



DEPARTMENT OF

COMPUTER SCIENCE & ENGINEERING

Experiment 7

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Subject: PBLJ

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1.Aim: Create Java applications with JDBC for database connectivity, CRUD operations, and MVC architecture.

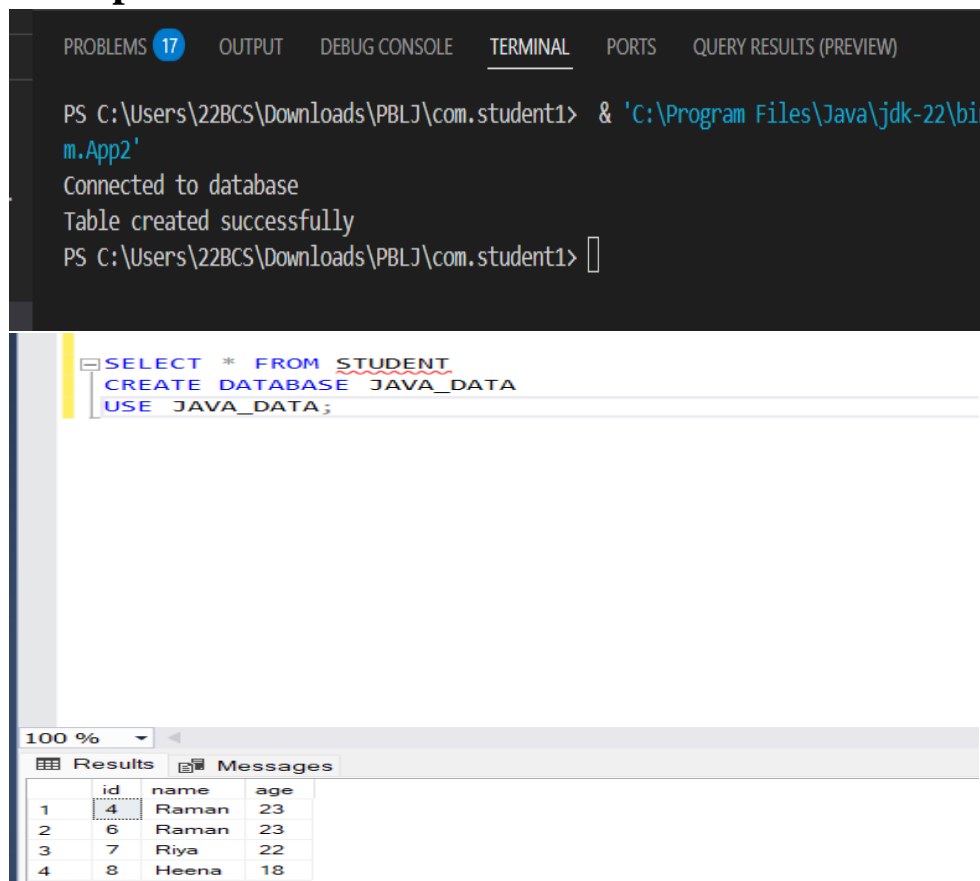
2.Objective: To create Java applications with JDBC for database connectivity, CRUD operations, and MVC architecture.

3.Code:

```
package com;
import java.sql.*;
public class App2 {
    public static void main(String[] args) {
        String url=
        "jdbc:sqlserver://localhost:1433;databaseName=JAVA_DATA;encrypt=true;trustServerCertificate=true;integratedSecurity=true";
        // Establish connection
        String username = "hp\\22BCS";
        String password = "1122";
        try{
            Connection conn=DriverManager.getConnection(url, username, password);
            System.out.println("Connected to database");
            //Create the statement
            Statement stmt=conn.createStatement();
            //create table
            String newtable="create table student("
            +"id int IDENTITY(1,1) PRIMARY KEY,"
            +"name varchar(50),"
            +"age int)";
            /stmt.executeUpdate(newtable);
            System.out.println("Table created successfully");
            //insert table
            String insertquery="insert into student(name,age) VALUES
            ('sukh',21),('Raman',23),('Riya',22),('Heena',18)";
```

```
stmt.executeUpdate(insertquery);
//update data
String updatequery="update student set age=20 where name='Sukh'";
stmt.executeUpdate(updatequery);
//delete data
String deletequery="delete from student where name='sukh'";
stmt.executeUpdate(deletequery);
//read data
String selectQuery="select * from student";
ResultSet rs=stmt.executeQuery(selectQuery);
while(rs.next()){
System.out.println("ID:"+rs.getInt("id")+"name:"+rs.getString("name")+"age:"+rs.get
Int("age"));
}
} catch(SQLException e){
System.out.println(e);
}
}
}
```

4.Output:



The screenshot shows an IDE with a terminal window and a SQL query results window. The terminal window displays the following output:

```
PS C:\Users\22BCS\Downloads\PBLJ\com.student1> & 'C:\Program Files\Java\jdk-22\bin\java.exe' -jar m.App2'
Connected to database
Table created successfully
PS C:\Users\22BCS\Downloads\PBLJ\com.student1> 
```

The SQL query results window shows the following query and results:

```
SELECT * FROM STUDENT
CREATE DATABASE JAVA_DATA
USE JAVA_DATA;
```

	id	name	age
1	4	Raman	23
2	6	Raman	23
3	7	Riya	22
4	8	Heena	18



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5.Learning Outcomes:

- Learn how to establish a connection between a Java application and a relational database using JDBC.
- Gain proficiency in executing SQL queries, retrieving results, and handling database transactions effectively.
- Implement Create, Read, Update, and Delete (CRUD) functionalities using JDBC.
- Apply best practices for handling exceptions, managing connections, and optimizing database interactions.