INTERVIEW DEFINITION

Write a program to demonstrate crud operation using JDBC & Scanner class.

Student [RollNo, Name, Contact No, City, Email ID, Standard]

Ex.

- Add
- Display
- Update
- Delete
- Exit

E.g.: On execution of the code following Menu must be displayed.

Option 1:

When user select option 1 then following must be displayed:

```
Enter RollNo.: 1
Enter Name: Aegis
Enter Contact No.: 1234567890
Enter City:Rajkot
Enter Email ID: harsh.savani@aegisiscteam.com
Enter Standard: 12
--------------------------------
1, Aegis, 1234567890, Rajkot, harsh.savani@aegisiscteam.com,
--------------------------------
Do you want to add more record(Y/N): Y
```

If user enter Y then allow user to enter the new record.

```
--------------------------------
1, Aegis, 1234567890, Rajkot, harsh.savani@aegisiscteam.com,
--------------------------------
```

Option 2:

When user select option 2 then following must be displayed:

Option 3:

When user select option 3 then following must be displayed:

```
-------------Menu-------------
1. Add
2. Display
3. Update
4. Delete
5. Exit
--------------------------------
Enter the choice:3
--------------------------------
```

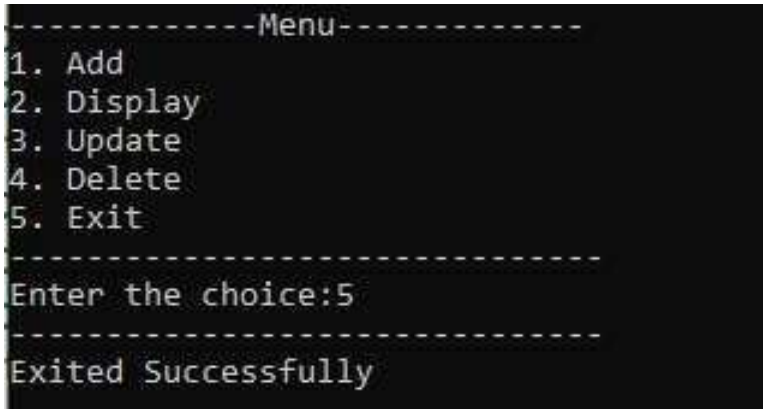
Option 4:

When user select option 4 then following must be displayed:

Before deleting the record take the confirmation from the user.

```
--------------------------------
1, Aegis, 1234567890, Rajkot, harsh.savani@aegisiscteam.com,
2, Aegis, 1234567890, Rajkot, harsh.savani@aegisiscteam.com,
--------------------------------
Enter RollNo.: 1
Are you sure want to Delete(Y/N):Y
--------------------------------
2, Aegis, 1234567890, Rajkot, harsh.savani@aegisiscteam.com,
--------------------------------
```

Option 5:



- Conditions

- Program should not be terminated till the user Exit it.
- After each selection Menu must be displayed asking for user input.
- After execution of each option confirmation message must be displayed.
- Clicking on New option take the inputs from the user with proper message and the entered record at the end.
- Clicking on Modify option ask user for inputting id for updating and after that record must be updated with new entered value and display the records.
- Remove option must ask to user for ID to delete and again ask for confirmation (Y/N) before deletion and display proper message after deletion.
- Finding student by roll no and name option, menu must be displayed to user for asking that "Want to search by Roll No then 1 and 2 for searching by Name".
- Search the particular student according to Roll No or Name entered for point 7 and display the record.
- Find multiple student by City and Standard option, menu must be displayed to user for asking that "Want to search by City then 1 and 2 for searching by Standard".
- Search the particular student according to City or Standard entered for point 9 and display the record.
- Display all the records when user enter Display All option.
- Program must exit only when user enter 7.

"Good luck for the day and may the best results come."

