Practical - 3

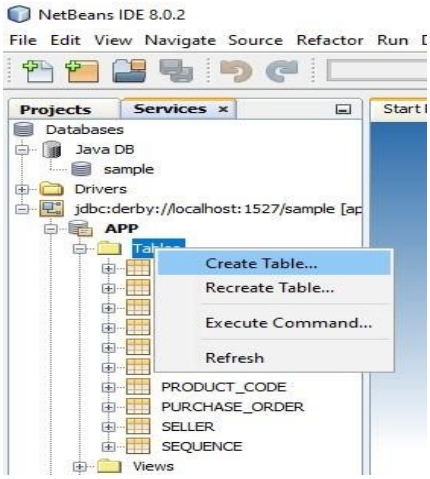
Aim: Write a program to implement RESTFull WebService.

1. Click on Window menu and click on Projects, Files & Services to open it.

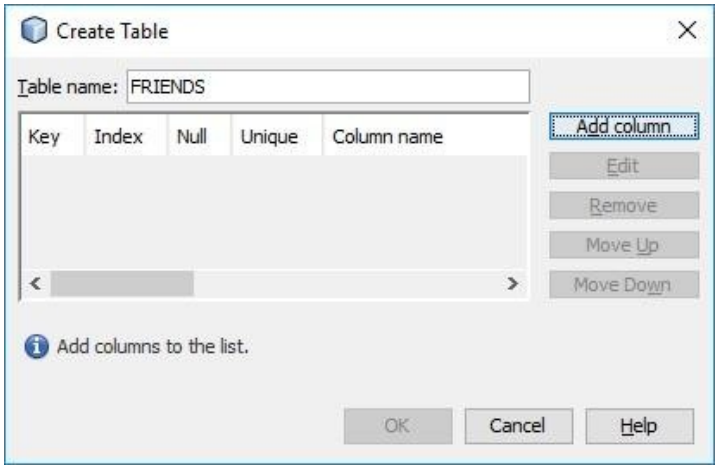
2. Right click on Java DB and then click on Start Server to start the server .

3. Now expand Java DB and right click on sample and then click on connect to connect the sample database with server.

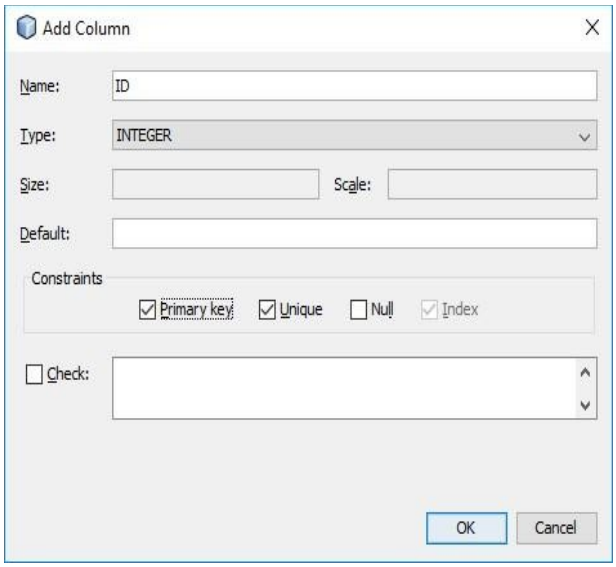
4. Now we are going to create a table in default database sample.
Right click on Table -> Create Table



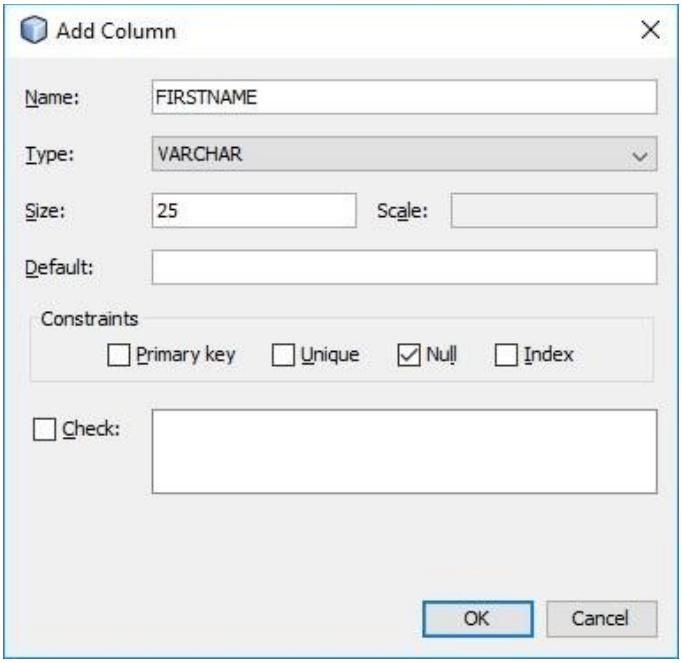
5. Give table name as FRIENDS.



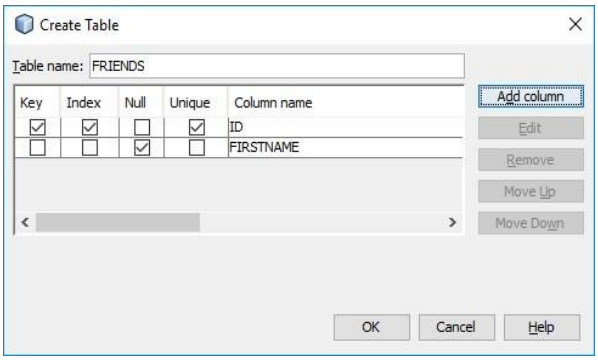
6. click on Add column button to add columns in table.
Enter details as in below pic and select Primary key. After that click on OK button.



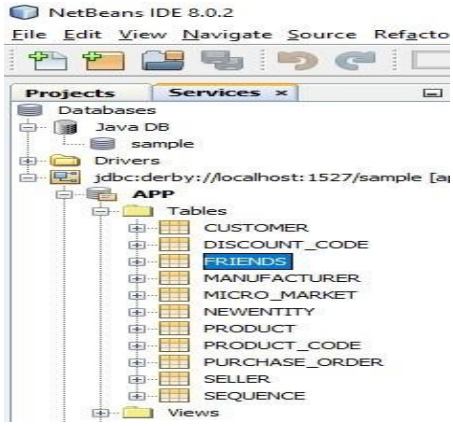
7. Now add second column with following detail. But don't select primary and click on OK button.



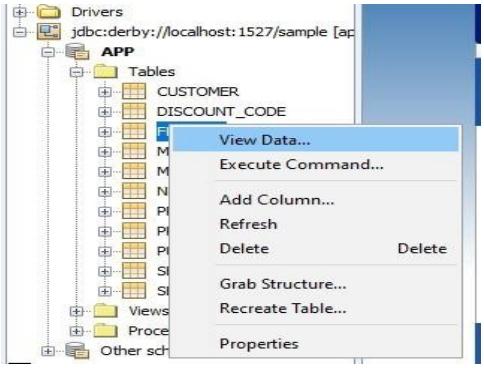
8. click on OK button.



