

## Exercise 12

### JAVA Database Connectivity

-AISHWARYA S 19BCE1709

1.

```
package jlabs;
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.PreparedStatement;
import java.sql.ResultSet;
import java.sql.SQLException;

public class lab12 {

    public static void main(String[] arg) throws SQLException {

        String[] grades= {"Professor Grade 1", "Professor Grade 2", "Associate Professor"};
        String[] school= {"SENSE", "SMBS", "SELECT", "SCSE"};
        String result="";

        //statement 1
        System.out.print("AISHWARYA S 19BCE1709\n");

        System.out.println("\n\n1. Display all record whose designation is “Professor Grade1”\n");
        Connection con= DriverManager.getConnection("jdbc:mysql://localhost:3306/faculty", "root",
"Haloarenes");

        String query = "select * from invigilation where desig=?";
        PreparedStatement preparedStmt = con.prepareStatement(query);
        preparedStmt.setString(1,grades[0]);
        ResultSet rs = preparedStmt.executeQuery();
        preparedStmt.clearParameters();
        while (rs.next()) {
            result = "Employee ID: "+rs.getInt("emp_id")+" Name: "
                +rs.getString("name")+" Designation: "+rs.getString("desig")+" School:
"+rs.getString("school")
                +" Duties: "+rs.getInt("duties");
            System.out.print("\n"+result);
        }

        //statement 2
        System.out.println("\n\n2.Display all record whose designation is “Professor Grade1” from SELECT
school\n");

        query = "select * from invigilation where desig=? and school=?";
```

```

        preparedStmt = con.prepareStatement(query);
        preparedStmt.setString(1,grades[0]);
        preparedStmt.setString(2,school[2]);
        rs = preparedStmt.executeQuery();
        while (rs.next())
        {
            result = "Employee ID: "+rs.getInt("emp_id")+" Name: "
                    +rs.getString("name")+" Designation: "+rs.getString("desig")+" School: "
                    +rs.getString("school")
                    +" Duties: "+rs.getInt("duties");
            System.out.print("\n"+result);
        }

```

System.out.println("\n\n3.Display all record whose designation is Associate professor senior from SCSE school \n");

```

//statement 3
query = "select * from invigilation where desig=? and school=?";
preparedStmt = con.prepareStatement(query);
preparedStmt.setString(1,grades[2]);
preparedStmt.setString(2,school[3]);
rs = preparedStmt.executeQuery();
while (rs.next()) {
    result = "Employee ID: "+rs.getInt("emp_id")+" Name: "
            +rs.getString("name")+" Designation: "+rs.getString("desig")+" School: "
            +rs.getString("school")
            +" Duties: "+rs.getInt("duties");
    System.out.print("\n"+result);
}

```

System.out.println("\n\n4.1 Display all record whose name field is starting with 'A'\n");

```

//statement 4.1
query = "select * from invigilation where name like ?";
preparedStmt = con.prepareStatement(query);
preparedStmt.setString(1,"___A%");
rs = preparedStmt.executeQuery();
while (rs.next()) {
    result = "Employee ID: "+rs.getInt("emp_id")+" Name: "
            +rs.getString("name")+" Designation: "+rs.getString("desig")+" School: "
            +rs.getString("school")
            +" Duties: "+rs.getInt("duties");
    System.out.print("\n"+result);
}

```

System.out.println("\n\n4.2 Display all record whose name field is starting with A and designation equals Professor Grade2\n");

```

//statement 4.2
query = "select * from invigilation where name like ? and desig=?";
preparedStmt = con.prepareStatement(query);
preparedStmt.setString(1,"___A%");
preparedStmt.setString(2,grades[1]);
rs = preparedStmt.executeQuery();
while (rs.next()) {
    result = "Employee ID: "+rs.getInt("emp_id")+" Name: "

