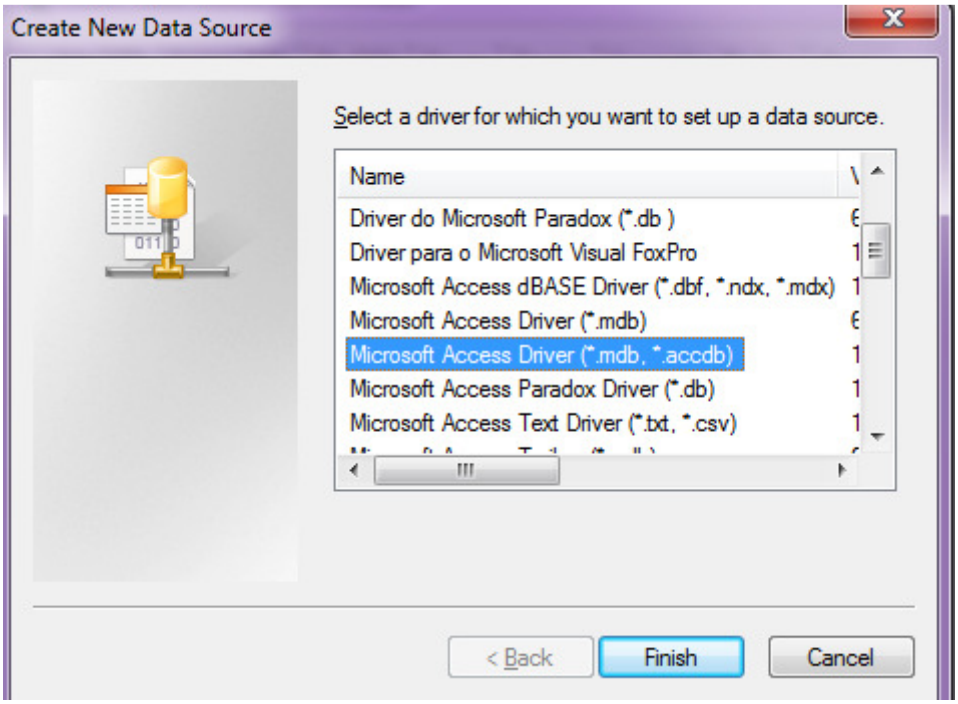
ODBC Data Source Administrator window, here click on "**Add**" to add your data source.



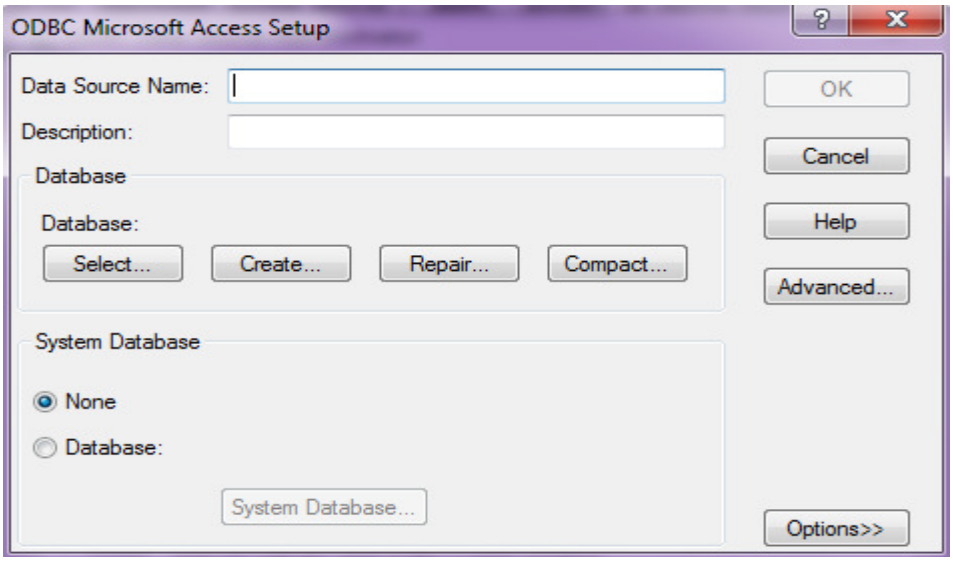
Once we click on "**Add**", "**Create New Data Source**" wizard will open



