

DATABASE SERVLET WEB APPLICATION USING TOMCAT SERVER

Aim:

Develop a simple web application with MySql database and Tomcat Server Authentication Application.

Project Structure

- webapps

- StudentDB

- index.html

- lib

- mysql-connector-java-8.3.0.jar

- WEB-INF

- web.xml

- classes

- Main.java

Program code:

index.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Student Web App</title>
  <style>
    body{
      height: 100%;
      width: 100%;
      display: flex;
      align-items: center;
      justify-content: center;
      background-color: lightcoral;
    }
    .content{
      height: 70%;
      width: 400px;
      background-color: red;
      padding: 5%;
    }
  </style>
</head>
<body>
  <div class="content">
    <h1>Student Web App</h1>
  </div>
</body>
</html>
```

```

    }
    h1{
        text-align: center;
    }
    label{
        padding: 10px;
        display: block;
    }
    button{
        margin-left: 35%;
        padding: 4px 30px;
        margin-top: 20px;
    }
</style>
</head>
<body>

    <section class="content">
        <h1>LOGIN</h1>
        <form action="login" method="get">
            <label for="name">Username: <input type="text" name="username"></label>
            <label for="age">Password: <input type="text" name="password"></label>
            <button type="submit">Login</button>
        </form>
    </section>
</body>
</html>

```

web.xml

```

<web-app>
    <servlet>
        <servlet-name>Main</servlet-name>
        <servlet-class>Main</servlet-class>
    </servlet>
    <servlet-mapping>
        <servlet-name>Main</servlet-name>
        <url-pattern>/login</url-pattern>
    </servlet-mapping>
    <welcome-file-list>
        <welcome-file>index.html</welcome-file>
    </welcome-file-list>
</web-app>

```

Main.java

```

import java.io.*;
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.PreparedStatement;

```

```

import java.sql.ResultSet;
import java.sql.SQLException;
import javax.servlet.*;
import javax.servlet.http.*;

public class Main extends HttpServlet {
    private static final String URL = "jdbc:mysql://localhost:3306/student";
    private static final String USERNAME = "user";
    private static final String PASSWORD = "password";

    static {
        try {
            Class.forName("com.mysql.cj.jdbc.Driver");
        } catch (ClassNotFoundException e) {
            throw new RuntimeException("Error loading MySQL JDBC driver", e);
        }
    }

    public void doGet(HttpServletRequest request, HttpServletResponse response)
        throws IOException, ServletException {
        response.setContentType("text/html");
        PrintWriter out = response.getWriter();

        String username = request.getParameter("username");
        String password = request.getParameter("password");