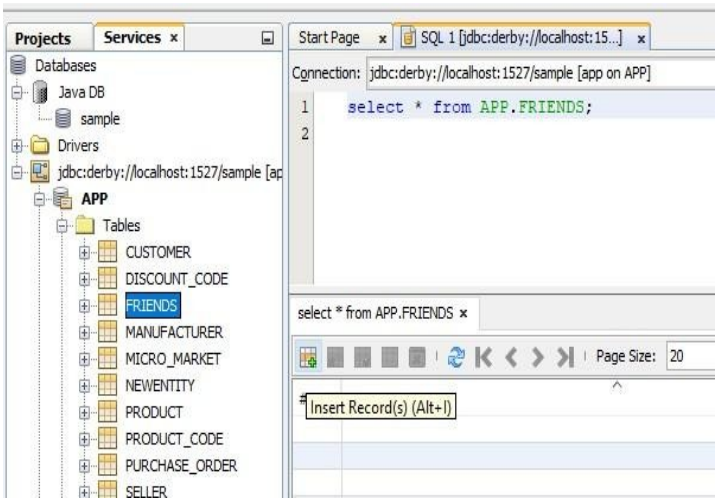
9. Now you can see a table with name FRIENDS in the table.



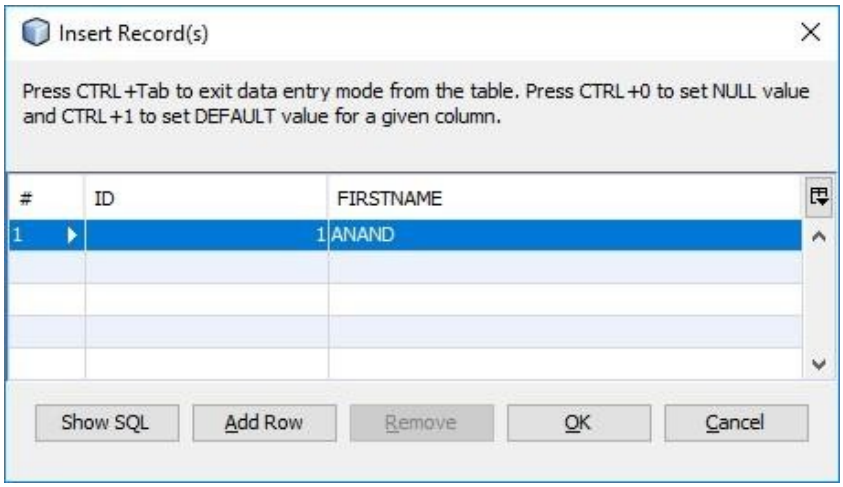
10. Right click on FRIENDS to view and add records into it.



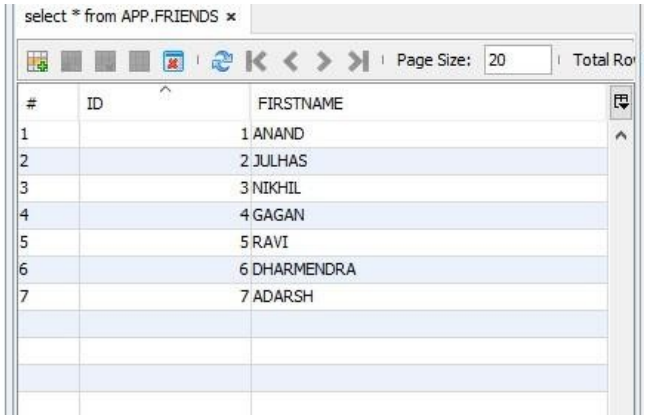
11. click on the leftmost icon in second panel to insert some record.



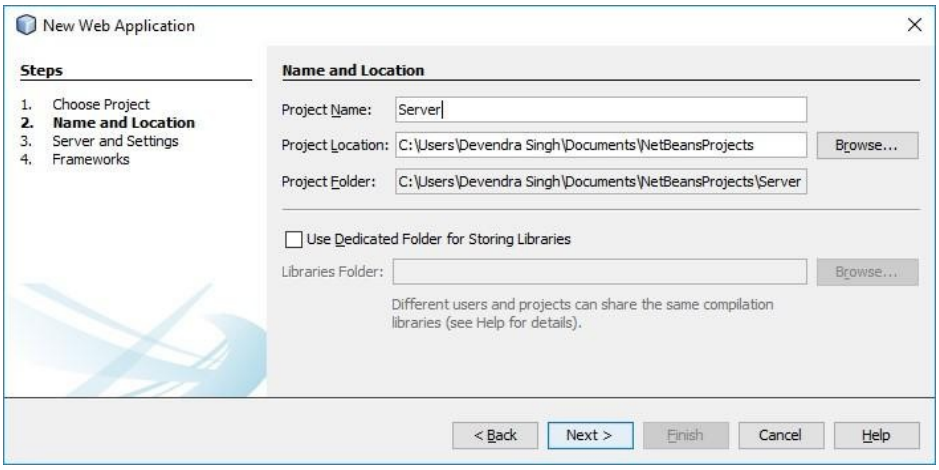
12. Insert a record and then click on Add Row button to insert more record. After that click on OK button to finish.



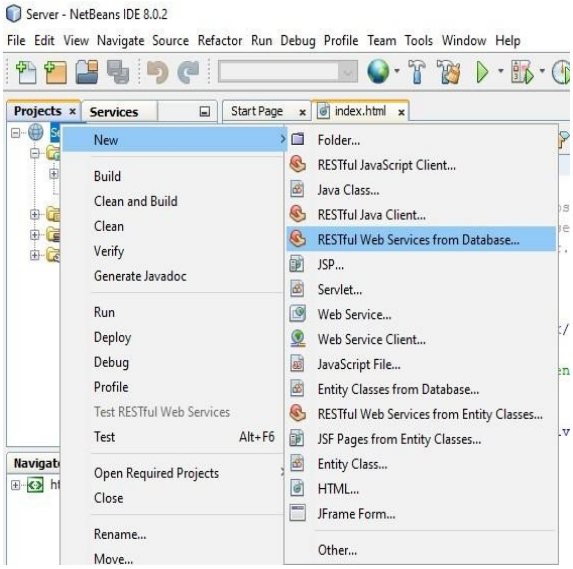
13. As you can see, I have entered 7 records.



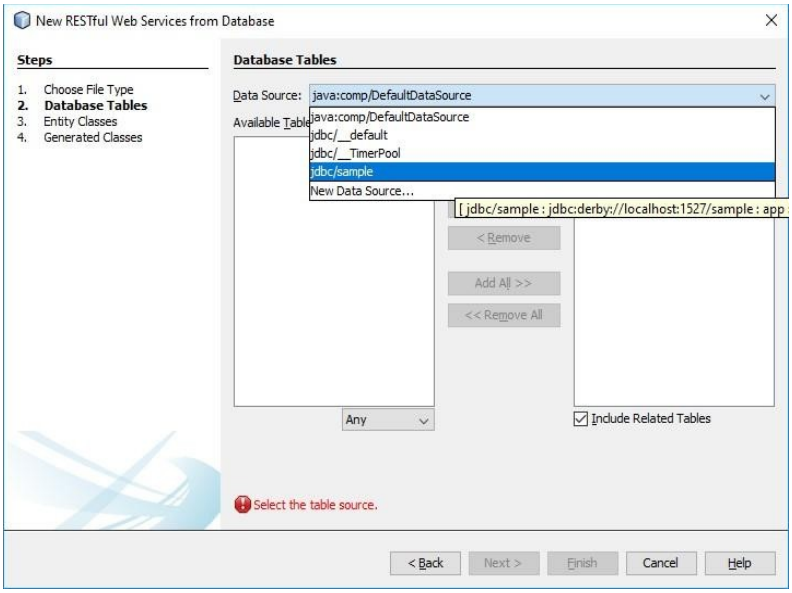
14. create a web application with name Server. After that click on Next and then Finish button.