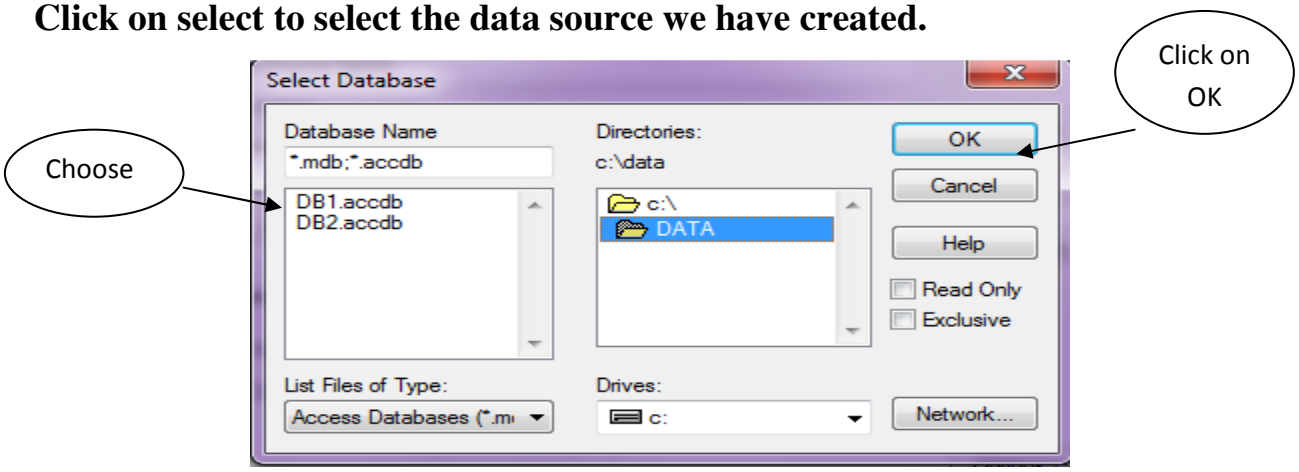
Here find out "**Microsoft Access Driver (*.mdb, *.accdb)**" as shown below using shaded text. Click on this.



Once we click, then **ODBC Microsoft Access Setup** will open as shown below:

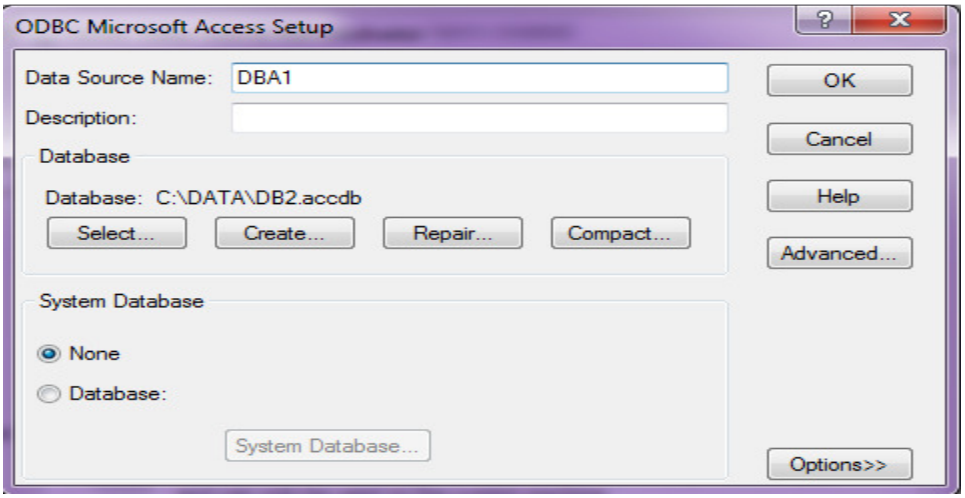


Click on select to select the data source we have created.