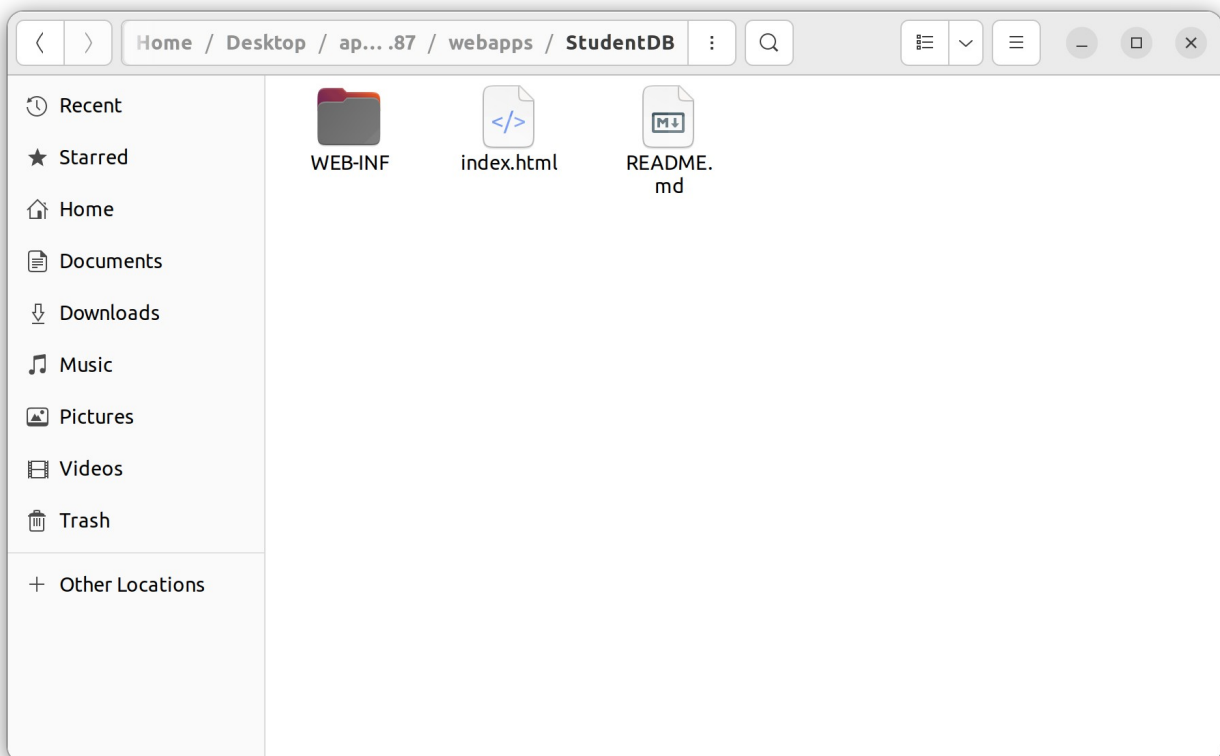
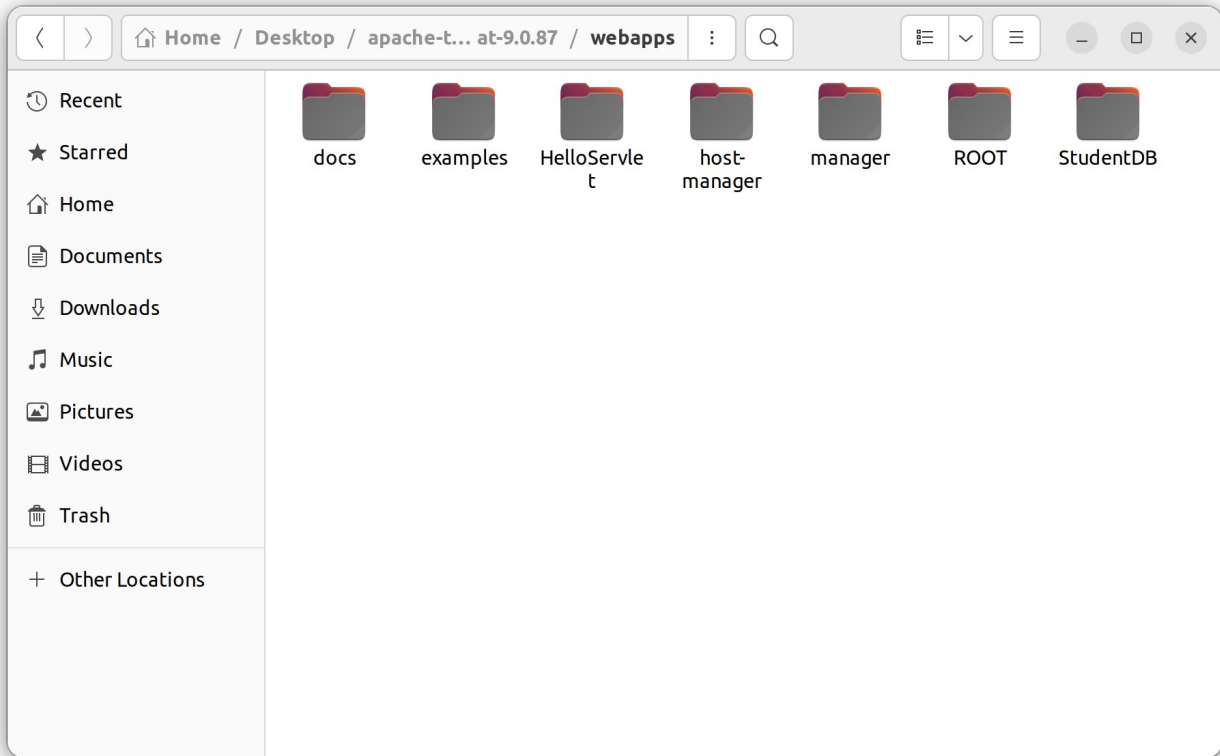
        try (Connection connection = DriverManager.getConnection(URL, USERNAME,
PASSWORD)) {
            String sql = "SELECT * FROM cse WHERE name = ? AND password = ?";
            try (PreparedStatement statement = connection.prepareStatement(sql)) {
                statement.setString(1, username);
                statement.setString(2, password);