CustomConnection:

```
package Jdbcpack;

import java.io.FileReader;
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.SQLException;
import java.util.Properties;

public class CustomConnection { public
static Connection getCustConnection() {


        Connection connection=null;
        try {
                FileReader freader = new FileReader("database.properties");
                Properties properties=new Properties();
                properties.load(freader);

                //load driver--mysql
        Class.forName(properties.getProperty("driver"));
        //connect to database
        connection=DriverManager.getConnection(properties.getProperty("url"),
properties.getProperty("username"),properties.getProperty("password"));
        return connection;
        }catch(ClassNotFoundException e)
        {
                System.out.println(e.getMessage()+"   "+e.getClass());
                return null;
        }
        catch(SQLException ex)
        {
                System.out.println(ex.getMessage());
                return null;
        }catch(Exception e)
        {
                System.out.println(e.getMessage());
                return null;
        }

}
} Student:

package Jdbcpack.model;
```

```
public class Student {
private int rno; private
String name; private
String contactno;
private String city;
private String emailId;
private String standard;
public Student() {

}


public Student(int rno, String name, String contactno, String city, String emailId,
String standard) { super(); this.rno
        = rno; this.name = name;
        this.contactno =
        contactno; this.city = city;
        this.emailId = emailId;
        this.standard = standard;
}

public int getRno() {
        return rno;
}


public void setRno(int rno) {
        this.rno = rno;
}


public String getName() {
        return name;
}


public void setName(String name) {
        this.name = name;
}


public String getContactno() {
        return contactno;
}
```

```
public void setContactno(String contactno) {
	this.contactno = contactno;
}


public String getCity() {
	return city;
}


public void setCity(String city) {
	this.city = city;
}


public String getEmailId() {
	return emailId;
}


public void setEmailId(String emailId) {
	this.emailId = emailId;
}


public String getStandard() {
	return standard;
}


public void setStandard(String standard) {
	this.standard = standard;
}


@Override
public String toString() { return "Student [rno=" + rno + ", name=" + name
+ ", contactno=" + contactno + ", city=" + city + ", emailId="
				+ emailId + ", standard=" + standard + "]";
}
}
```

StudentInterface: package

Jdbcpack.service; import

java.sql.SQLException; import

Jdbcpack.model.Student;

public interface StudentInterface { void addStudent(Student
student) throws SQLException;
int updateStudent(Student student , int rno,String property) throws
SQLException; int deleteStudent(int rno2) throws
SQLException; Student findStudentByrno(int rno)
throws SQLException;

void displayStudentDetails() throws SQLException;
public String validateEmailId(String emailId);
Student findStudentBycity(String city) throws SQLException;
Student findStudentByName(String name) throws SQLException;
Student findStudentBystandard(String standard) throws SQLException;

}

StudentInterfaceimpl package
Jdbcpack.service;

import java.sql.Connection;
import
java.sql.PreparedStatement;
import java.sql.ResultSet; import
java.sql.SQLException; import
java.util.Scanner; import
java.util.regex.Pattern;

