

1.Demonstrate a project to set up JDBC environment.

Servlet

```
package jdbcInit;

import java.io.IOException;
import java.io.PrintWriter;
import java.sql.DriverManager;
import java.sql.SQLException;

import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;

@WebServlet("/init")

public class JDBCInit extends HttpServlet {

    private static final long serialVersionUID = 1L;

    protected void doGet(HttpServletRequest request, HttpServletResponse
response) throws ServletException, IOException {

        try {

            // STEP 1 LOAD THE JDBC DRIVER

            Class.forName("com.mysql.jdbc.Driver");

            // STEP 2 GET THE CONNECTION TO THE DATABASE

            DriverManager.getConnection("jdbc:mysql://localhost:3306/ecommerce", "root",
"8143303511@Sri");
```

```

//

    PrintWriter out = response.getWriter();

    out.println("SUCCESS!!");

} catch (ClassNotFoundException | SQLException e) {

}

}

}

```

Index.html

```
<a href="init">Initialize JDBC</a><br>
```

OUTPUT



2.Demonstrate a project to set up JDBC environment.(Unassisted Practice)

```
package jdbcInit;

import java.io.IOException;
import java.io.PrintWriter;
import java.sql.DriverManager;
import java.sql.SQLException;

import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;

@WebServlet("/init")

public class JDBCInit extends HttpServlet {

    private static final long serialVersionUID = 1L;

    protected void doGet(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {

        try {

            // STEP 1 LOAD THE JDBC DRIVER

            Class.forName("com.mysql.jdbc.Driver");

            // STEP 2 GET THE CONNECTION TO THE DATABASE

            DriverManager.getConnection("jdbc:mysql://localhost:3306/ecommerce", "root", "8143303511@Sri");
```

```

//

        PrintWriter out = response.getWriter();

        out.println("SUCCESS!!");

    } catch (ClassNotFoundException | SQLException e) {

    }

}

}

```

Index.html

```
<a href="init">Initialize JDBC</a><br>
```

OUTPUT



3.Demonstrate Connection, Statement, and ResultSet in JDBC.

Index.html

```
<a href="init">Initialize JDBC</a><br>
<br>
<a href="statement-demo">Execute Query Demo (retrieve eproduct table
rows)</a><br>
```

JDBCInit servlet

```
package jdbcInit;

import java.io.IOException;
import java.io.PrintWriter;
import java.sql.DriverManager;
import java.sql.SQLException;

import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;

@WebServlet("/init")

public class JDBCInit extends HttpServlet {

    private static final long serialVersionUID = 1L;

    protected void doGet(HttpServletRequest request, HttpServletResponse
response) throws ServletException, IOException {

        try {

            // STEP 1 LOAD THE JDBC DRIVER
```

```

        Class.forName("com.mysql.jdbc.Driver");

        // STEP 2 GET THE CONNECTION TO THE DATABASE

        DriverManager.getConnection("jdbc:mysql://localhost:3306/ecommerce", "root",
        "8143303511@Sri");

        PrintWriter out = response.getWriter();

        out.println("SUCCESS!!");

    } catch (ClassNotFoundException | SQLException e) {

    }

}
}
}

```

DBUtil Servlet

```

package jdbcInit;

import java.sql.*;

public class DBUtil {
    Connection connection = null;

    public DBUtil(String dbURL, String user, String pwd) {
        try {
            // STEP 1 LOAD THE JDBC DRIVER
            Class.forName("com.mysql.jdbc.Driver");

            // STEP 2 GET THE CONNECTION TO THE DATABASE
            connection = DriverManager.getConnection(dbURL, user, pwd);

        } catch (ClassNotFoundException | SQLException e) {
            System.out.println(e);
        }
    }

    public Connection getConnection() {
        return this.connection;
    }

    public void closeConnection() throws SQLException {
        if (this.connection != null)
            this.connection.close();
    }
}