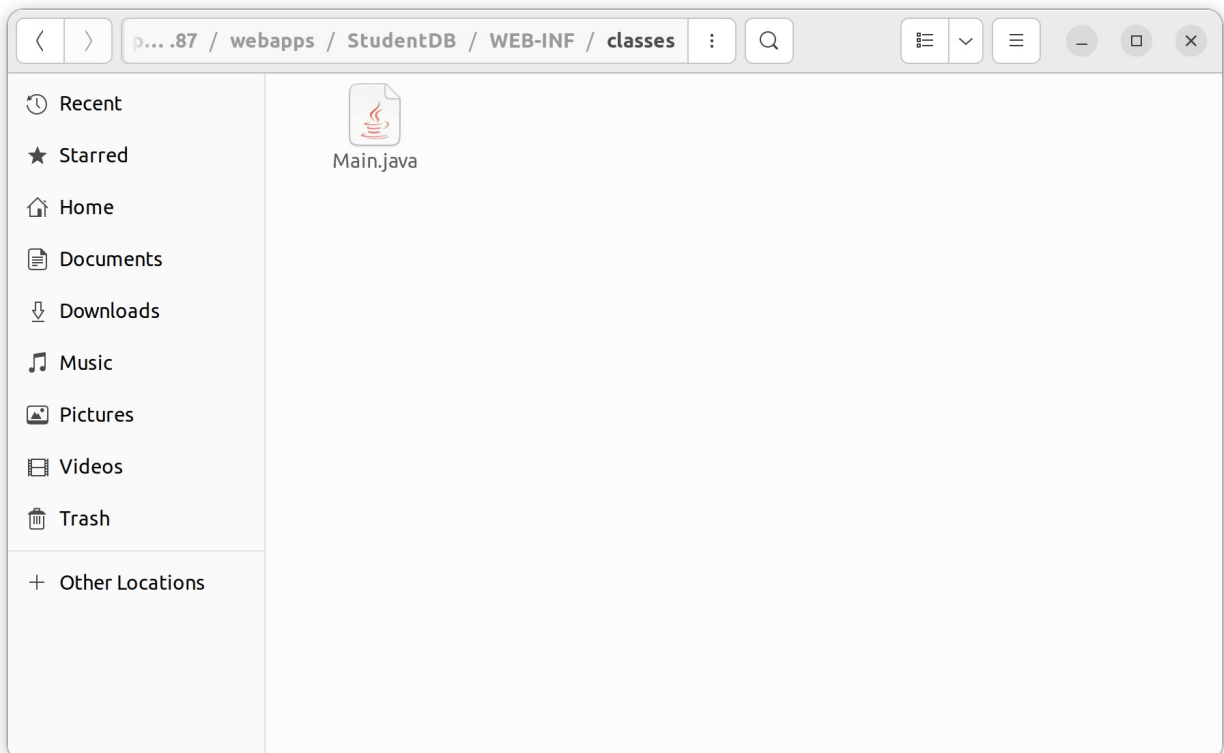
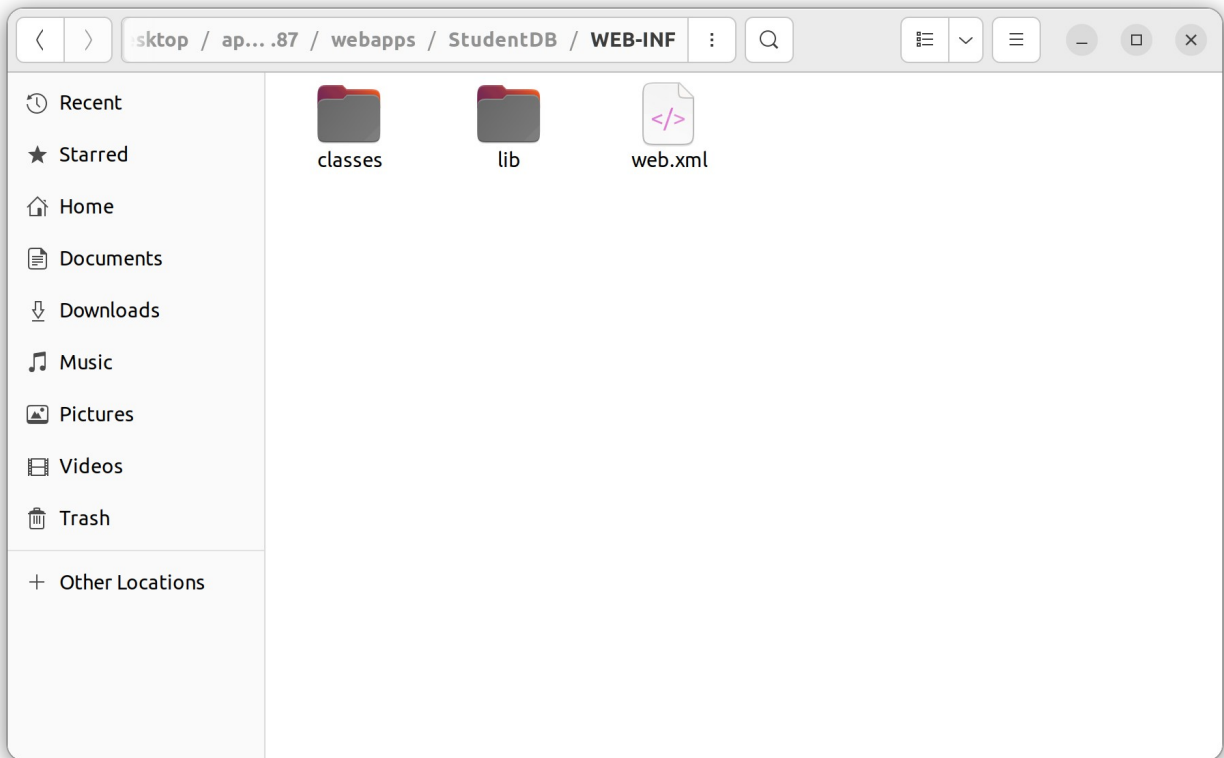
                try (ResultSet resultSet = statement.executeQuery()) {
                    if (resultSet.next()) {
                        out.println("<html><head><title>Login Success</title></head><body>");
                        out.println("<h2>Login Success</h2>");
                        out.println("<h2>Hello " + username + "!</h2>");
                        out.println("</body></html>");
                    } else {
                        out.println("<html><head><title>User Not Found</title></head><body>");