```

```

        +rs.getString("name")+" Designation: "+rs.getString("desig")+" School:
"+rs.getString("school")
        +" Duties: "+rs.getInt("duties");
    System.out.print("\n"+result);

}

//statement 5
    System.out.print("\n\n5.Display all record whose name is starting with A and designation equals
Professor Grade1 where school equals SCSE\n");
    query = "select * from invigilation where name like ? and desig=? and school=?";
    preparedStmt = con.prepareStatement(query);
    preparedStmt.setString(1, "___A%");
    preparedStmt.setString(2,grades[0]);
    preparedStmt.setString(3,school[3]);
    rs = preparedStmt.executeQuery();
    while (rs.next()) {
        result = "Employee ID: "+rs.getInt("emp_id")+" Name: "
        +rs.getString("name")+" Designation: "+rs.getString("desig")+" School:
"+rs.getString("school")
        +" Duties: "+rs.getInt("duties");
        System.out.print("\n"+result);

    }

    System.out.println("\n\n6. Display all record whose name is ending with N or M and designation equals
Assosiate professor where school equals SENSE\n");
    //statement 6
    query = "select * from invigilation where name like ? or name like ?and school=? and desig=?";
    preparedStmt = con.prepareStatement(query);
    preparedStmt.setString(1, "%n");
    preparedStmt.setString(2, "%m");
    preparedStmt.setString(3,school[0]);
    preparedStmt.setString(4,grades[2]);
    rs = preparedStmt.executeQuery();
    while (rs.next()) {
        result = "Employee ID: "+rs.getInt("emp_id")+" Name: "
        +rs.getString("name")+" Designation: "+rs.getString("desig")+" School:
"+rs.getString("school")
        +" Duties: "+rs.getInt("duties");
        System.out.print("\n"+result);

    }

    //statement 7

    System.out.println("\n\n7.Display all record whose employee id is greater than 52000\n");
    query = "select * from invigilation where emp_id > ?";
    preparedStmt = con.prepareStatement(query);
    preparedStmt.setInt(1,52000);
    rs = preparedStmt.executeQuery();
    while (rs.next()) {
        result = "Employee ID: "+rs.getInt("emp_id")+" Name: "
        +rs.getString("name")+" Designation: "+rs.getString("desig")+" School:
"+rs.getString("school")
        +" Duties: "+rs.getInt("duties");
        System.out.print("\n"+result);

    }

    System.out.println("\n\n8. Display all records whose employee id is greater than 52000 and school
equals SELECT \n");

```

```

//statement 8

query = "select * from invigilation where emp_id=? and school=?";
preparedStmt = con.prepareStatement(query);
preparedStmt.setInt(1,52000);
preparedStmt.setString(2,school[2]);
rs = preparedStmt.executeQuery();
while (rs.next()) {
result = "Employee ID: "+rs.getInt("emp_id")+" Name: "
        +rs.getString("name")+" Designation: "+rs.getString("desig")+" School:
"+rs.getString("school")
        +" Duties: "+rs.getInt("duties");
System.out.print("\n"+result);

}

//statement 9
System.out.print("\n\n9. Display all records whose employee is greater than 52000 and designation
equals Associate professor and school equals SMBS\n");
query = "select * from invigilation where emp_id=? and school=?";
preparedStmt = con.prepareStatement(query);
preparedStmt.setInt(1,52000);
preparedStmt.setString(2,school[1]);
rs = preparedStmt.executeQuery();
while (rs.next()) {
result = "Employee ID: "+rs.getInt("emp_id")+" Name: "
        +rs.getString("name")+" Designation: "+rs.getString("desig")+" School:
"+rs.getString("school")
        +" Duties: "+rs.getInt("duties");
System.out.print("\n"+result);

}

System.out.print("\n\n10. Display the records who has number of duties greater than 2 and belong to
SMBS\n");
query = "select * from invigilation where duties=? and school=?";
preparedStmt = con.prepareStatement(query);
preparedStmt.setInt(1,2);
preparedStmt.setString(2,school[1]);
rs = preparedStmt.executeQuery();
while (rs.next()) {
result = "Employee ID: "+rs.getInt("emp_id")+" Name: "
        +rs.getString("name")+" Designation: "+rs.getString("desig")+" School:
"+rs.getString("school")
        +" Duties: "+rs.getInt("duties");
System.out.print("\n"+result);

}

}

}

```

## Questions 1-10

DATABASE:

| emp_id | name        | desig               | school | duties |  |
|--------|-------------|---------------------|--------|--------|--|
| 55555  | Dr. Addison | Associate Professor | SENSE  | 3      |  |
| 55000  | Dr. Marion  | Associate Professor | SENSE  | 1      |  |
| 53333  | Dr. Meera   | Associate Professor | SMBS   | 4      |  |
| 53333  | Dr. Keira   | Associate Professor | SMBS   | 4      |  |
| 11000  | Dr. Amira   | Professor Grade 1   | SELECT | 1      |  |
| 11000  | Dr. Maria   | Professor Grade 1   | SELECT | 1      |  |
| 12000  | Dr. Jane    | Professor Grade 1   | SENSE  | 3      |  |
| 13112  | Dr. Maura   | Associate Professor | SCSE   | 4      |  |
| 13222  | Dr. Alan    | Professor Grade 2   | SCSE   | 4      |  |
| 13335  | Dr. Anna    | Professor Grade 1   | SCSE   | 1      |  |
| 56777  | Dr. Leela   | Professor Grade 1   | SELECT | 1      |  |