```

```
}
```

Config.properties

```
url=jdbc:mysql://localhost:3306/ecommerce
userid=root
password=8143303511@Sri
```

JDBCStatementDemo

```
package jdbcInit;
import java.io.*;
import java.sql.*;
import java.util.*;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.*;

@WebServlet("/statement-demo")
public class JDBCStatementDemo extends HttpServlet {
    private static final long serialVersionUID = 1L;

    DBUtil dbutil = null;

    @Override
    public void init() throws ServletException {
        super.init();

        InputStream in = getServletContext().getResourceAsStream("/WEB-INF/config.properties");
        Properties props = new Properties();
        try {
            props.load(in);

            dbutil = new DBUtil(props.getProperty("url"),
            props.getProperty("userid"), props.getProperty("password"));

        } catch (IOException e) {
            e.printStackTrace();
        }
    }

    protected void doGet(HttpServletRequest request, HttpServletResponse
response)
        throws ServletException, IOException {
        PrintWriter out = response.getWriter();
        out.println("<html><body>");

        // Get a DB connection
        Connection connection = dbutil.getConnection();

        // STEP 3 Create the Statement object.
        try {
            // STEP 3 Create the Statement object.
```

```

        Statement stmt =
connection.createStatement(ResultSet.TYPE_SCROLL_INSENSITIVE,ResultSet.CONCUR
_READ_ONLY);

        ResultSet rs = stmt.executeQuery("SELECT * FROM
eproduct");

        out.println("<h3> Query Results:</h3>");
        while(rs.next()) {
            int ID = rs.getInt("ID");
            String name = rs.getString("name");
            float price = rs.getFloat("price");
            String date_added = rs.getString("date_added");

            out.println(ID + ", " + name + ", " + price + ",
"+date_added + "<br>");
        }

    } catch (SQLException e) {
        e.printStackTrace();
    }
}

@Override
public void destroy() {
    super.destroy();
    try {
        dbutil.closeConnection();
    } catch (SQLException e) {

        e.printStackTrace();
    }
}
}

```

SQLQUERY

```
create database ecommerce;
```

```
use ecommerce;
```

```
CREATE TABLE eproduct
```

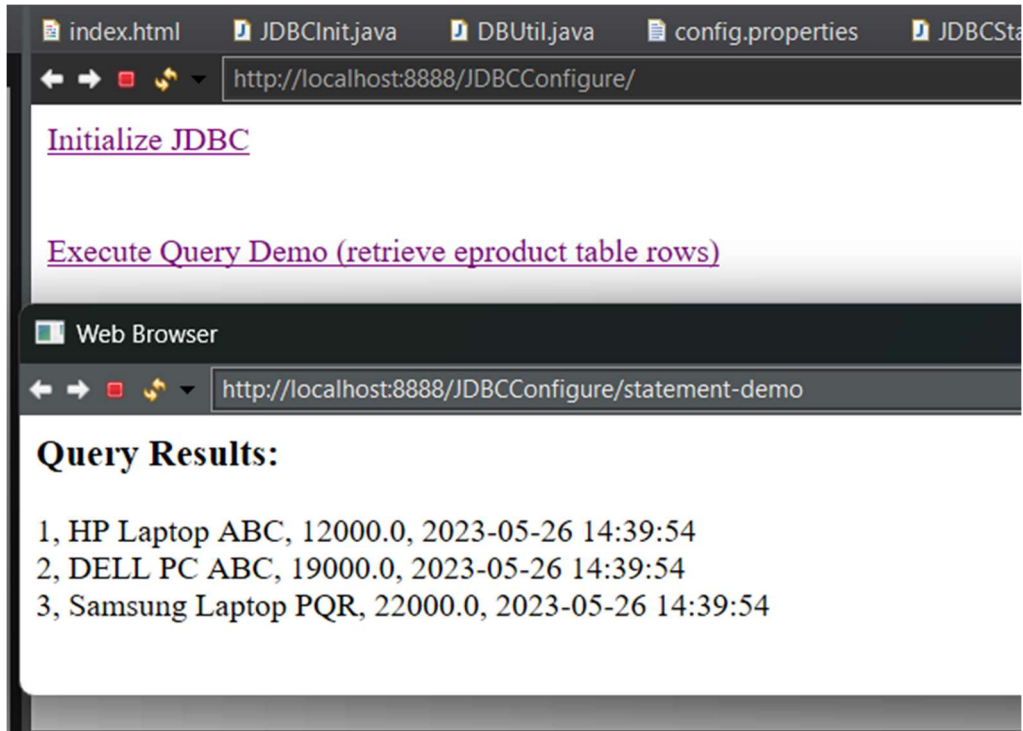
```
(ID bigint primary key auto_increment, name varchar(100), price decimal(10,2), date_added timestamp
default
now());
```

```
INSERT INTO eproduct(name,price) values('HP Laptop ABC', 12000);
```

```
INSERT INTO eproduct(name,price) values('DELL PC ABC', 19000);
```

```
INSERT INTO eproduct(name,price) values('Samsung Laptop PQR', 22000);
```