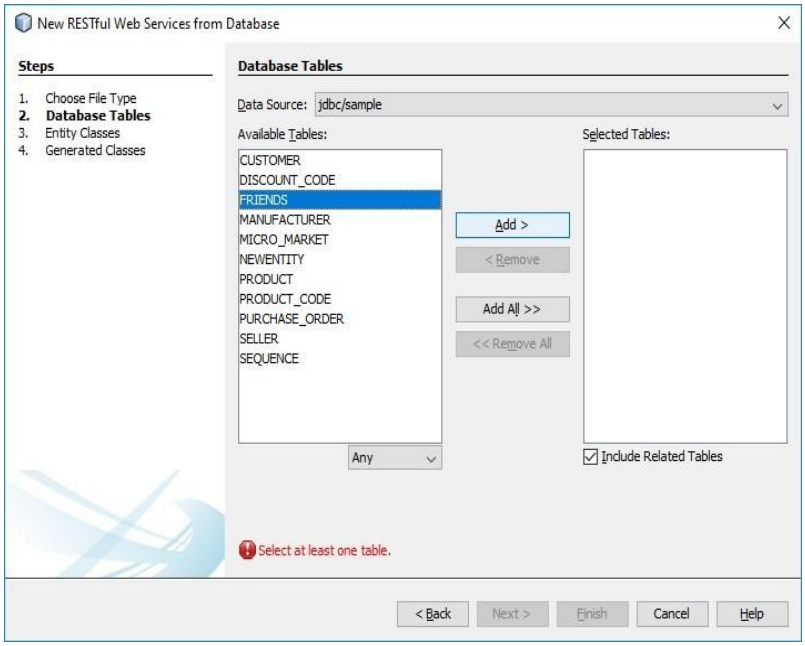
15. Now create a RESTful Web Service from Database by right click on project name.



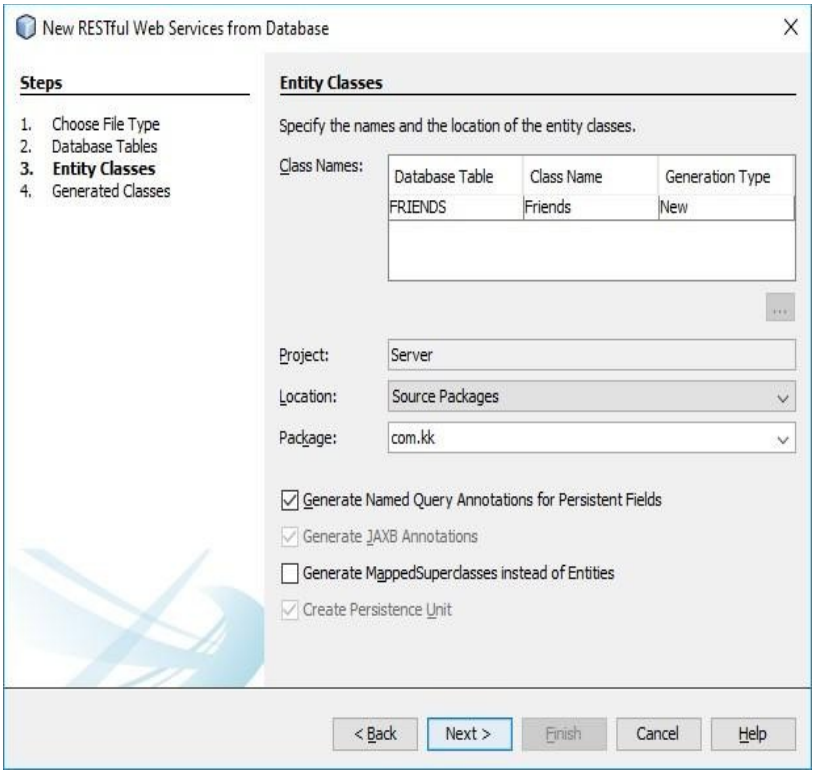
16. Choose Data Source jdbc/sample.



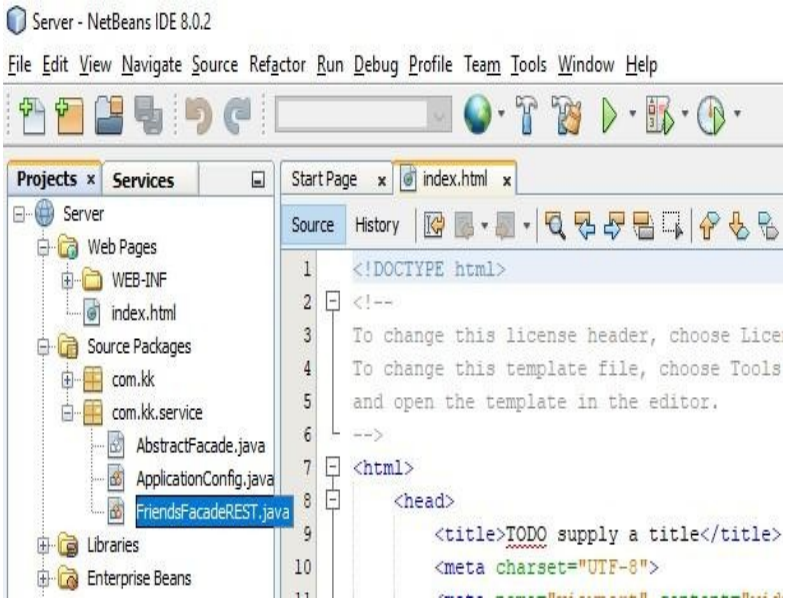
17. Now select FRIENDS and click on Add button. After that click on Next button.



