

CS-313 - Assignment 5

Monu Kumar Soyal - 200010029

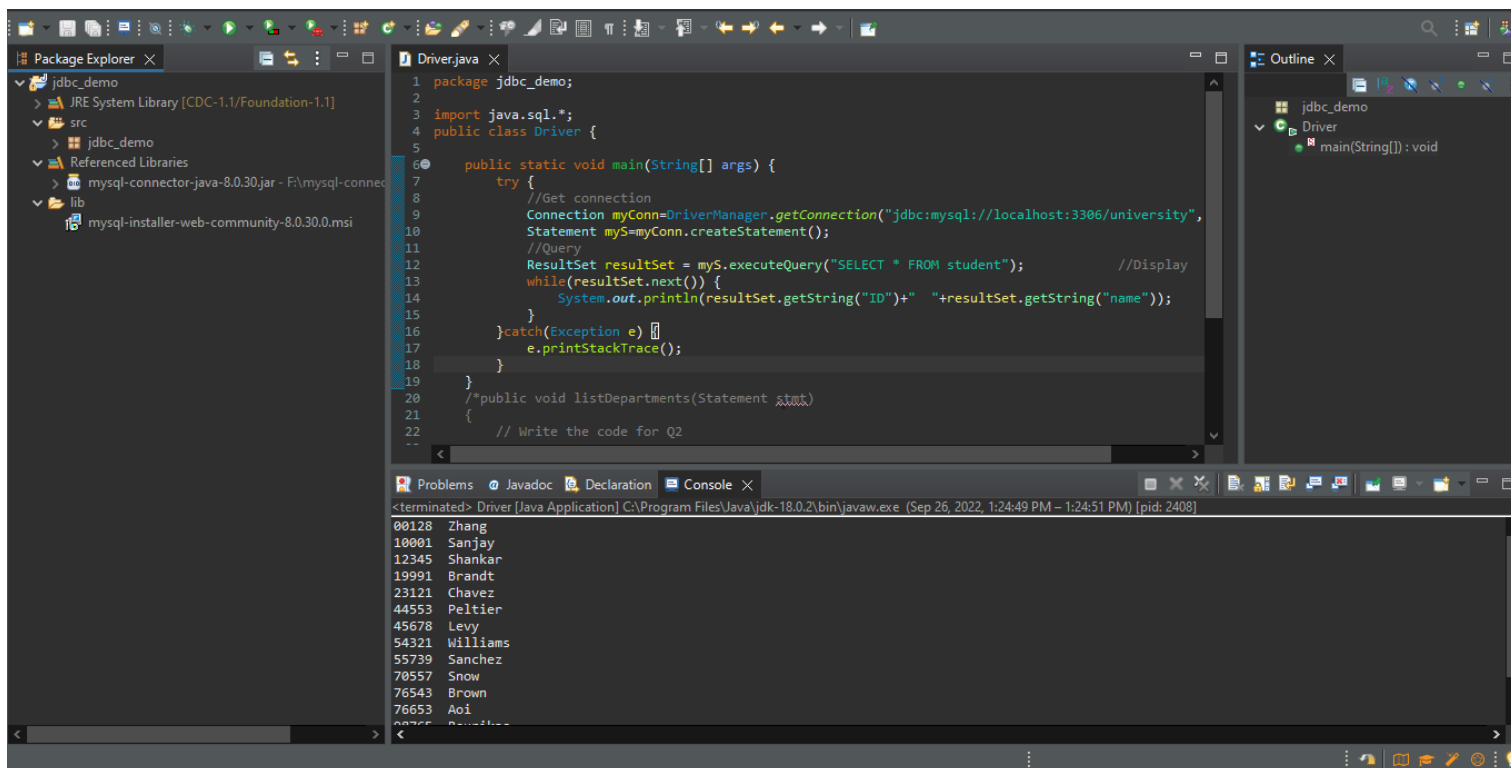
October 1, 2022

Part A

Answer 1

Query to be executed:

*select * from student*



The screenshot shows an IDE with the following components:

- Package Explorer:** Shows a project named 'jdbc_demo' with a 'src' folder containing 'jdbc_demo' and 'lib' containing 'mysql-connector-java-8.0.30.jar' and 'mysql-installer-web-community-8.0.30.0.msi'.
- Driver.java:** Contains the following code:

```
1 package jdbc_demo;
2
3 import java.sql.*;
4 public class Driver {
5
6     public static void main(String[] args) {
7         try {
8             //Get connection
9             Connection myConn=DriverManager.getConnection("jdbc:mysql://localhost:3306/university",
10                 Statement myS=myConn.createStatement();
11             //Query
12             ResultSet resultSet = myS.executeQuery("SELECT * FROM student");           //Display
13             while(resultSet.next()) {
14                 System.out.println(resultSet.getString("ID")+" "+resultSet.getString("name"));
15             }
16         } catch (Exception e) {
17             e.printStackTrace();
18         }
19     }
20     /*public void listDepartments(Statement stmt)
21     {
22         // Write the code for Q2
23     }
24 }
```
- Outline:** Shows the 'Driver' class with a 'main(String[]): void' method.
- Console:** Displays the output of the program, showing a list of student IDs and names:

```
<terminated> Driver [Java Application] C:\Program Files\Java\jdk-18.0.2\bin\javaw.exe. (Sep 26, 2022, 1:24:49 PM – 1:24:51 PM) [pid: 2408]
00128 Zhang
10001 Sanjay
12345 Shankar
19991 Brandt
23121 Chavez
44553 Peltier
45678 Levy
54321 Williams
55739 Sanchez
70557 Snow
76543 Brown
76653 Aoi
87755 ...
```

Answer 2

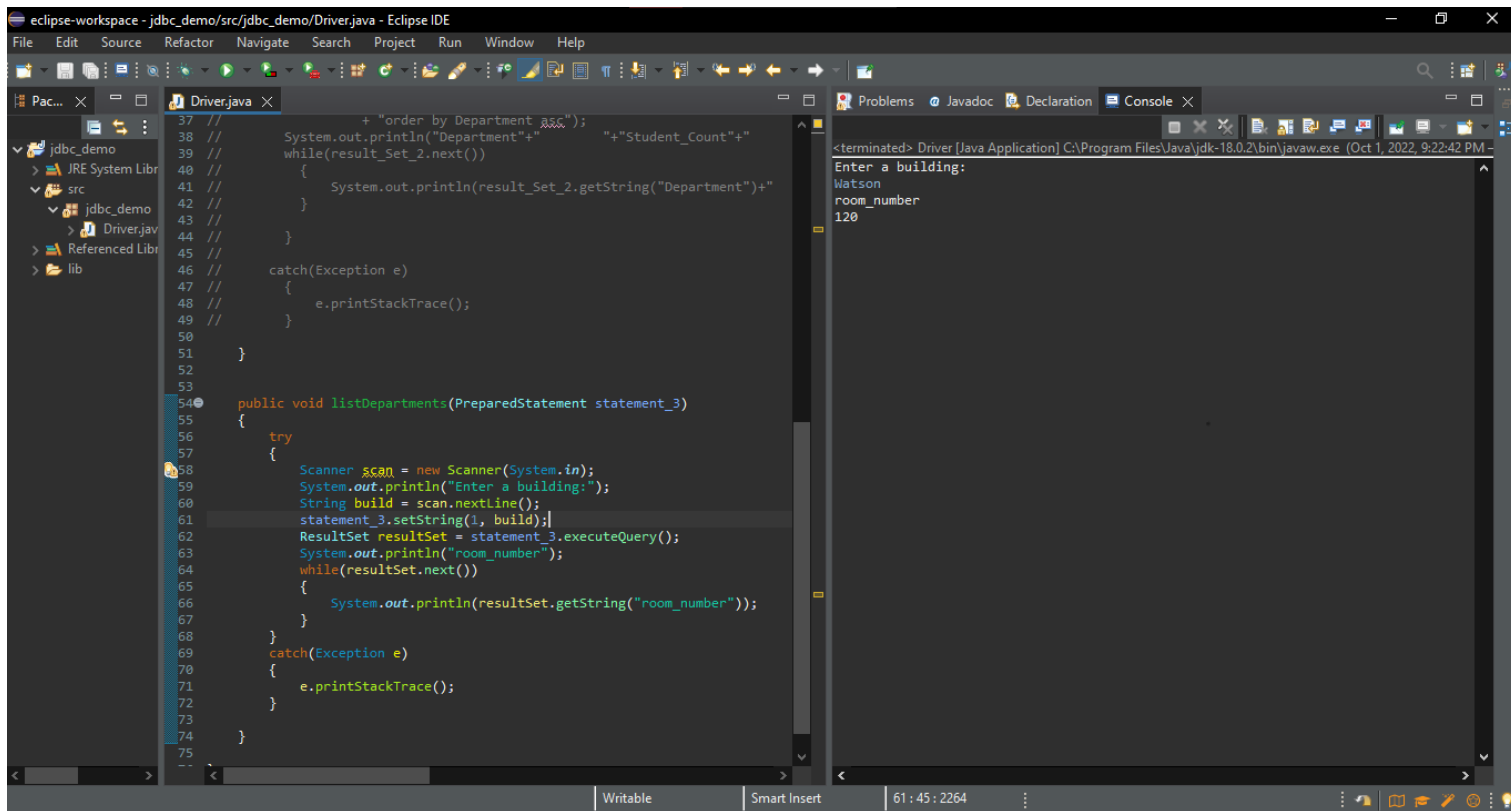
The screenshot shows the Eclipse IDE with a Java file named `Driver.java` in the `src` directory of a project named `jdbc_demo`. The code defines a `Driver` class with a `listDepartments` method that executes a SQL query to retrieve department counts for students and instructors. The console output shows the results of the query.

```
17 Statement statement_2= myConn.createStatement();
18 Driver driver_2 = new Driver();
19 driver_2.listDepartments(statement_2);
20
21 }catch(Exception e) {
22     e.printStackTrace();
23 }
24
25 public void listDepartments(Statement statement_2)
26 {
27     try{
28         ResultSet result_Set_2 = statement_2.executeQuery("with student_dept(Department,Student_Count) as (select dept_name,count(ID) from student group by dept_name),
29         + \"select Department,Student_Count,Instructor_Count \"
30         + \"from student_dept natural join (select dept_name as Department,count(ID) as Instructor_Count from instructor group by dept_name) as instructor_dept
31         + \"order by Department asc\"");
32         System.out.println(\"Department\"+\"Student_Count\"+\"Instructor_Count\");
33         while(result_Set_2.next())
34         {
35             System.out.println(result_Set_2.getString(\"Department\")+\" \" +result_Set_2.getString(\"Student_Count\") +\" \" +result_Set_2.getString(\"Instructor_Count\"));
36         }
37     }
38 }
39
40 catch(Exception e)
41 {
42     e.printStackTrace();
43 }
```