OUTPUT



4.Demonstrate stored procedures and exception handling in JDBC.

SQL QUERY

```
create database ecommerce;

use ecommerce;
CREATE TABLE eproduct
(ID bigint primary key auto_increment, name varchar(100), price decimal(10,2), date_added timestamp
default
now());

INSERT INTO eproduct(name,price) values('HP Laptop ABC', 12000);
INSERT INTO eproduct(name,price) values('DELL PC ABC', 19000);
INSERT INTO eproduct(name,price) values('Samsung Laptop PQR', 22000);

DELIMITER $$
CREATE PROCEDURE add_product(IN pname varchar(100), IN pprice decimal(10,2))
INSERT INTO eproduct (name, price) VALUES (pname, pprice)
$$
DELIMITER ;

CALL add_product("HP Gaming Laptop 2", 200000.0);
```

Index.html

```
<a href="init">Initialize JDBC</a><br>
<br>
<a href="statement-demo">Execute Query Demo (retrieve eproduct table
rows)</a><br>

<br><br>
<a href="callable-statement-demo">Execute Callable Statement to add one new
product</a><br>
```

JDBCInit servlet

```
package jdbcInit;

import java.io.IOException;

import java.io.PrintWriter;
```

```

import java.sql.DriverManager;
import java.sql.SQLException;

import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;

@WebServlet("/init")

public class JDBCInit extends HttpServlet {

    private static final long serialVersionUID = 1L;

    protected void doGet(HttpServletRequest request, HttpServletResponse
response) throws ServletException, IOException {

        try {

            // STEP 1 LOAD THE JDBC DRIVER

            Class.forName("com.mysql.jdbc.Driver");

            // STEP 2 GET THE CONNECTION TO THE DATABASE

            DriverManager.getConnection("jdbc:mysql://localhost:3306/ecommerce", "root",
"8143303511@sri");

            PrintWriter out = response.getWriter();

            out.println("SUCCESS!!");

        } catch (ClassNotFoundException | SQLException e) {

        }

    }

}

```

DBUtil Servlet

```
package jdbcInit;

import java.sql.*;

public class DBUtil {
    Connection connection = null;

    public DBUtil(String dbURL, String user, String pwd) {
        try {
            // STEP 1 LOAD THE JDBC DRIVER
            Class.forName("com.mysql.jdbc.Driver");

            // STEP 2 GET THE CONNECTION TO THE DATABASE
            connection = DriverManager.getConnection(dbURL, user, pwd);

        } catch (ClassNotFoundException | SQLException e) {
            System.out.println(e);
        }
    }

    public Connection getConnection() {
        return this.connection;
    }

    public void closeConnection() throws SQLException {
        if (this.connection != null)
            this.connection.close();
    }
}
```