18. Enter Package name as com.kk and click on Next button and then Finish.

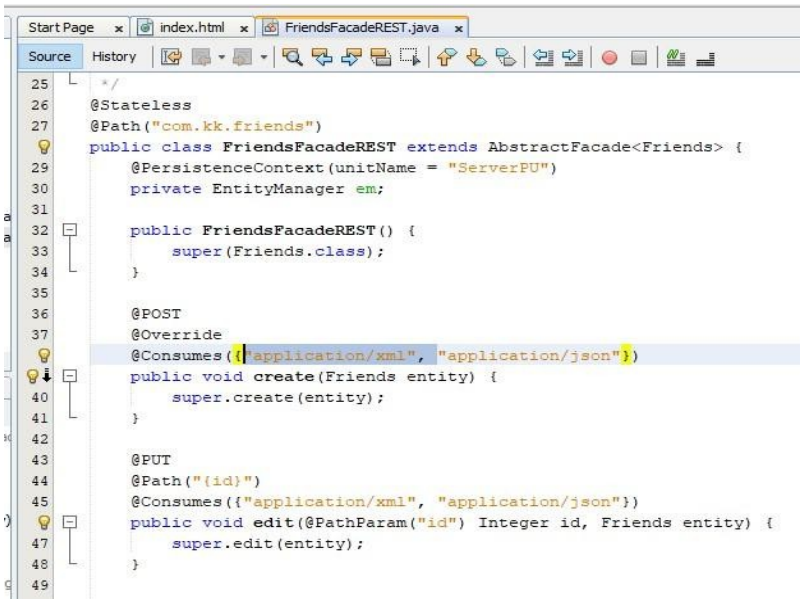


19. Now open selected file by double click on it.

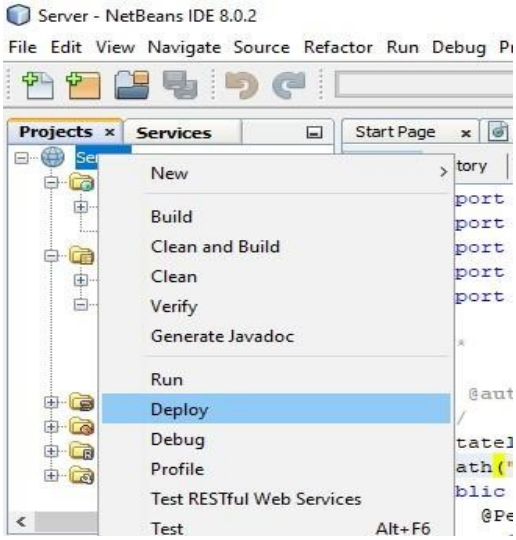


20. Now remove the selected part from every method in this file. So that it will communicate only in JSON format. You can also use methods to convert it. But this is easiest method.

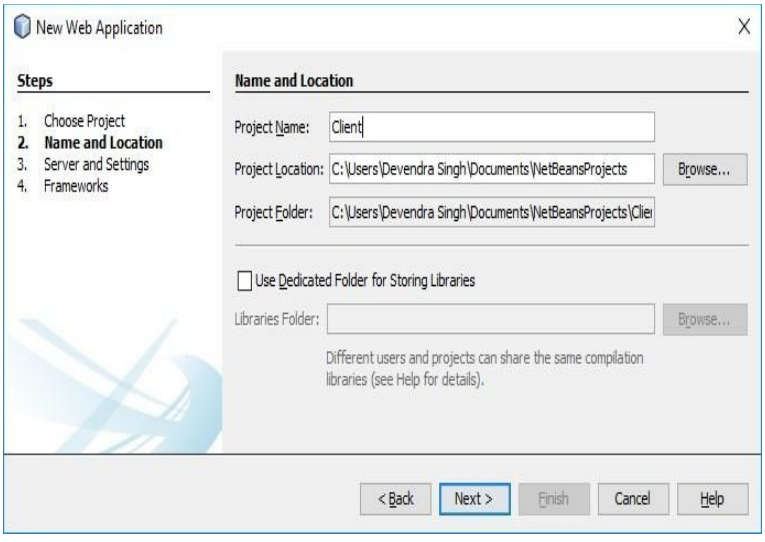
Note : If you get error “javax.ws.rs” doesnot exist, add Java EE 6 API Library in NetBeans IDE by doing myProject->Properties->Libraries->Add Library



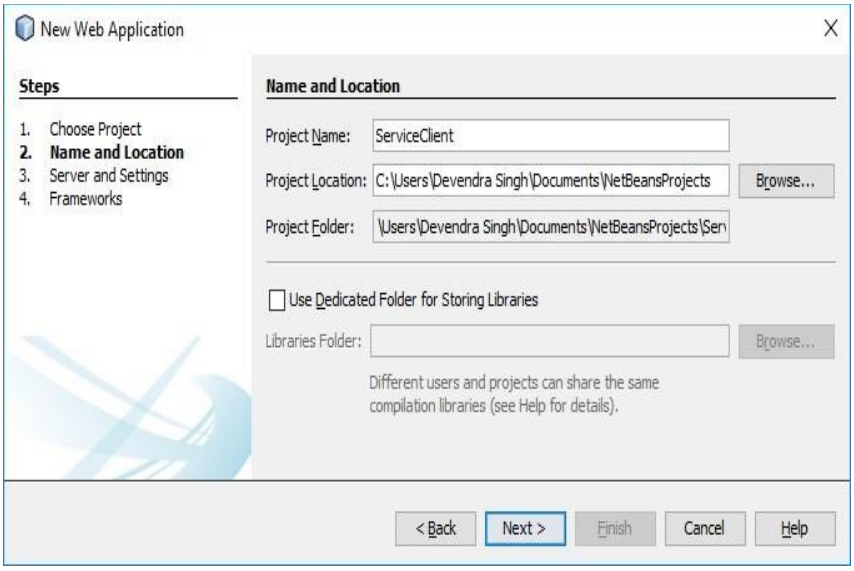
21. After that right click on project name and Deploy it.



