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SY COMP A3

Assignment 3

Aim: Use SQL database for student data to perform the following operation through java using JDBC.

1.Create 2. Insert 3. Delete 4. Update 5. Display 6.Drop

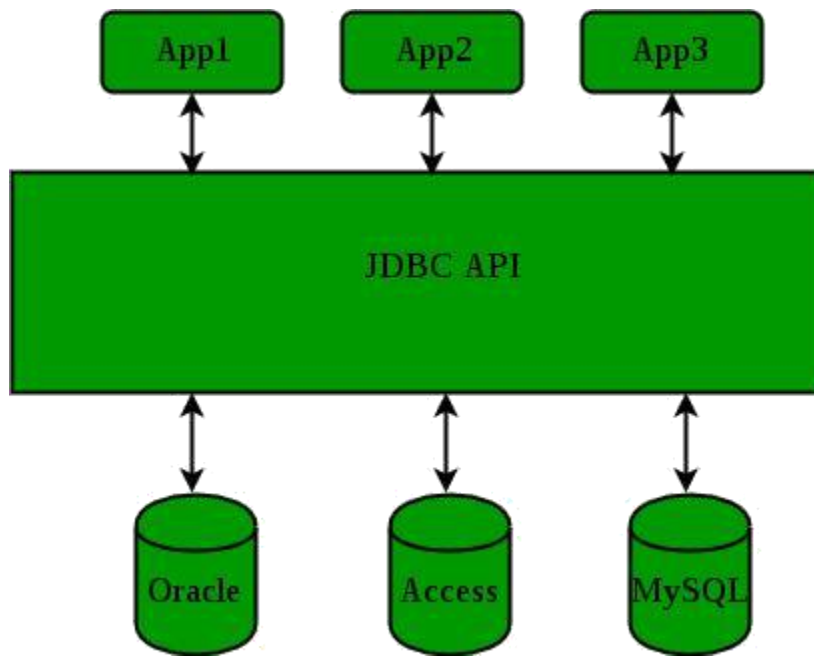
Theory:

Java Database Connectivity (JDBC) is an application programming interface (API) for the programming language Java, which defines how a client may access any kind of tabular data, especially relational database. It is part of Java Standard Edition platform, from Oracle Corporation. It acts as a middle layer interface between java applications and database.

The JDBC classes are contained in the Java Package **java.sql** and **javax.sql**. JDBC helps you to write Java applications that manage these three programming activities:

1. Connect to a data source, like a database.
2. Send queries and update statements to the database
3. Retrieve and process the results received from the database in answer to your query

Structure of JDBC



JDBC Drivers

JDBC drivers are client-side adapters (installed on the client machine, not on the server) that convert requests from Java programs to a protocol that the DBMS can understand.

Code:

1.JDBC.java file

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

class JDBC{

    public static void main(String[] args) throws ClassNotFoundException,
        SQLException{ Class.forName("com.mysql.jdbc.Driver");
```

```

System.out.println("Connecting to MySQL database.....");

String user = "root";

String password = "Abc@12345";

Connection c =
DriverManager.getConnection("jdbc:mysql://localhost/",user,password);

System.out.println("Connection Established Successfully\n"); Statement stm =
c.createStatement();

System.out.print("Enter database name: ");

Scanner s = new Scanner(System.in);

String dbname = s.nextLine();

stm.execute("create database "+dbname+";");

stm.execute("use "+dbname+";");

int option=0;

String tablename = "";

while(option!=7){

    System.out.println("\n\nEnter operation to
perform\n1.Create\n2.Insert\n3.Delete\n4.Update\n5.Display\n6.Drop\n7.Exit");

    option=s.nextInt();

    s.nextLine();

    System.out.println();

    switch(option){

        case 1 : System.out.print("Enter table name: ");

            tablename = s.nextLine();

            stm.execute(

                "create table "+tablename+"(rollno int,name varchar(20),division varchar(5),marks
int,primary key(rollno));"

            );