Config.properties

```
url=jdbc:mysql://localhost:3306/ecommerce
userid=root
password=8143303511@Sri
```

JDBCStatementDemo

```
package jdbcInit;
import java.io.*;
import java.sql.*;
import java.util.*;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.*;

@WebServlet("/statement-demo")
public class JDBCStatementDemo extends HttpServlet {
    private static final long serialVersionUID = 1L;
```

```

        DBUtil dbutil = null;

        @Override
        public void init() throws ServletException {
            super.init();

            InputStream in = getServletContext().getResourceAsStream("/WEB-INF/config.properties");
            Properties props = new Properties();
            try {
                props.load(in);

                dbutil = new DBUtil(props.getProperty("url"),
                props.getProperty("userid"), props.getProperty("password"));

            } catch (IOException e) {
                e.printStackTrace();
            }
        }

        protected void doGet(HttpServletRequest request, HttpServletResponse
        response)
            throws ServletException, IOException {
            PrintWriter out = response.getWriter();
            out.println("<html><body>");

            // Get a DB connection
            Connection connection = dbutil.getConnection();

            // STEP 3 Create the Statement object.
            try {
                // STEP 3 Create the Statement object.
                Statement stmt =
                connection.createStatement(ResultSet.TYPE_SCROLL_INSENSITIVE,ResultSet.CONCUR
                _READ_ONLY);

                ResultSet rs = stmt.executeQuery("SELECT * FROM
                eproduct");

                out.println("<h3> Query Results:</h3>");
                while(rs.next()) {
                    int ID = rs.getInt("ID");
                    String name = rs.getString("name");
                    float price = rs.getFloat("price");
                    String date_added = rs.getString("date_added");

                    out.println(ID + ", "+name + ", "+price + ",
                    "+date_added + "<br>");
                }

            } catch (SQLException e) {
                e.printStackTrace();
            }
        }

        @Override
        public void destroy() {

```

```

        super.destroy();
        try {
            dbutil.closeConnection();
        } catch (SQLException e) {

            e.printStackTrace();
        }
    }
}

```

JDBCStoredProcedureDemo

```

package jdbcInit;
import java.io.IOException;
import java.io.InputStream;
import java.io.PrintWriter;
import java.sql.*;
import java.util.*;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.*;

@WebServlet("/callable-statement-demo")
public class JDBCStoredProcedureDemo extends HttpServlet {
    private static final long serialVersionUID = 1L;

    DBUtil dbutil = null;

    @Override
    public void init() throws ServletException {
        super.init();

        InputStream in = getServletContext().getResourceAsStream("/WEB-INF/config.properties");
        Properties props = new Properties();
        try {
            props.load(in);

            dbutil = new DBUtil(props.getProperty("url"),
props.getProperty("userid"), props.getProperty("password"));

        } catch (IOException e) {
            e.printStackTrace();
        }
    }

    protected void doGet(HttpServletRequest request, HttpServletResponse
response)
        throws ServletException, IOException {
        PrintWriter out = response.getWriter();
        out.println("<html><body>");

        // Get a DB connection
        Connection connection = dbutil.getConnection();

        // STEP 3 Create the Statement object.
    }
}