Console Output:

```
<terminated> Driver (Java Application) C:\Program Files\Java\jdk-18.0.2\bin\javaw.exe (Oct 1, 2022, 9:10:03 PM - 9:10:04 PM) [pid: 11376]
Department      Student_Count      Instructor_Count
Biology          1                  1
Comp. Sci.       4                  3
Elec. Eng.       2                  1
Finance          1                  2
History          1                  2
ME               1                  1
Music            1                  1
Physics          3                  2
```

Answer 3



The screenshot shows the Eclipse IDE with the following components:

- Left Panel (Project Explorer):** Displays the project structure for 'jdbc_demo'. It includes the 'src' folder containing 'Driver.java' and a 'lib' folder for referenced libraries.
- Editor (Driver.java):** Shows the source code of the 'Driver' class. The code includes a 'listDepartments' method that prompts the user for a building name and prints the room numbers for each department.
- Right Panel (Console):** Shows the output of the application. It displays the prompt 'Enter a building:' followed by the user input 'Watson' and the resulting room number '120'.

```
37 //      + "order by Department asc");
38 //      System.out.println("Department"+      "+"Student_Count"+
39 //      while(result_Set_2.next())
40 //      {
41 //          System.out.println(result_Set_2.getString("Department")+
42 //      }
43 //
44 //
45 //
46 //      catch(Exception e)
47 //      {
48 //          e.printStackTrace();
49 //      }
50
51 }
52
53
54 public void listDepartments(PreparedStatement statement_3)
55 {
56     try
57     {
58         Scanner scan = new Scanner(System.in);
59         System.out.println("Enter a building:");
60         String build = scan.nextLine();
61         statement_3.setString(1, build);
62         ResultSet resultSet = statement_3.executeQuery();
63         System.out.println("room_number");
64         while(resultSet.next())
65         {
66             System.out.println(resultSet.getString("room_number"));
67         }
68     }
69     catch(Exception e)
70     {
71         e.printStackTrace();
72     }
73 }
74
75
76 --
```

Console Output:

```
<terminated> Driver [Java Application] C:\Program Files\Java\jdk-18.0.2\bin\javaw.exe (Oct 1, 2022, 9:22:42 PM -
Enter a building:
Watson
room_number
120
```

Part B

Answer 1

```
Advisor id is 45565 Department name is Comp. Sci.  
==== 1 rows found =====
```

Markers Properties Servers Data Source Explorer Snippets Problems Console

Tomcat v8.0 Server at localhost [Apache Tomcat] /snap/eclipse/61/plugins/org.eclipse.justj.openjdk.
INFO: Server startup in 1533 ms
Loading class 'com.mysql.jdbc.Driver'. This is deprecated. The new driver class is