22. Now create one more Web Application as Client. After that click on Next and then Finish button.

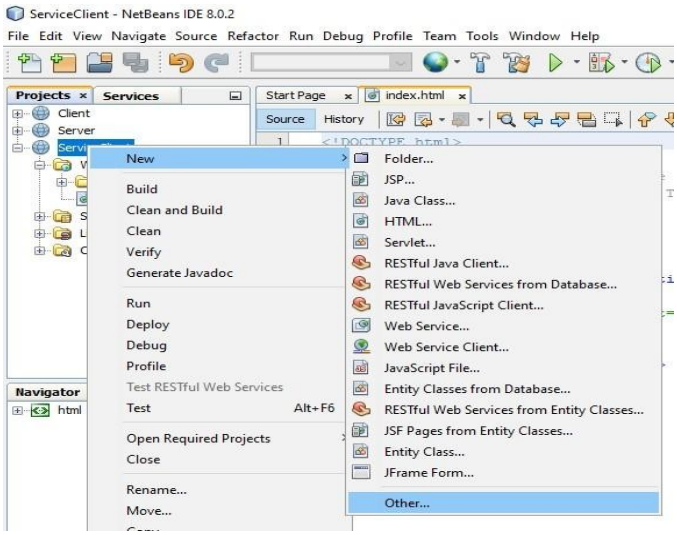


23. Create a Web Application with name ServiceClient.

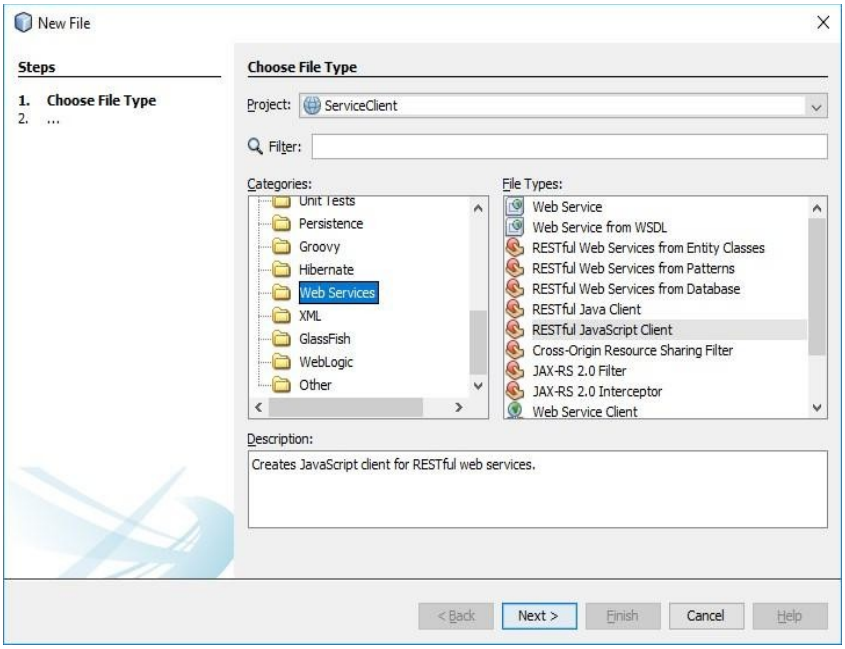


24. Now create a RESTful Java Client.

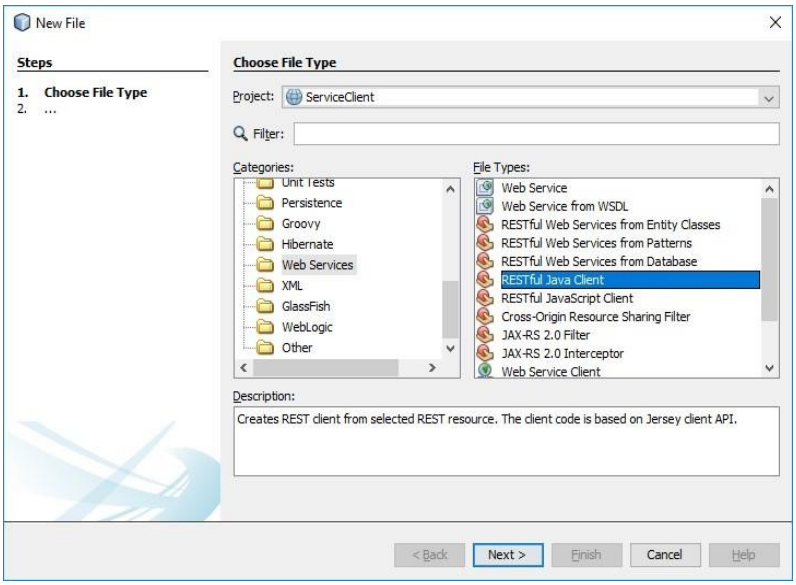
Right click on ServiceClient -> New -> Other.



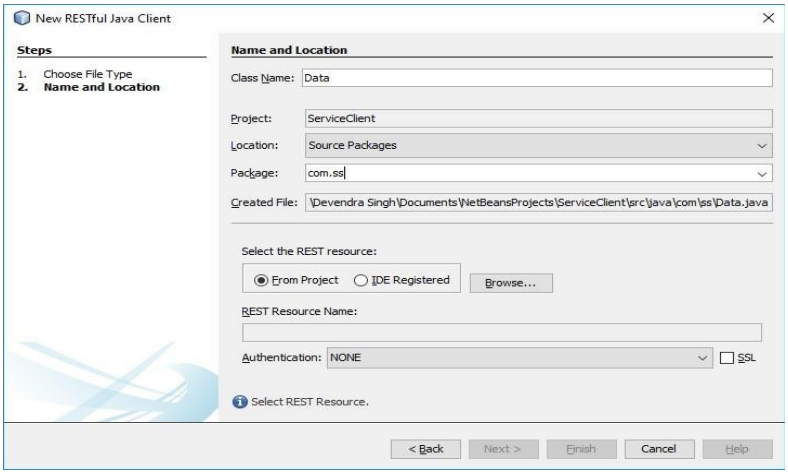
25. Drag down and select Web Services and in side panel select RESTful Java Client.



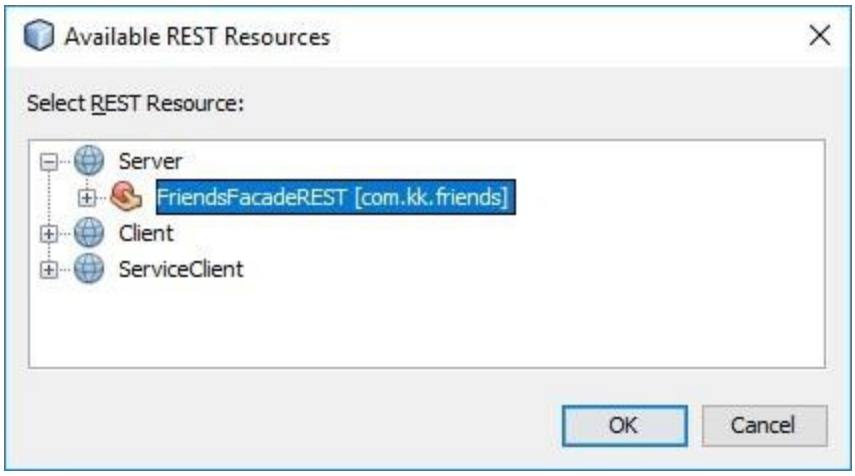
26. After select RESTful Java Client click on Next.



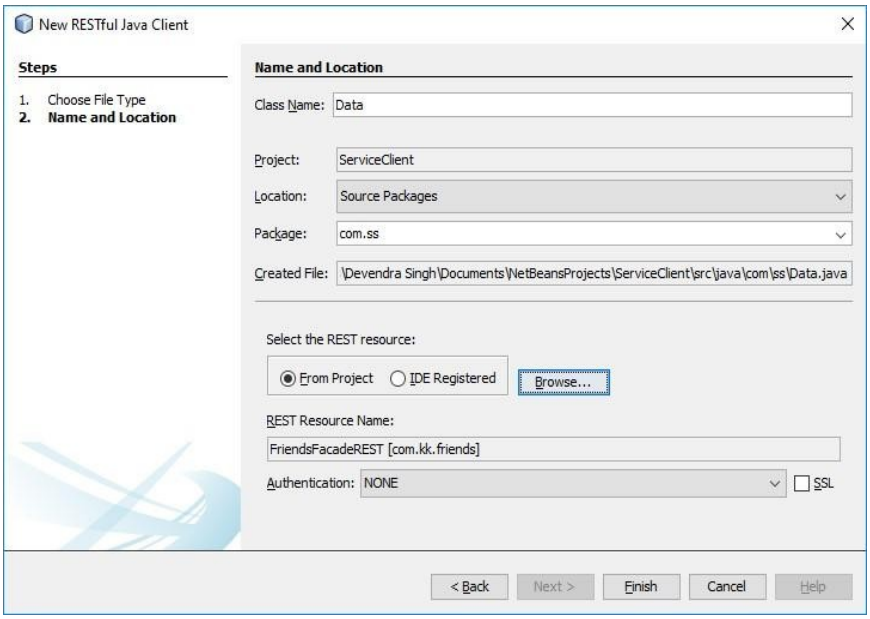
27. Enter following data. Class Name -> Data
Package -> com.ss