```

```

        try {
            // STEP 3 Create the Prepared Statement object.
            CallableStatement callableStmt =
connection.prepareCall("{call add_product(?, ?)}");

            callableStmt.setString(1, "Mac PC");
            callableStmt.setFloat(2, 50000.25f);

            callableStmt.execute();

            out.println("Stored procedure has been executed.<Br>");
            callableStmt.close();

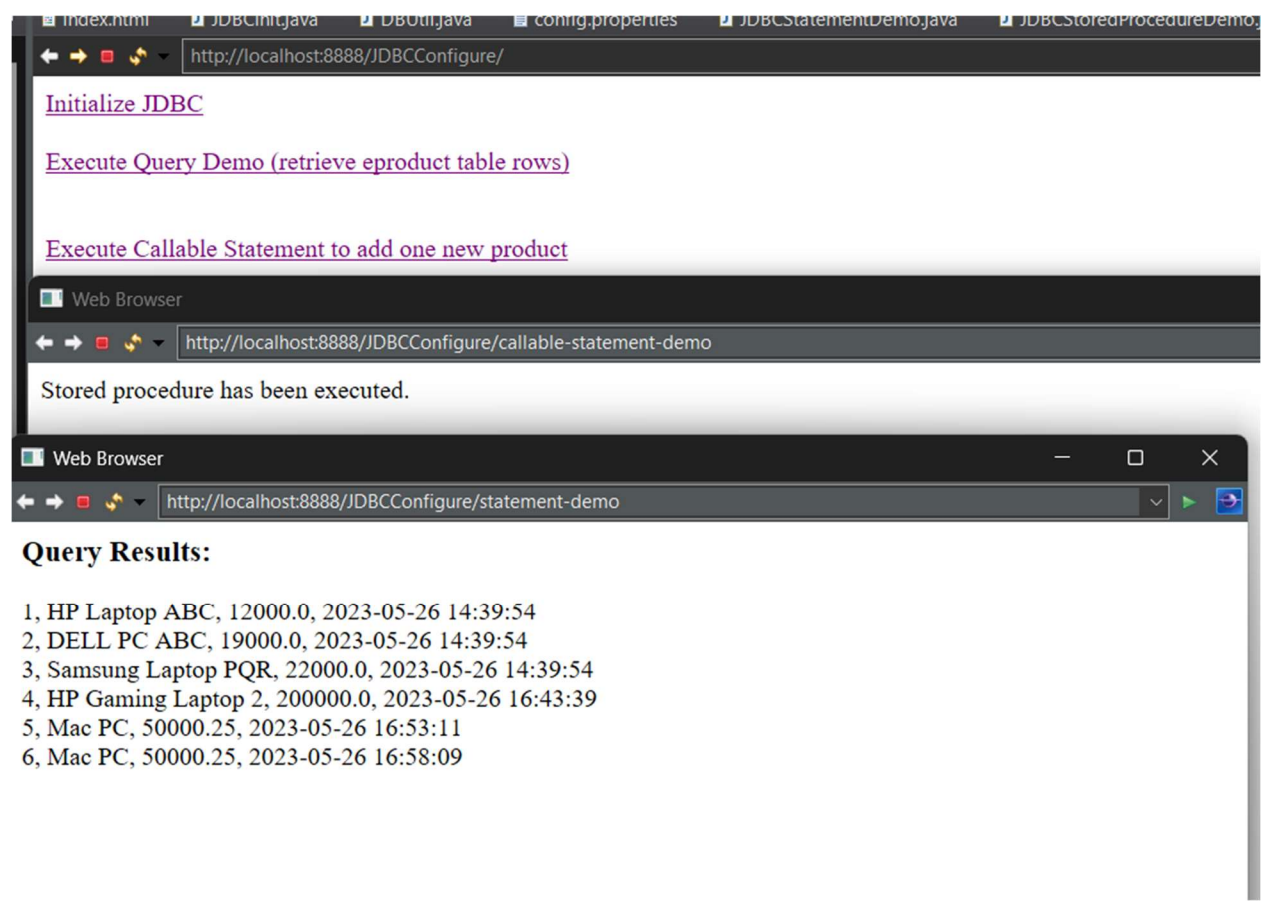
        } catch (SQLException e) {
            e.printStackTrace();
        }
    }
}

@Override
public void destroy() {
    super.destroy();
    try {
        dbutil.closeConnection();
    } catch (SQLException e) {

        e.printStackTrace();
    }
}
}
}

```

OUTPUT



index.html JDBCinit.java DBUtil.java config.properties JDBCStatementDemo.java JDBCStoredProcedureDemo.java

http://localhost:8888/JDBCConfigure/

[Initialize JDBC](#)

[Execute Query Demo \(retrieve eproduct table rows\)](#)

[Execute Callable Statement to add one new product](#)

Web Browser

http://localhost:8888/JDBCConfigure/callable-statement-demo

Stored procedure has been executed.