                        out.println("<h2>User Not Found</h2>");
                        out.println("</body></html>");
                    }
                }
            }
        } catch (SQLException e) {
            out.println("<html><head><title>Database Error</title></head><body>");
            out.println("<h2>Database Error</h2>");
            out.println("<p>" + e.getMessage() + "</p>");
            out.println("</body></html>");
        }
    }
}

```

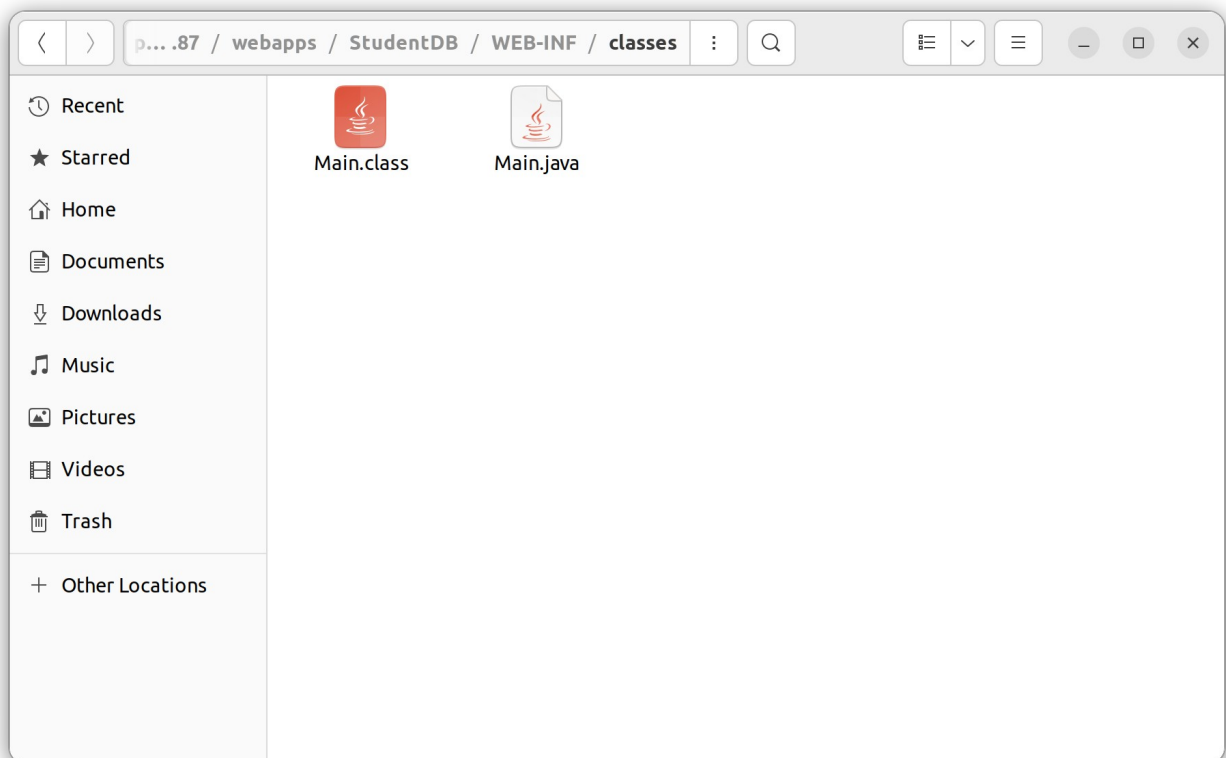
```
}  
}
```

Output:





```
rohith@rohith: ~/Desktop/apache-tomcat-9.0.87/webapps/StudentDB/WEB-INF/classes
rohith@rohith:~/Desktop/apache-tomcat-9.0.87/webapps/StudentDB/WEB-INF/classes$ javac -classpath ~/tomcat-servlet-api-9.0.4.jar Main.java
rohith@rohith:~/Desktop/apache-tomcat-9.0.87/webapps/StudentDB/WEB-INF/classes$
```



```
rohith@rohith: ~  
rohith@rohith:~$ mysql -u user -p  
Enter password:  
Welcome to the MySQL monitor.  Commands end with ; or \g.  
Your MySQL connection id is 8  
Server version: 8.0.36-0ubuntu0.22.04.1 (Ubuntu)  
Copyright (c) 2000, 2024, Oracle and/or its affiliates.  
Oracle is a registered trademark of Oracle Corporation and/or its  
affiliates. Other names may be trademarks of their respective  
owners.  
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.  
mysql> CREATE DATABASE student;  
Query OK, 1 row affected (0.02 sec)  
mysql> USE student;  
Database changed  
mysql> CREATE TABLE cse(name VARCHAR(255), password VARCHAR(255));  
Query OK, 0 rows affected (0.09 sec)  
mysql> INSERT INTO cse VALUES('Rohith','1234');  
Query OK, 1 row affected (0.02 sec)  
mysql> SELECT * FROM cse;  
+-----+  
| name | password |  
+-----+  
| Rohith | 1234 |  
+-----+  
1 row in set (0.00 sec)  
mysql>
```