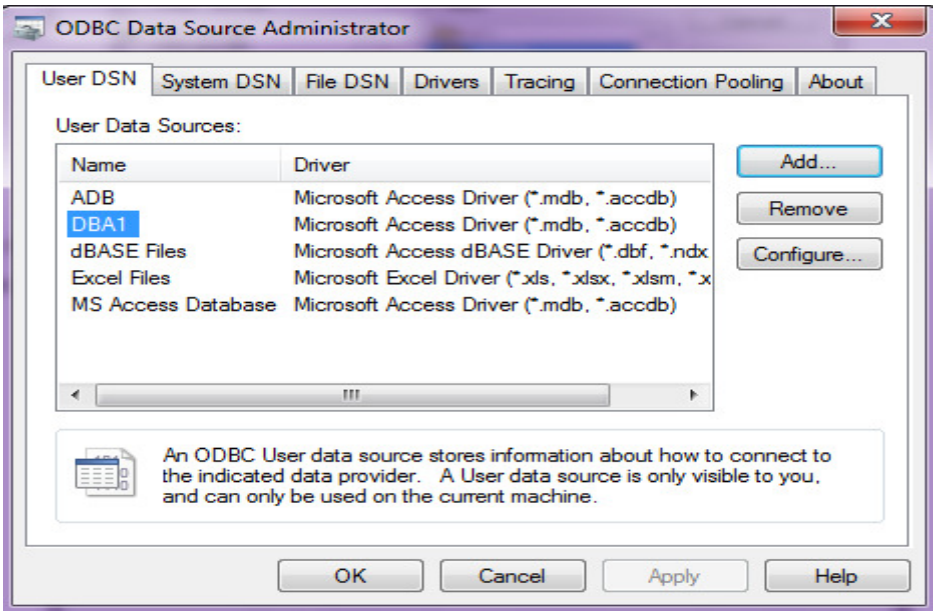


Choose the database name and then click on OK.

Then set the name of the **<u>data source name</u>** and then click on **<u>OK</u>**



Now at this stage you can see the name of the data source



Now, we can use this data source in the Java source code.

Sample Java Code:

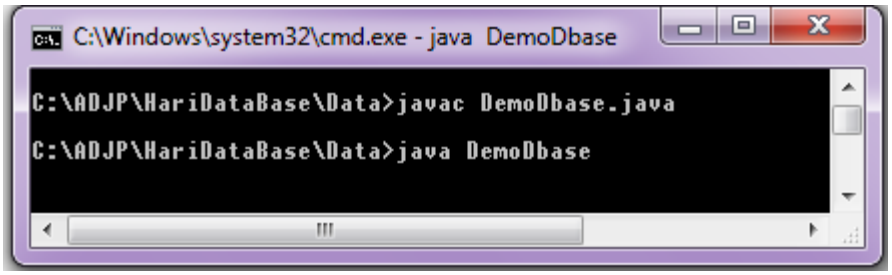
```
import java.awt.*;
import java.awt.event.*;
import java.sql.*;
public class DemoDbase extends Frame implements ActionListener
{
        Frame f;
        Label l1, l2;
        TextField t1, t2;
        Button b1, b2, b3, b4, b5;
        Connection c;
        Statement s;
        ResultSet r;
        DemoDbase()
        {
          try
          {
                f=new Frame();
```

```
f.setLayout(null);
f.setVisible(true);
f.setSize(800, 600);

l1=new Label("ID");
l1.setBounds(50, 100, 100, 50);
f.add(l1);

l2 = new Label("Name");
l2.setBounds(50,150,100,50);
f.add(l2);

t1=new TextField();
t1.setBounds(150,100,100,40);
f.add(t1);

t2=new TextField();
t2.setBounds(150, 150, 100, 40);
f.add(t2);

b1= new Button("INSERT");
b1.setBounds(200, 300, 75, 50);
f.add(b1);
b1.addActionListener(this);

b2= new Button("UPDATE");
b2.setBounds(300, 300, 75, 50);
f.add(b2);
b2.addActionListener(this);

b3= new Button("DELETE");
```