Web Browser

http://localhost:8888/JDBCConfigure/statement-demo

Query Results:

1,	HP Laptop ABC,	12000.0,	2023-05-26 14:39:54
2,	DELL PC ABC,	19000.0,	2023-05-26 14:39:54
3,	Samsung Laptop PQR,	22000.0,	2023-05-26 14:39:54
4,	HP Gaming Laptop 2,	200000.0,	2023-05-26 16:43:39
5,	Mac PC,	50000.25,	2023-05-26 16:53:11
6,	Mac PC,	50000.25,	2023-05-26 16:58:09

5.Demonstrate how to create, select, and drop a database in JDBC.

Index.html

```
<a href="init">Initialize JDBC</a><br>
<br>
<a href="statement-demo">Execute Query Demo (retrieve eproduct table
rows)</a><br>

<br><br>
<a href="create-drop-database-demo">Create a new database SAMPLE1</a><br>
```

SQL QUERY

```
create database ecommerce;

use ecommerce;
CREATE TABLE eproduct
(ID bigint primary key auto_increment, name varchar(100), price decimal(10,2), date_added timestamp
default
now());

INSERT INTO eproduct(name,price) values('HP Laptop ABC', 12000);
INSERT INTO eproduct(name,price) values('DELL PC ABC', 19000);
INSERT INTO eproduct(name,price) values('Samsung Laptop PQR', 22000);
```

JDBCInit servlet

```
package jdbcInit;

import java.io.IOException;
import java.io.PrintWriter;
import java.sql.DriverManager;
import java.sql.SQLException;

import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
```

```

import javax.servlet.http.HttpServletResponse;

@WebServlet("/init")

public class JDBCInit extends HttpServlet {

    private static final long serialVersionUID = 1L;

    protected void doGet(HttpServletRequest request, HttpServletResponse
response) throws ServletException, IOException {

        try {

            // STEP 1 LOAD THE JDBC DRIVER

            Class.forName("com.mysql.jdbc.Driver");

            // STEP 2 GET THE CONNECTION TO THE DATABASE

            DriverManager.getConnection("jdbc:mysql://localhost:3306/ecommerce", "root",
"8143303511@Sri");

            PrintWriter out = response.getWriter();

            out.println("SUCCESS!!");

        } catch (ClassNotFoundException | SQLException e) {

        }

    }

}

```

DBUtil Servlet

```

package jdbcInit;

import java.sql.*;

public class DBUtil {
    Connection connection = null;

    public DBUtil(String dbURL, String user, String pwd) {
        try {

```

```

        // STEP 1 LOAD THE JDBC DRIVER
        Class.forName("com.mysql.jdbc.Driver");

        // STEP 2 GET THE CONNECTION TO THE DATABASE
        connection = DriverManager.getConnection(dbURL, user, pwd);

    } catch (ClassNotFoundException | SQLException e) {
        System.out.println(e);
    }
}

public Connection getConnection() {
    return this.connection;
}

public void closeConnection() throws SQLException {
    if (this.connection != null)
        this.connection.close();
}
}
}

```

Config.properties

```

url=jdbc:mysql://localhost:3306/ecommerce
userid=root
password=8143303511@Sri

```

CreateDropDatabaseDemo servlet

```

package jdbcinit;
import java.io.*;
import java.sql.*;
import java.util.*;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.*;

@WebServlet("/create-drop-database-demo")
public class CreateDropDatabaseDemo extends HttpServlet {
    private static final long serialVersionUID = 1L;

    DBUtil dbutil = null;

    @Override
    public void init() throws ServletException {
        super.init();

        InputStream in = getServletContext().getResourceAsStream("/WEB-INF/config.properties");
    }
}