```
rohith@rohith: ~  
rohith@rohith:~$ ${CATALINA_HOME}/bin/startup.sh  
Using CATALINA_BASE:   /home/rohith/Desktop/apache-tomcat-9.0.87  
Using CATALINA_HOME:   /home/rohith/Desktop/apache-tomcat-9.0.87  
Using CATALINA_TMPDIR: /home/rohith/Desktop/apache-tomcat-9.0.87/temp  
Using JRE_HOME:        /usr  
Using CLASSPATH:       /home/rohith/Desktop/apache-tomcat-9.0.87/bin/bootstrap.jar:/home/rohith/Desktop/apache-tomcat-9.0.87/bin/tomcat-juli.jar  
Tomcat started.  
rohith@rohith:~$
```


Browser tabs: Inbox (8) - rohith2110565 x UCS2611-IP Lab- CSE-B-2 x Apache Tomcat/9.0.87 x

Address bar: localhost:8080

Navigation: Home Documentation Configuration Examples Wiki Mailing Lists Find Help

Apache Tomcat/9.0.87

If you're seeing this, you've successfully installed Tomcat. Congratulations!



Recommended Reading:

- [Security Considerations How-To](#)
- [Manager Application How-To](#)
- [Clustering/Session Replication How-To](#)

[Server Status](#) [Manager App](#) [Host Manager](#)

Developer Quick Start

- [Tomcat Setup](#)
- [First Web Application](#)
- [Realms & AAA](#)
- [JDBC DataSources](#)
- [Examples](#)
- [Servlet Specifications](#)
- [Tomcat Versions](#)

Managing Tomcat

For security, access to the [manager webapp](#) is restricted. Users are defined in:

SCATALINA_HOME/conf/tomcat-users.xml

In Tomcat 9.0 access to the manager application is split between different users. [Read more...](#)

[Release Notes](#)

[Changelog](#)

[Migration Guide](#)

[Security Notices](#)

Documentation

[Tomcat 9.0 Documentation](#)

[Tomcat 9.0 Configuration](#)

[Tomcat Wiki](#)

Find additional important configuration information in:

SCATALINA_HOME/RUNNING.txt

Developers may be interested in:

- [Tomcat 9.0 Bug Database](#)
- [Tomcat 9.0 JavaDocs](#)
- [Tomcat 9.0 Git Repository at GitHub](#)

Getting Help

FAQ and Mailing Lists

The following mailing lists are available:

[tomcat-announce](#)

Important announcements, releases, security vulnerability notifications. (Low volume).

[tomcat-users](#)

User support and discussion

[taglibs-user](#)

User support and discussion for [Apache Taglibs](#)

[tomcat-dev](#)

Development mailing list, including commit messages

Other Downloads Other Documentation Get Involved Miscellaneous Apache Software Foundation

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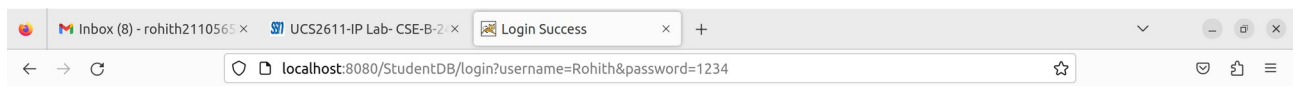
Address bar: localhost:8080/StudentDB/

LOGIN

Username:

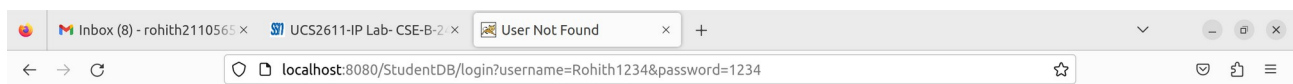
Password:

[Login](#)



Login Success

Hello Rohith!



User Not Found