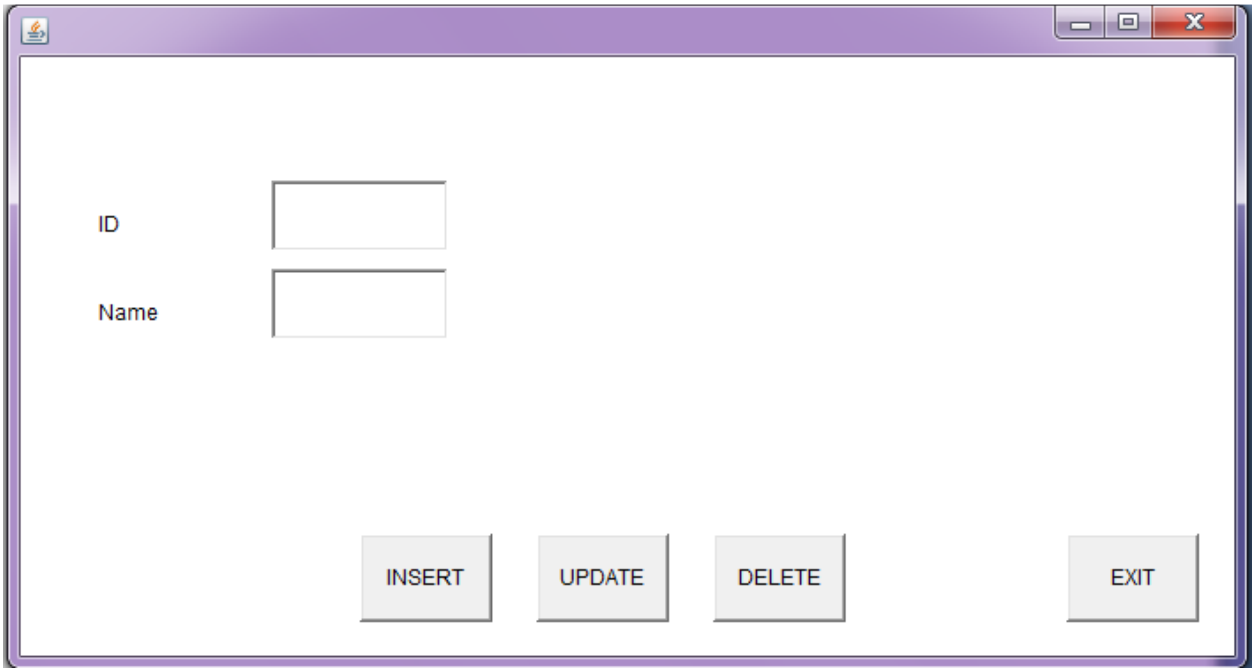
```
            b3.setBounds(400, 300, 75, 50);
            f.add(b3);
            b3.addActionListener(this);

            b5= new Button("EXIT");
            b5.setBounds(600, 300, 75, 50);
            f.add(b5);
            b5.addActionListener(this);

            Class.forName("sun.jdbc.odbc.JdbcOdbcDriver");
            c= DriverManager.getConnection("jdbc:odbc:DBA1");
            s=c.createStatement();
          }
          catch(Exception e) {}
        }  //ends of constructor

        public void actionPerformed(ActionEvent ae)
        {
                try
                {
                        if(ae.getSource()==b1)
                        {
                                String s1 = "INSERT INTO USER(id, name)
VALUES("+t1.getText()+",'"+t2.getText() + "')";
                                System.out.println(s1);
                                s.executeUpdate(s1);
                                r=s.executeQuery("SELECT * FROM USER");
                                t1.setText(" ");
                                t2.setText(" ");
                        }
                        else if(ae.getSource()==b2)
```

```
                {
                        String s2 ="UPDATE USER SET NAME =
'"+t2.getText()+"'WHERE ID = "+t1.getText();
                        System.out.println(s2);
                        s.executeUpdate(s2);
                        r=s.executeQuery("SELECT * FROM USER");
                        t1.setText(" ");
                        t2.setText(" ");
                }
                else if(ae.getSource() ==b3)
                {
                        String s3 = "DELETE FROM USER WHERE ID = "+t1.getText();
                        System.out.println(s3);
                        s.executeUpdate(s3);
                        r=s.executeQuery("SELECT *FROM USER");
                        t1.setText("");
                        t2.setText("");
                }
                else if(ae.getSource()==b5)
                {
                        c.close();
                        f.dispose();
                }
            }
            catch(Exception e){}
        }
        public static void main(String args[])
        {
             new DemoDbase();
        }
}
```

Compile and run the program



Output:



Now perform the operations and verify with the data source.

Practice Exercises:

Create a java program to perform the following task.

- Create a layout with three text boxes for Student Name, Roll Number and course information (B.Tech/M.Tech).
- Create buttons “INSERT”, “UPDATE”, “DELETE” and “EXIT”
- Insert: to insert information, Delete: to remove information, Update: to update information and Exit: to quite.
- Create table name student with three field rollnumber, sname and course.
- Create a data source named studata

- Create connection between java code and the data source.
- Compile and execute the java program.
- Finally, verify your connectivity by using test cases.

Note:

1. **Include both the program with all the details according to the template provided to you in your lab record file.**
2. **Your queries are always welcome and I will love to answer.**