```

```

        Properties props = new Properties();
        try {
            props.load(in);

            dbutil = new DBUtil(props.getProperty("url"), props.getProperty("userid"),
props.getProperty("password"));

            } catch (IOException e) {
                e.printStackTrace();
            }
        }
protected void doGet(HttpServletRequest request, HttpServletResponse response)
    throws ServletException, IOException {
    PrintWriter out = response.getWriter();
    out.println("<html><body>");

    // Get a DB connection
    Connection connection = dbutil.getConnection();

    try {
        // STEP 3 Create the Statement object.
        Statement stmt = connection.createStatement();

        stmt.execute("CREATE DATABASE SAMPLE1");
        out.println("Created database: SAMPLE1<br>");
        stmt.execute("USE SAMPLE1");
        stmt.execute("CREATE TABLE TABLE1(name varchar(20))");
        out.println("Created TABLE: TABLE1 inside SAMPLE1<br>");

        // delete the table
        stmt.execute("USE SAMPLE1");
        stmt.execute("DROP TABLE TABLE1");
        out.println("Dropped TABLE: TABLE1 from SAMPLE1");
        // delete database
        stmt.execute("DROP DATABASE SAMPLE1");
        out.println("Dropped database SAMPLE1");
    } catch (SQLException e) {
        e.printStackTrace();
    }
}

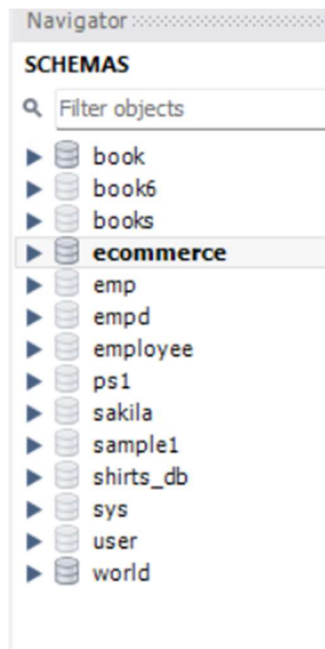
@Override
public void destroy() {
    super.destroy();
    try {
        dbutil.closeConnection();
    } catch (SQLException e) {

```

```
        e.printStackTrace();
    }
}
```

OUTPUT: -





6.Demonstrate Insertion, Updation, and Deletion of Database Records using JDBC.

Index.html

```
<!DOCTYPE html>
<html>
<head>
  <title>Database Operations</title>
</head>
<body>
  <h1>Insertion</h1>
  <form action="InsertServlet" method="post">
    <input type="text" name="name" placeholder="Name" required>
    <input type="text" name="email" placeholder="Email" required>
    <input type="submit" value="Insert">
  </form>

  <h1>Updation</h1>
  <form action="update" method="post">
    <input type="text" name="id" placeholder="ID" required>
    <input type="text" name="email" placeholder="New Email" required>
    <input type="submit" value="Update">
  </form>

  <h1>Deletion</h1>
  <form action="delete" method="Post">
    <input type="text" name="id" placeholder="ID" required>
    <input type="submit" value="Delete">
  </form>
</body>
</html>
```

Sql Query

```
create database details;
use details;
create table profiles(
id int primary key auto_increment,name varchar(36),email varchar(50));
describe profiles;
select * from profiles;
```