            System.out.println("Table Created Successfully"); System.out.println("Table
attributes are:\nrollno\tname\tdivision\tmarks"); break;


        case 2 : System.out.print("How many records: ");

            int n = s.nextInt();

```

```

s.nextLine();

int i;

int rollNo,marks;

String name,division;

for(i=0;i<n;i++){

    System.out.println("\nEnter details");

    System.out.print("Rollno: ");

    rollNo = s.nextInt();

    s.nextLine();

    System.out.print("Name: ");

    name = s.nextLine();

    System.out.print("Divison: ");

    division = s.nextLine();

    System.out.print("Marks: ");

    marks = s.nextInt();

    s.nextLine();

    stm.execute(

        "insert into "+tablename+"

values("+rollNo+",\'"+name+\'\',\'"+division+\'\',\'"+marks+\'\',\'

    );

}

System.out.println("\nRecord Insertion Successful");

break;

case 3 : System.out.print("Enter roll number: ");

int r = s.nextInt();

s.nextLine();

stm.execute(

    "delete from "+tablename+" where rollNo="+r+";"

);

System.out.println("\nRecord Deletion Successful");

break;

```

```

case 4 : System.out.print("Enter roll number: ");

int roll = s.nextInt();

s.nextLine();

System.out.println("What is to be
updated:\n1.rollno\n2.name\n3.division\n4.marks");

int upop = s.nextInt();

s.nextLine();

String attr,newval;

switch(upop){

    case 1: attr="rollno";

        break;

    case 2: attr="name";

        break;

    case 3: attr="division";

        break;

    case 4: attr="marks";

        break;

    default:attr="";

}

System.out.print("Enter new value: ");

newval=s.nextLine();

if(upop==1 || upop==4)

    stm.execute(

        "update "+tablename+" set "+attr+"="+newval+" where rollno="+roll+";"

    );

else if(upop==2 || upop==3)

    stm.execute(

        "update "+tablename+" set "+attr+"='"+newval+"' where rollno="+roll+";"

    );

System.out.println("\nRecord Updation Successful");

break;

```

```

        case 5 : ResultSet rs = stm.executeQuery("select * from "+tablename+";");

        System.out.println("\nrollno\tname\tdivision\tmarks\n-----");

        while(rs.next())

        System.out.println(rs.getInt("rollno")+"\t"+rs.getString("name")+"\t"+rs.getString("division")+"\t\t"+rs.getInt("marks"));

        break;

        case 6 : stm.execute("drop table "+tablename+";");

        System.out.println("Table "+tablename+" Dropped Successfully");

        tablename="";

        break;

        case 7 : break;

    }

}

stm.close();

c.close();

}

}

```

Output:

```
run:
Connecting to MySQL database.....
Loading class 'com.mysql.jdbc.Driver'. This is deprecated. The new driver class is 'com.mysql.cj.jdbc.Driver'. The driver is au
Connection Established Successfully

Enter database name: student

Enter operation to perform
1.Create
2.Insert
3.Delete
4.Update
5.Display
6.Drop
7.Exit
1

Enter table name: sy
Table Created Successfully
Table attributes are:
rollno  name    division  marks

Enter operation to perform
1.Create
```

```
Enter operation to perform
1.Create
2.Insert
3.Delete
4.Update
5.Display
6.Drop
7.Exit
2

How many records: 5

Enter details
Rollno: 1
Name: yash
Divison: A
Marks: 95

Enter details
Rollno: 2
Name: jinesh
Divison: B
Marks: 87

Enter details
Rollno: 3

Enter details
Rollno: 3
Name: nikhil
Divison: C
Marks: 98

Enter details
Rollno: 4
Name: anom
Divison: B
Marks: 89

Enter details
Rollno: 5
Name: viraj
Divison: A
Marks: 99

Record Insertion Successful

Enter operation to perform
1.Create
2.Insert
3.Delete
4.Update
```


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Search (Ctrl+F)

Output - JavaApplication3 (run)

```
Enter operation to perform
1.Create
2.Insert
3.Delete
4.Update
5.Display
6.Drop
7.Exit
5

rollno  name  division  marks
-----
1      yash  A         95
2      jinesh B         87
3      nikhil C         98
4      anom  B         89
5      viraj A         99