import Jdbcpack.CustomConnection; import

Jdbcpack.model.Student; public class StudentInterfaceimpl

implements StudentInterface {

Connection connection=null;
PreparedStatement pstatement=null;
private Scanner scanner;
public StudentInterfaceimpl()
{
connection=CustomConnection.getCustConnection();

```
	}
	@Override
	public void addStudent(Student student) throws SQLException {
		// TODO Auto-generated method stub

		pstatement=connection.prepareStatement("insert into Student
values(?,?,?,?,?,?)"); pstatement.setInt(1, student.getRno());
		pstatement.setString(2, student.getName());
		pstatement.setString(3, student.getContactno());
		pstatement.setString(4, student.getCity());
		pstatement.setString(5, student.getEmailId());
		pstatement.setNString(6,
		student.getStandard()); int
		res=pstatement.executeUpdate(); if(res==1)
		{
			System.out.println("inserted successfully");
		}
	}

	public String validateEmailId(String emailId) {
		if(emailId==null || emailId.isEmpty()) {
		System.out.println("invalid");

		}
		String regex = "^(.+)@(.+)$";  Pattern
		 pattern=Pattern.compile(regex);
		 if(pattern.matcher(emailId).matches())
		 { return "Valid";
			}else { return
				"Invalid";
			}
		 }
	@Override
	public int updateStudent(Student student, int rno,String property) throws
SQLException {
		// TODO Auto-generated method stub
		Student student1=findStudentByrno(rno);
	if(property.equals("Name"))
	student1.setName(student.getName());
	if(property.equals("contactno"))
		student1.setContactno(student.getContactno());
	if(property.equals("city"))
		student1.setCity(student.getCity());
```

```
        if(property.equals("emailid"))
                student1.setEmailId(student.getEmailId());
        if(property.equals("standard"))
                student1.setStandard(student.getStandard());
           pstatement=connection.prepareStatement("update student set
name=?,contactno=?,city=?,emailId=?,standard=? where rno=? ");
                pstatement.setString(1,student1.getName());
                pstatement.setString(2,
                student1.getContactno());
                pstatement.setString(3, student1.getCity());
                pstatement.setString(4, student1.getEmailId());
                pstatement.setString(5, student1.getStandard());
                pstatement.setInt(6, student1.getRno()); int
                resultSet=pstatement.executeUpdate();
                return resultSet;
        }


                @Override
                public int deleteStudent(int rno2) throws SQLException {
                pstatement=connection.prepareStatement("delete from student
where rno=?"); pstatement.setInt(1, rno2); boolean
                resultSet=pstatement.execute(); return
                rno2;

        }

        @Override
        public Student findStudentByrno(int rno) throws SQLException {
                // TODO Auto-generated method stub
                pstatement=connection.prepareStatement("select *from student
where rno=?");
                pstatement.setInt(1,rno)
                ;
                ResultSet rs=pstatement.executeQuery();
                Student student=null;
                while(rs.next()) {
          student=new
Student(rs.getInt(1),rs.getString(2),rs.getString(3),rs.getString(4),rs.getString(5),r
s
.getString(6));
                System.out.println(student);
                }
```

```
                return student;


        }
        @Override
        public Student findStudentByName(String name) throws SQLException {
                // TODO Auto-generated method stub
                pstatement=connection.prepareStatement("select *from student
where name=?");
                pstatement.setString(1,name);
                ResultSet rs=pstatement.executeQuery();
                Student student=null;
                while(rs.next())        {
                student=new
Student(rs.getInt(1),rs.getString(2),rs.getString(3),rs.getString(4),rs.getString(5),r
s
.getString(6));
                System.out.println(student);
        }
                return student;
        }
        @Override
        public Student findStudentBycity(String city) throws SQLException {
                // TODO Auto-generated method stub
                pstatement=connection.prepareStatement("select *from student
where city=?");
                pstatement.setString(1,city);
                ResultSet rs=pstatement.executeQuery();
                Student student=null;
                while(rs.next())        {
                student=new
Student(rs.getInt(1),rs.getString(2),rs.getString(3),rs.getString(4),rs.getString(5),r
s
.getString(6));
          System.out.println(student);
        }
                return student;
        }
        @Override
        public Student findStudentBystandard(String standard) throws
SQLException {
                // TODO Auto-generated method stub
                pstatement=connection.prepareStatement("select *from student
```

```
where standard=?");
                pstatement.setString(1,standard);
                ResultSet rs=pstatement.executeQuery();
                Student student=null;
                while(rs.next())        {
                student=new
Student(rs.getInt(1),rs.getString(2),rs.getString(3),rs.getString(4),rs.getString(5),r
s
.getString(6));
                System.out.println(student);
                }
                return student;
        }


        @Override
        public void displayStudentDetails() throws SQLException {
                // TODO Auto-generated method stub
                pstatement=connection.prepareStatement("select *from student");
                ResultSet resultSet = pstatement.executeQuery();
        while(resultSet.next())//next() --brings the cursor to the first record
        //returns true
        {
        int rno=resultSet.getInt("rno");
        String name=resultSet.getString("name");
        String contactno=resultSet.getString("contactno");
        String city=resultSet.getString("city");
        String emailId=resultSet.getString("emailId");
        String standard=resultSet.getString("standard");
        Student student = new Student(rno,name,contactno,city,emailId,standard);
        System.out.println(student);
        }
        }
}
```

PreparedStatement:

```
package preparedpack; import
java.sql.*; import
java.util.Scanner; public class
PreparedStatementEx {
```

```
	public static void main(String[] args) throws ClassNotFoundException,
SQLException {
		// TODO Auto-generated method stub
		Scanner scanner =new Scanner(System.in);
		Class.forName("com.mysql.jdbc.Driver");
		Connection
con=DriverManager.getConnection("jdbc:mysql://localhost:3306/tuition","root","
umesh123");
PreparedStatement stmt =con.prepareStatement("insert into
learners values(?,?,?,?,?)"); stmt.setInt(1,scanner.nextInt());
stmt.setString(2,scanner.next()); stmt.setString(3,scanner.next());
stmt.setString(4,scanner.next());
	stmt.setString(5,scanner.next());
	stmt.setString(6,scanner.next());
	int res=stmt.executeUpdate();
	if(res==1)
	{
		System.out.println("Updated.....");
	}
	PreparedStatement stmt1 =con.prepareStatement("update learners
set name=?,contactNo=?,city=?,emailId=?,standard=? where eno=?");
stmt1.setString(1,"harish kumar"); stmt1.setString(2,"9108677232");
stmt1.setString(3,"gul"); stmt1.setString(4,"Apoorva@gmail.com");
stmt1.setString(5, "puc");

			int res1=stmt1.executeUpdate();//2
			if(res1>=1)
			{
				System.out.println("Updated.....");
			}
	}

}
```

Database.properties:

```
driver=com.mysql.jdbc.Driver
url=jdbc:mysql://localhost:3306/tuition
username=root password=umesh123
```