InsertServlet:

```
package inupde;
import java.io.IOException;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.PreparedStatement;
import java.sql.SQLException;
@WebServlet("/InsertServlet")
public class InsertServlet extends HttpServlet {
    private static final long serialVersionUID = 1L;

    protected void doPost(HttpServletRequest request, HttpServletResponse
response)
        throws ServletException, IOException {
        String url = "jdbc:mysql://localhost:3306/details";
        String username = "root";
        String password = "8143303511@Sri";

        String name = request.getParameter("name");
        String email = request.getParameter("email");

        try {
            Class.forName("com.mysql.jdbc.Driver");
            Connection connection = DriverManager.getConnection(url,
username, password);
            String insertQuery = "INSERT INTO profiles (name, email) VALUES
(?, ?)";
            PreparedStatement preparedStatement =
connection.prepareStatement(insertQuery);
            preparedStatement.setString(1, name);
            preparedStatement.setString(2, email);
            int rowsAffected = preparedStatement.executeUpdate();
            response.getWriter().println(rowsAffected + " record(s) inserted
successfully.");
            connection.close();
        } catch (SQLException | ClassNotFoundException e) {
            e.printStackTrace();
        }
    }
}
```


UpdateServlet

```
package inupde;

import java.io.IOException;
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.PreparedStatement;
import java.sql.SQLException;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
@WebServlet("/update")
public class UpdateServlet extends HttpServlet {
    private static final long serialVersionUID = 1L;

    protected void doPost(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {
        String url = "jdbc:mysql://localhost:3306/details";
        String username = "root";
        String password = "8143303511@Sri";

        int id = Integer.parseInt(request.getParameter("id"));
        String newEmail = request.getParameter("email");

        try {
            Class.forName("com.mysql.jdbc.Driver");
            Connection connection = DriverManager.getConnection(url,
username, password);
            String updateQuery = "UPDATE profiles SET email = ? WHERE id = ?";
            PreparedStatement preparedStatement =
connection.prepareStatement(updateQuery);
            preparedStatement.setString(1, newEmail);
            preparedStatement.setInt(2, id);
            int rowsAffected = preparedStatement.executeUpdate();
            response.getWriter().println(rowsAffected + " record(s) updated successfully.");
            connection.close();
        } catch (SQLException | ClassNotFoundException e) {
            e.printStackTrace();
        }
    }
}
```

DeleteServlet

```
package inupde;

import java.io.IOException;
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.PreparedStatement;
import java.sql.SQLException;

import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;

@WebServlet("/delete")
public class DeleteServlet extends HttpServlet {
    private static final long serialVersionUID = 1L;

    protected void doPost(HttpServletRequest request, HttpServletResponse
response)
        throws ServletException, IOException {
        String url = "jdbc:mysql://localhost:3306/details";
        String username = "root";
        String password = "8143303511@Sri";

        int id = Integer.parseInt(request.getParameter("id"));

        try {
            Class.forName("com.mysql.jdbc.Driver");
            Connection connection = DriverManager.getConnection(url,
username, password);
            String deleteQuery = "DELETE FROM profiles WHERE id = ?";
            PreparedStatement preparedStatement =
connection.prepareStatement(deleteQuery);
            preparedStatement.setInt(1, id);
            int rowsAffected = preparedStatement.executeUpdate();
            response.getWriter().println(rowsAffected + " record(s) deleted
successfully.");
            connection.close();
        } catch (SQLException | ClassNotFoundException e) {
            e.printStackTrace();
        }
    }
}
```

OUTPUTS

The screenshot shows a web browser window with the URL `http://localhost:8888/JDBCInsertUPDE/`. The browser tabs include `index.html`, `*InsertServlet.java`, `UpdateServlet.java`, and `DeleteServlet.java`. The page content is divided into three sections:

Insertion

Form fields: Name, Email, and an Insert button.

Updation

Form fields: ID, New Email, and an Update button.

Deletion

Form fields: ID and a Delete button.

The screenshot shows a web browser window with the URL `http://localhost:8888/JDBCInsertUPDE/InsertServlet`. The browser tabs include `index.html`, `*InsertServlet.java`, `UpdateServlet.java`, and `DeleteServlet.java`. The page content displays the message:

1 record(s) inserted successfully.

The screenshot shows a database result grid with the following data:

	id	name	email
▶	3	sai	sai@m.com
✱	NULL	NULL	NULL