28. Now click on Browse button and select the option into the below pic. After select click on OK button.

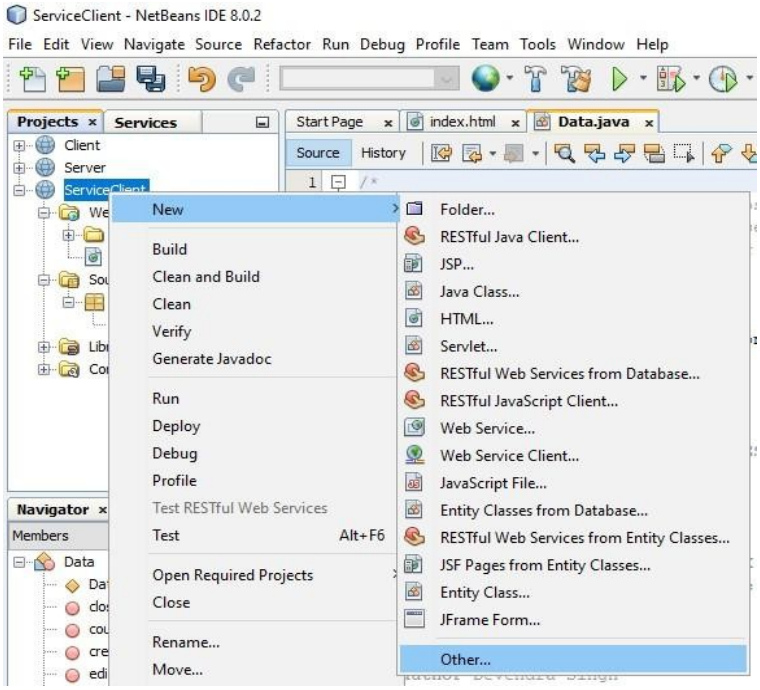


29. Click on Finish.

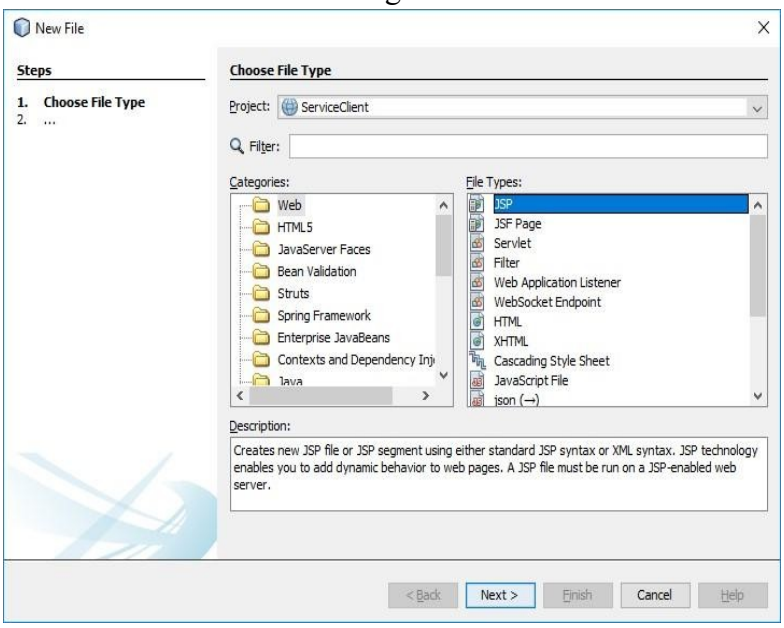


30. Now create a JSP page.

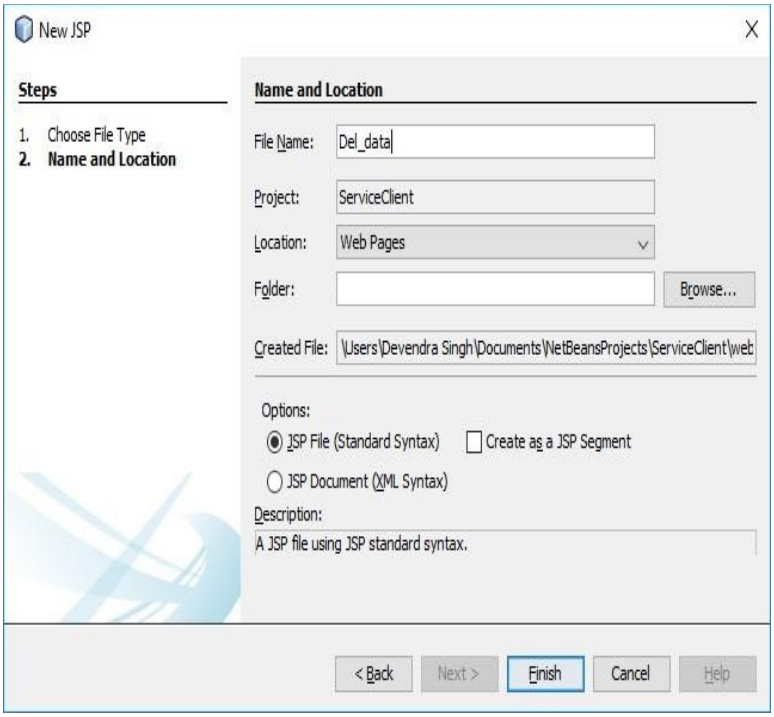
Right click on ServiceClient -> New -> Other



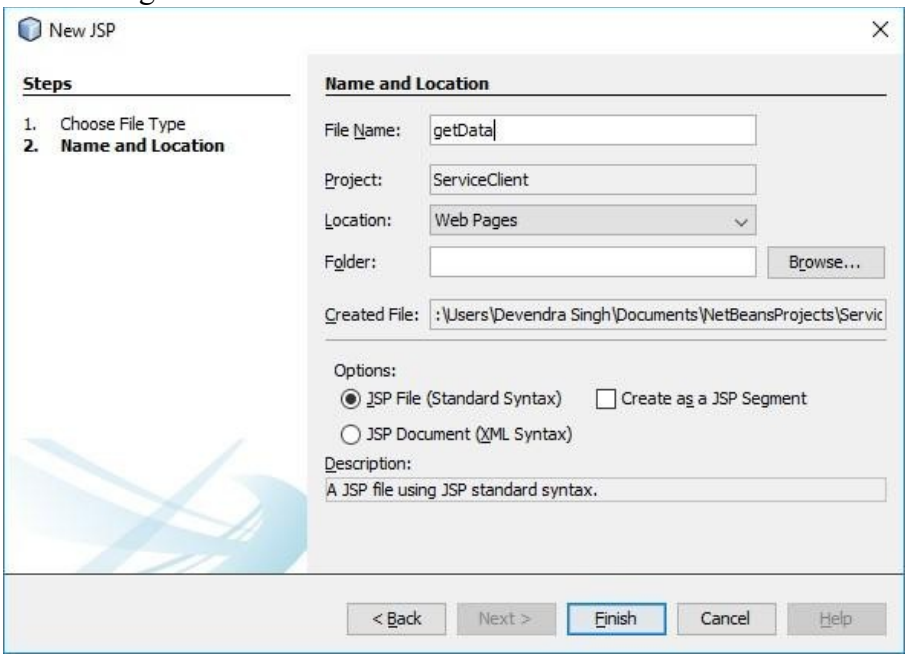
31. Select Web in Categories section -> Select JSP and click on Next button.