TestJDBC:

```
package Jdbcpack;
```

```
import java.sql.Connection; import java.sql.DriverManager; import
java.sql.SQLException; import java.sql.Statement; import
java.util.Scanner; import Jdbcpack.model.Student; import
Jdbcpack.service.StudentInterface; import
Jdbcpack.service.StudentInterfaceimpl; public class TestJDBC {
public static void main(String[] args) throws SQLException {
                // TODO Auto-generated method stub
                StudentInterface sinterface=new StudentInterfaceimpl();
                                char ch=' ';
                do {
                        System.out.println("------------------------
Menu---------------------------");
                System.out.println("1---add \n 2---display \n 3---update \n 4---
delete \n 5---find student by rno or name \n 6---find student city or name \n 7--
exit");

        System.out.println("-----------------------------------------------------------");
                System.out.print("enter the option:");
                                Scanner scanner = new Scanner(System.in);
                int option =scanner.nextInt();

        System.out.println("-----------------------------------------------------------
                "); switch(option) {
                case 1: System.out.println("enter the student details
rno,name,contactno,city,emailId,standard");
                int rno=scanner.nextInt();
                String name=scanner.next();
                String contactno=scanner.next();
                String city=scanner.next();
                String emailId=scanner.next();
                        String pattern = null;
                        do {
                System.out.println("emailId" + validateEmailId(emailId));
                }while(emailId==pattern);
                String standard=scanner.next();
                Student student = new
Student(rno,name,contactno,city,emailId,standard);    try    {
                        sinterface.addStudent(student); } catch
                        (SQLException          e)          {
                        System.out.println("adding
student --
                        >"+e.g
                        etMess
```

```
                    age());
                    }
                    break;

        case 2:try { sinterface.displayStudentDetails();
                } catch (SQLException e) {
                        System.out.println("adding student -->"+e.getMessage());
                } break;
        case 3:
                System.out.println("Enter the student RollNo you want to
modify"); int rno1=scanner.nextInt();
                System.out.println("Enter the property you want to change");
                String property=scanner.next();
                Student mStudent=new Student();
                if(property.equals("Name")) {
                System.out.println("Enter the name");
                mStudent.setName(scanner.next());
                }
                if(property.equals("contactno")) {
                System.out.println("Enter the Contact number");
                mStudent.setContactno(scanner.next());
                }
                if(property.equals("city")) {
                System.out.println("Enter the City");
                mStudent.setCity(scanner.next());
                }
                if(property.equals("emailId")) {
                System.out.println("Enter the EmaildId");
                mStudent.setEmailId(scanner.next());
                }


                if(property.equals("standard")) {
                System.out.println("Enter the Standard");
                mStudent.setStandard(scanner.next());
                }
                try { int res=sinterface.updateStudent(mStudent, rno1,
                property); if(res==1) {
                System.out.println("Updated Sucessfully");
                sinterface.displayStudentDetails();
                }
                }
                catch(SQLException e){
```

```
            System.out.println("updating student--->"+e.getMessage());
            }
            break;



    case 4:
    System.out.println("Enter the RollNo you want to delete");
    int rno2=scanner.nextInt();
    Student dStudent=new Student();
    System.out.println("Are you sure...you want to delete(y/n)");
    char ch1=scanner.next().charAt(0); if(ch1=='y'||ch1=='Y') {
    try {
    sinterface.deleteStudent(rno2);
    System.out.println("Delete Sucessfully");
    }catch(SQLException e){
    System.out.println("Deleting student--->"+e.getMessage());
    } }
    break;
    case
    5:
System.out.println("Enter your choice for finding student data");
            System.out.println("1.find by rno \n2.find by
            name"); System.out.println("enter your choice:"); int
            value=scanner.nextInt(); switch(value)
    {
            case 1:
                    System.out.println("enter the rno");
                    rno=scanner.nextInt();
                    sinterface.findStudentByrno(rno);
                    break;
            case 2:
                    System.out.println("enter the name of the student");
                    name=scanner.next();
                    sinterface.findStudentByName(name);
                    break;
            }
    break;
    case 6:
            System.out.println("enter your choice for finding student :");
            System.out.println("1.find by city \n 2.find by standard");
```

```
                System.out.println("enter your
                choice:"); int value1=scanner.nextInt();
                switch(value1) { case 1:
                        System.out.println("enter the city :");
                        city=scanner.next();
                        sinterface.findStudentBycity(city);
                        break;
                case 2:
                        System.out.println("enter the  standard:");
                        standard=scanner.next();
                        sinterface.findStudentBystandard(standard); break;

                }
                break;
        case 7:
                System.out.println("Exited succesfully");
                System.exit(0);
                break;
                }
                System.out.println("do you wish to continue say yes");
                ch=scanner.next().charAt(0);
                }while(ch=='y' || ch=='Y');
        }

        private static String validateEmailId(String emailId) {
                // TODO Auto-generated method stub
                return null;
        }

}
```