Problems Javadoc Declaration Console Properties

```
<terminated> lab12 [Java Application] /Library/Java/JavaVirtualMachines/jdk-15.0.2.jdk/Contents/Home/bin/java (28 May 2021, 00:25:09 – 00:25:11)
```

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1. Display all record whose designation is "Professor Grade1"

```
Employee ID: 11000 Name: Dr. Amira Designation: Professor Grade 1 School: SELECT Duties: 1
Employee ID: 11000 Name: Dr. Maria Designation: Professor Grade 1 School: SELECT Duties: 1
Employee ID: 12000 Name: Dr. Jane Designation: Professor Grade 1 School: SENSE Duties: 3
Employee ID: 13335 Name: Dr. Anna Designation: Professor Grade 1 School: SCSE Duties: 1
Employee ID: 56777 Name: Dr. Leela Designation: Professor Grade 1 School: SELECT Duties: 1
```

2.Display all record whose designation is "Professor Grade1" from SELECT school

|                    |                 |                        |         |                |           |
|--------------------|-----------------|------------------------|---------|----------------|-----------|
| Employee ID: 11000 | Name: Dr. Amira | Designation: Professor | Grade 1 | School: SELECT | Duties: 1 |
| Employee ID: 11000 | Name: Dr. Maria | Designation: Professor | Grade 1 | School: SELECT | Duties: 1 |
| Employee ID: 56777 | Name: Dr. Leela | Designation: Professor | Grade 1 | School: SELECT | Duties: 1 |

3.Display all record whose designation is Assosicate professor senior from SCSE school

Employee ID: 13112 Name: Dr. Maura Designation: Associate Professor School: SCSE Duties: 4

#### 4.1 Display all record whose name field is starting with 'A'

Employee ID: 55555 Name: Dr. Addison Designation: Associate Professor School: SENSE Duties: 3  
Employee ID: 11000 Name: Dr. Amira Designation: Professor Grade 1 School: SELECT Duties: 1  
Employee ID: 13222 Name: Dr. Alan Designation: Professor Grade 2 School: SCSE Duties: 4  
Employee ID: 13335 Name: Dr. Anna Designation: Professor Grade 1 School: SCSE Duties: 1

4.2 Display all record whose name filed is starting with A and designation equals Professor Grade2

Employee ID: 13222 Name: Dr. Alan Designation: Professor Grade 2 School: SCSE Duties: 4

5.Display all record whose name is starting with A and designation equals Professor Grade1 where school equals SCSE

Employee ID: 13335 Name: Dr. Anna Designation: Professor Grade 1 School: SCSE Duties: 1

6. Display all record whose name is ending with N or M and designation equals Assocciate professor where school equals SENSE

Employee ID: 55555 Name: Dr. Addison Designation: Associate Professor School: SENSE Duties: 3  
Employee ID: 55000 Name: Dr. Marion Designation: Associate Professor School: SENSE Duties: 1  
Employee ID: 13222 Name: Dr. Alan Designation: Professor Grade 2 School: SCSE Duties: 4

7. Display all record whose employee id is greater than 52000

Employee ID: 55555 Name: Dr. Addison Designation: Associate Professor School: SENSE Duties: 3  
Employee ID: 55000 Name: Dr. Marion Designation: Associate Professor School: SENSE Duties: 1  
Employee ID: 53333 Name: Dr. Meera Designation: Associate Professor School: SMBS Duties: 4  
Employee ID: 53333 Name: Dr. Keira Designation: Associate Professor School: SMBS Duties: 4  
Employee ID: 56777 Name: Dr. Leela Designation: Professor Grade 1 School: SELECT Duties: 1

8. Display all records whose employee id is greater than 52000 and school equals SELECT

Employee ID: 56777 Name: Dr. Leela Designation: Professor Grade 1 School: SELECT Duties: 1

9. Display all records whose employee is greater than 52000 and designation equals Associate professor and school equals SMBS

Employee ID: 53333 Name: Dr. Meera Designation: Associate Professor School: SMBS Duties: 4  
Employee ID: 53333 Name: Dr. Keira Designation: Associate Professor School: SMBS Duties: 4

10. Display the records who has number of duties greater than 2 and belong to SMBS

Employee ID: 53333 Name: Dr. Meera Designation: Associate Professor School: SMBS Duties: 4  
Employee ID: 53333 Name: Dr. Keira Designation: Associate Professor School: SMBS Duties: 4

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**package** jlabs;

**import** java.sql.Connection;

**import** java.sql.DriverManager;

**import** java.sql.PreparedStatement;

**import** java.sql.ResultSet;

**import** java.sql.SQLException;

**public class** lab12\_11 {

**public static void** main(String[] arg) **throws** SQLException {

        Connection con= DriverManager.getConnection("jdbc:mysql://localhost:3306/faculty","root", "Haloarenes");