32. Enter File Name Del_data and click on Finish button.

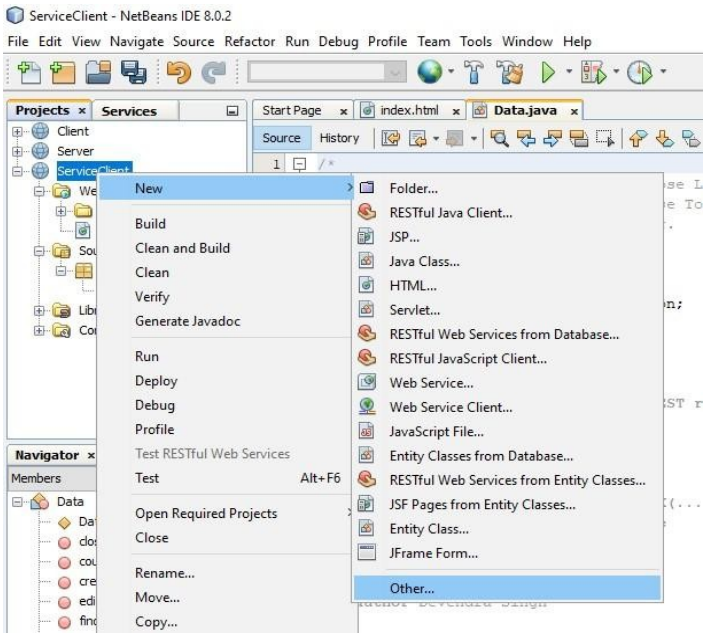


33. Now create one more JSP file by follow the step number 30, 31 & 32. But File Name will be getData.

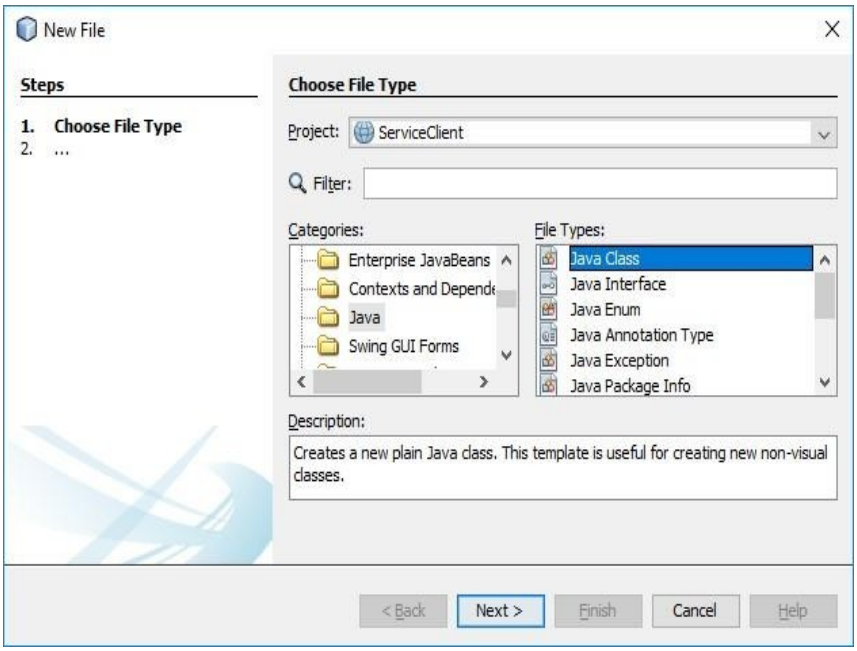


34. Now create a Java class.

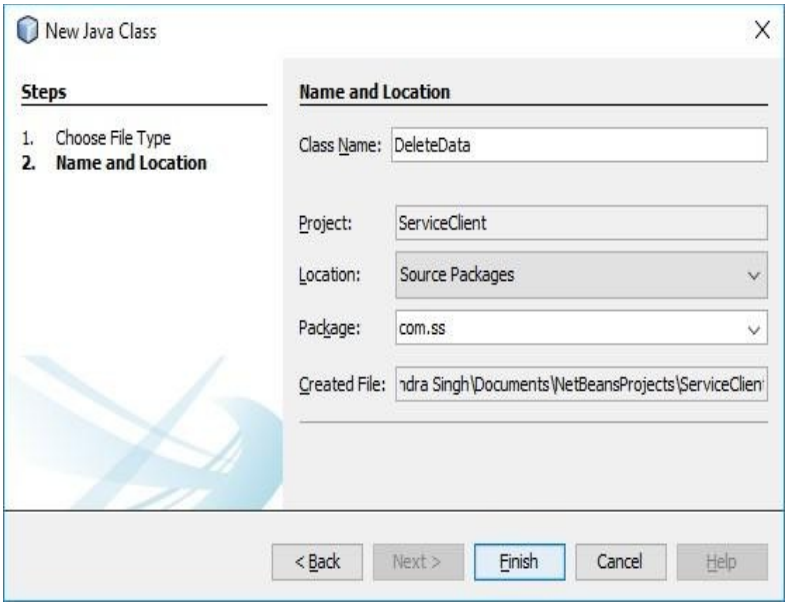
Right click on ServiceClient -> New -> Other



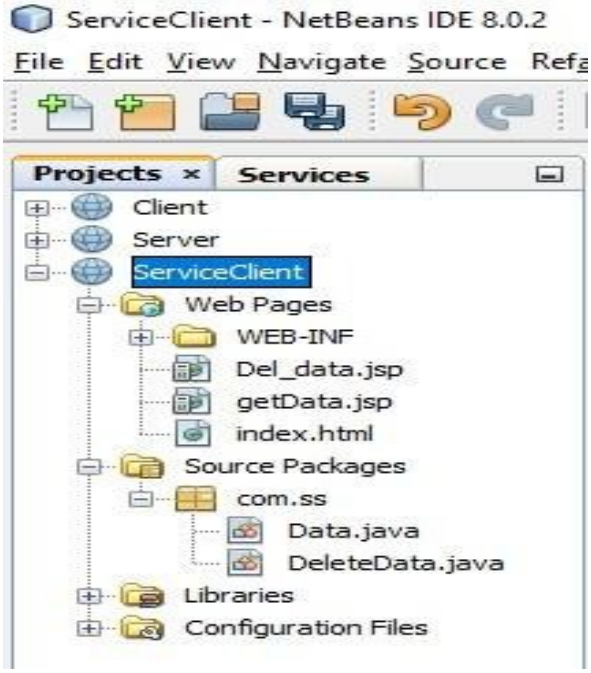
35. In Categories select Java and in File Types select Java Class. Click Next button.