Enter operation to perform
1.Create
2.Insert
3.Delete
4.Update
5.Display
6.Drop
```

105.129 INS

Type here to search

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Search (Ctrl+F)

Output - JavaApplication3 (run)

```
Enter operation to perform
1.Create
2.Insert
3.Delete
4.Update
5.Display
6.Drop
7.Exit
3

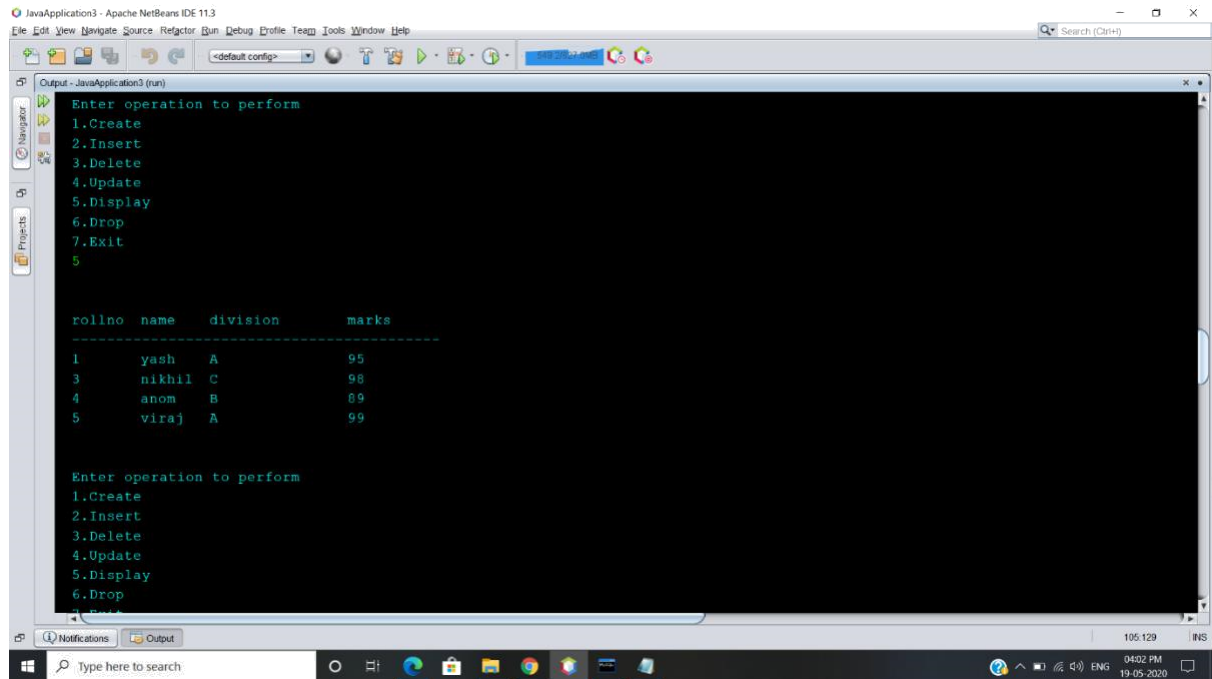
Enter roll number: 2

Record Deletion Successful

Enter operation to perform
1.Create
2.Insert
3.Delete
4.Update
5.Display
6.Drop
7.Exit
5
```

105.129 INS

Type here to search



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Search (Ctrl+F)

Output - JavaApplication3 (run)

```
Enter operation to perform
1.Create
2.Insert
3.Delete
4.Update
5.Display
6.Drop
7.Exit
4

