# **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

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.

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**Step-2: Setting the name for the database** 

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

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DB2	
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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.

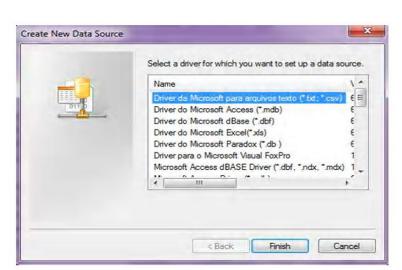
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ODBC Data Source Administrator window, here click on "<u>Add</u>" to add your data source.



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



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

Name
Driver do Microsoft Paradox (*.db )
Driver para o Microsoft Visual FoxPro 1
Microsoft Access dBASE Driver (*.dbf, *.ndx, *.mdx) 1 Microsoft Access Driver (*.mdb)
Microsoft Access Driver ("mdb) "accdb) 1
Microsoft Access Paradox Driver (*.db)
Microsoft Access Text Driver (*.txt, *.csv) 1

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

	? ×
Data Source Name:	ОК
Description:	
Database	Cancel
Database:	Help
Select Create Repair	Compact Advanced
System Database	
<ul> <li>None</li> </ul>	
Ø Database:	
System Database	
	Options>>
<b>x</b> on select to select the data source w	e have created.
Select Database	Click on
Database Name Directorie:	ОК
*mdb;*.accdb c:\data	OK
DB1.accdb	Cancel
DB2.accdb	Help
	Read Only
-	Exclusive
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se the database name and then click on OK.	
se the database name and then click on OK. set the name of the <u>data source name</u> and the	en click on <u>OK</u>
	en click on <u>OK</u>
set the name of the <u>data source name</u> and the ODBC Microsoft Access Setup	2 ×
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ODBC Microsoft Access Setup           Data Source Name:         DBA1	2 ×
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et the name of the <u>data source name</u> and the ODBC Microsoft Access Setup Data Source Name: DBA1 Description: Database	Cancel Help
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et the name of the <u>data source name</u> and the ODBC Microsoft Access Setup Data Source Name: DBA1 Description: Database Database: C:\DATA\DB2.accdb Select Create Repair System Database	Cancel Help
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set the name of the <u>data source name</u> and the ODBC Microsoft Access Setup Data Source Name: DBA1 Description: Database Database: C:\DATA\DB2.accdb Select Create Repair System Database None Database;	OK       Cancel       Help       Advanced

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 11, 12;
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);

11=new Label("ID"); 11.setBounds(50, 100, 100, 50); f.add(11);

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)
                     5
                            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
                                             ="UPDATE
                                                             USER
                                                                       SET
                                                                                NAME
                                      s2
                                                                                           =
""+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();
       }
}
Prepared by | Prof. Hari Mohan Pandey, Assisstant Professor, CSE Department, ASET, AUUP
```

#### Compile and run the program



### **Output:**

<u>چ</u>				
ID				
Name				
	INSERT	UPDATE	DELETE	EXIT
		]		

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.