        String query="update invigilation set emp\_id=? where emp\_id%5=0";

        PreparedStatement preparedStmt = con.prepareStatement(query);

        preparedStmt.setInt(1,00000);

**int** rs = preparedStmt.executeUpdate();

    }  
}

Updated DB





```

        System.out.print("\n\n2.Display the average salary of all doctors working in ENT using the table
DOCTOR and SALARY. Salary = Basic + Allowance");
//statement 2
query = "select avg(Basic+Allowance) as average from doctor,salary where Dept=? and doctor.ID=
salary.ID";

        preparedStmt = con.prepareStatement(query);
        preparedStmt.setString(1, "ENT");

        rs = preparedStmt.executeQuery();
        preparedStmt.clearParameters();

        while (rs.next()) {
            result = "Average: "+rs.getString("average");
            System.out.print("\n"+result);
        }

//statement 3
        System.out.print("\n\n3. Display the minimum allowance of Female doctor");
        query = "select min(Allowance) as minimum from salary,doctor where Sex=? and doctor.ID=salary.ID";
        preparedStmt = con.prepareStatement(query);
        preparedStmt.setString(1, "F");

        rs = preparedStmt.executeQuery();
        preparedStmt.clearParameters();

        while (rs.next()) {
            result = "Minimum Allowance: "+rs.getString("minimum");
            System.out.print("\n"+result);
        }

//statement 4
        System.out.print("\n\n4.Display the highest consultation fee among all male doctor");
        query = "select max(Consultation) as Maximum from salary,doctor where Sex=? and
doctor.ID=salary.ID";
        preparedStmt = con.prepareStatement(query);
        preparedStmt.setString(1, "M");

        rs = preparedStmt.executeQuery();
        preparedStmt.clearParameters();

        while (rs.next()) {
            result = "Maximum Allowance: "+rs.getString("Maximum");
            System.out.print("\n"+result);
        }

//statement 5
        System.out.print("\n\nDisplay the count of female doctors");

        query = "select count(*) as ct from doctor where Sex=?";
        preparedStmt = con.prepareStatement(query);
        preparedStmt.setString(1, "F");

        rs = preparedStmt.executeQuery();
        preparedStmt.clearParameters();

```



```

        while (rs.next()) {
            result = "Count: "+rs.getString("ct");
            System.out.print("\n"+result);
        }

        //statement 6

        System.out.print("\n\n6.Display count of male doctors whose basic is less than Rs.4000");
        query = "select count(*) as ct from doctor,salary where Sex=? and doctor.ID= salary.ID and basic <?";
        preparedStmt = con.prepareStatement(query);
        preparedStmt.setString(1,"M");
        preparedStmt.setInt(2,4000);

        rs = preparedStmt.executeQuery();
        preparedStmt.clearParameters();

        while (rs.next()) {
            result = "Count: "+rs.getString("ct");
            System.out.print("\n"+result);
        }

        //statement 7
        System.out.print("\n\n7. Display Name,Dept,Basic from DOCTOR, SALARY where DEPT ="ENT"
AND DOCTOR.ID = SALARY.ID");
        query = "select Name, Dept, Basic  from doctor,salary where doctor.ID= salary.ID and Dept=?";
        preparedStmt = con.prepareStatement(query);
        preparedStmt.setString(1,"ENT");

        rs = preparedStmt.executeQuery();
        preparedStmt.clearParameters();

        while (rs.next()) {
            result = "Name: "+rs.getString("Name")+" Department: "+rs.getString("Dept")+" Basic:
"+rs.getString("Basic");
            System.out.print("\n"+result);
        }

    }

}

```

## RESULT:

Problems Javadoc Declaration Console Properties  
<terminated> lab12\_2 [Java Application] /Library/Java/JavaVirtualMachines/jdk-15.0.2.jdk/Contents/Home/bin/java (28 May 2021, 03:24:41 – 03:24:42)  
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1. Display Name of all doctors who are in MEDICINE having more than 10 years experience from the table DOCTOR  
Name: Muthumanikandan

2. Display the average salary of all doctors working in ENT using the table DOCTOR and SALARY. Salary = Basic + Allowance  
Average: 20900.0000

3. Display the minimum allowance of Female doctor  
Minimum Allowance: 1800

4. Display the highest consultation fee among all male doctor  
Maximum Allowance: 500

Display the count of female doctors  
Count: 5

6. Display count of male doctors whose basic is less than Rs.4000  
Count: 0

7. Display Name, Dept, Basic from DOCTOR, SALARY where DEPT = "ENT" AND DOCTOR.ID = SALARY.ID  
Name: Oswald Department: ENT Basic: 12000  
Name: Ayesha Department: ENT Basic: 26000