Enter roll number: 4
What is to be updated:
1.rollno
2.name
3.division
4.marks
4

Enter new value: 100

Record Update Successful

Enter operation to perform
1.Create
2.Insert
3.Delete
```

Notifications Output 105.129 INS

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Search (Ctrl+F)

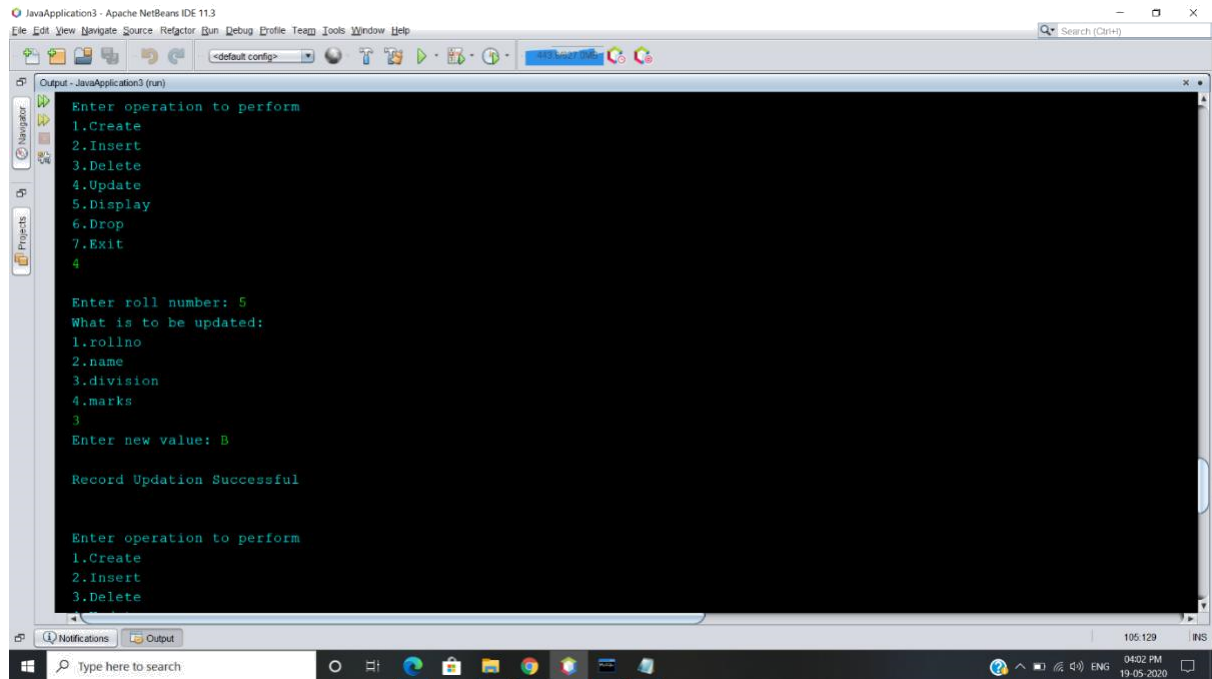
Output - JavaApplication3 (run)

```
Enter operation to perform
1.Create
2.Insert
3.Delete
4.Update
5.Display
6.Drop
7.Exit
5

rollno name division marks
-----
1 yash A 95
3 nikhil C 98
4 anom B 100
5 viraj A 99

Enter operation to perform
1.Create
2.Insert
3.Delete
4.Update
5.Display
6.Drop
```

Notifications Output 105.129 INS



JavaApplication3 - Apache NetBeans IDE 11.3

File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help

Search (Ctrl+F)

Output - JavaApplication3 (run)

```
Enter operation to perform
1.Create
2.Insert
3.Delete
4.Update
5.Display
6.Drop
7.Exit
5

rollno  name  division  marks
-----
1      yash  A         95
3      nikhil C         98
4      anom  B         100
5      viraj B         99

Enter operation to perform
1.Create
2.Insert
3.Delete
4.Update
5.Display
6.Drop
```

Notifications Output 105.129 INS

JavaApplication3 - Apache NetBeans IDE 11.3

File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help

Search (Ctrl+F)

Output - JavaApplication3 (run)

```
Enter operation to perform
1.Create
2.Insert
3.Delete
4.Update
5.Display
6.Drop
7.Exit
6

Table sy Dropped Successfully

Enter operation to perform
1.Create
2.Insert
3.Delete
4.Update
5.Display
6.Drop
7.Exit
7

BUILD SUCCESSFUL (total time: 4 minutes 30 seconds)
```

Notifications Output 105.129 INS