36. Enter Class Name DeleteData and Package com.ss. After that click on Finish.

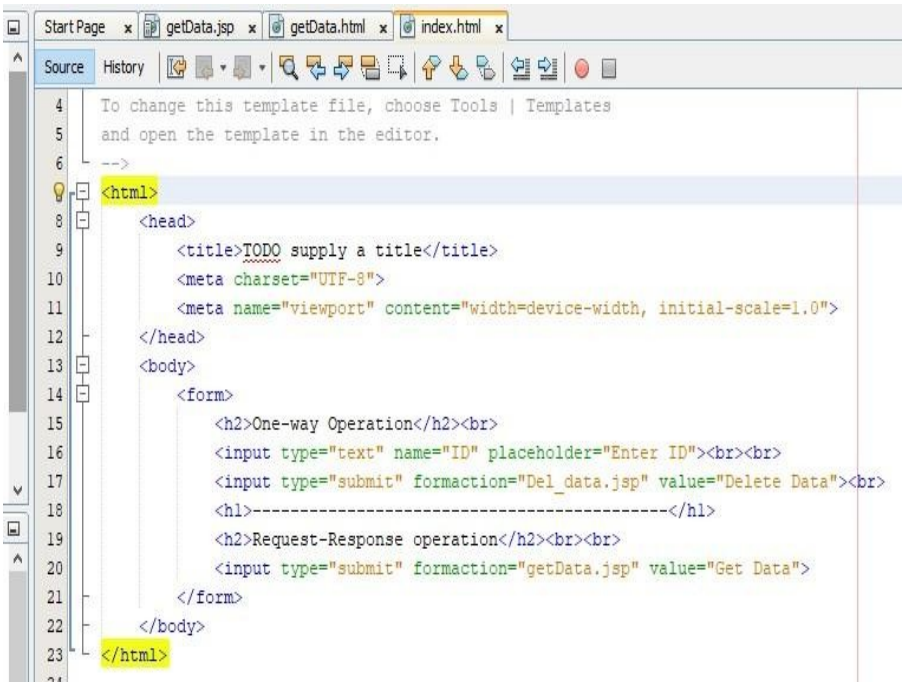


37. Your project file structure will look like below.



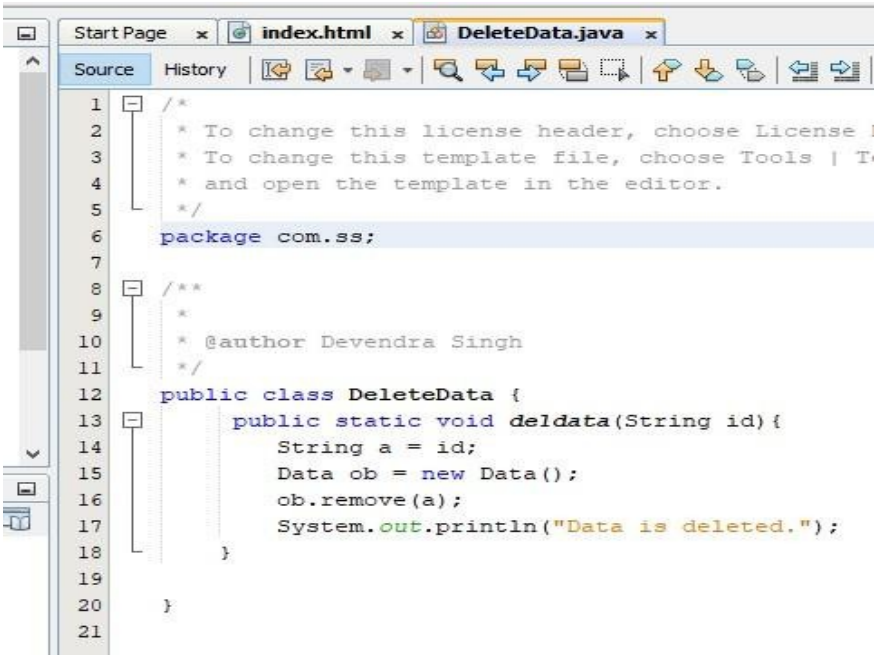
38. Now open the index.html of ServiceClient project by double click on it and add the following code in between body tag.

```
<form>
    <h2>One-way Operation</h2><br>
    <input type="text" name="ID" placeholder="Enter ID"><br><br>
    <input type="submit" formaction="Del_data.jsp" value="Delete Data"><br>

    <h1>-----------------------------------------</h1>

    <h2>Request-Response operation</h2><br><br>
    <input type="submit" formaction="getData.jsp" value="Get Data">
</form>
```



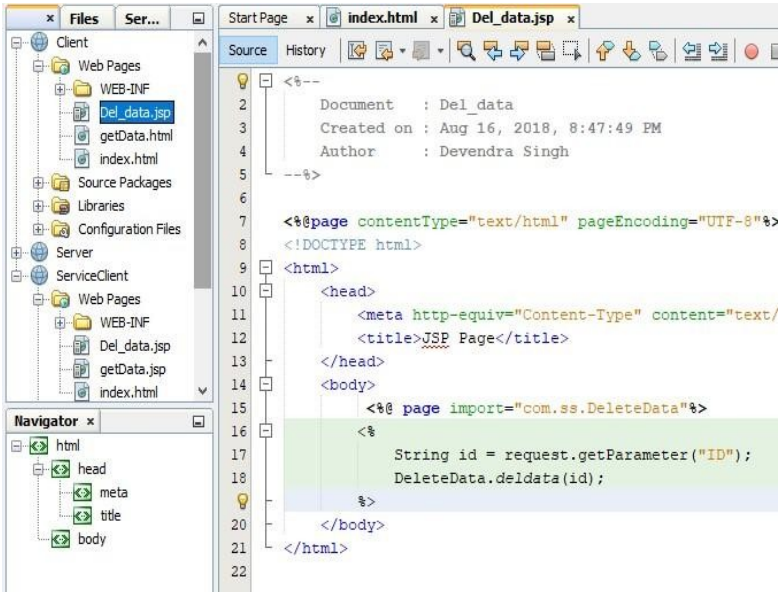
39. Now open DeleteData.java file by double click on it and add the following code in the class and save it by pressing Ctrl+S.

```
public static void deldata(String id){
        String a = id;
        Data ob = new Data();
        ob.remove(a);
        System.out.println("Data is deleted.");
    }
```



40. Now open the Del_data.jsp file and replace the contents of body with the following code.

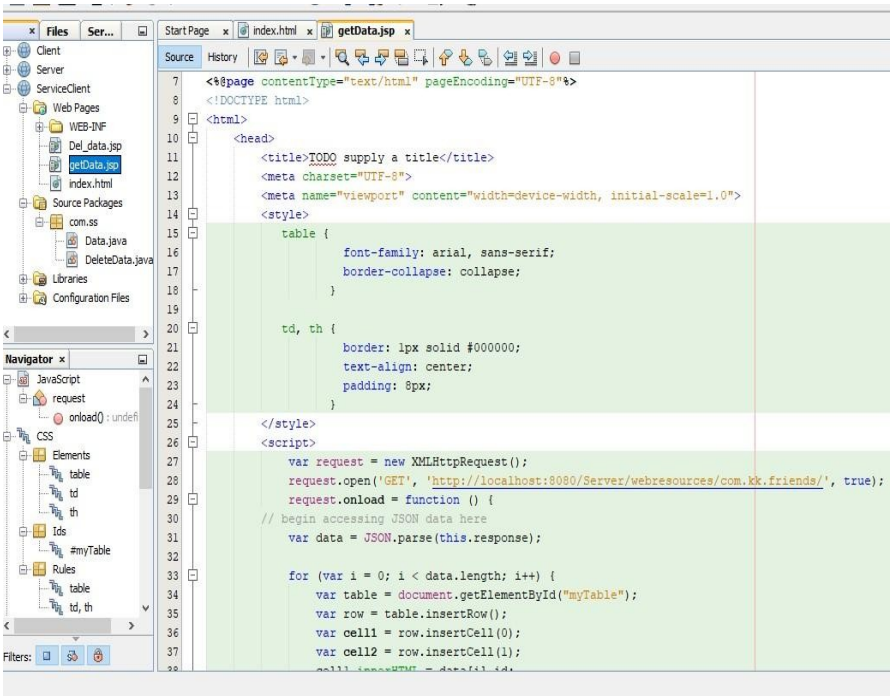
```
<%@ page import="com.ss.DeleteData"%>
    <%
      String id = request.getParameter("ID");
      DeleteData.deldata(id);
    %>
```



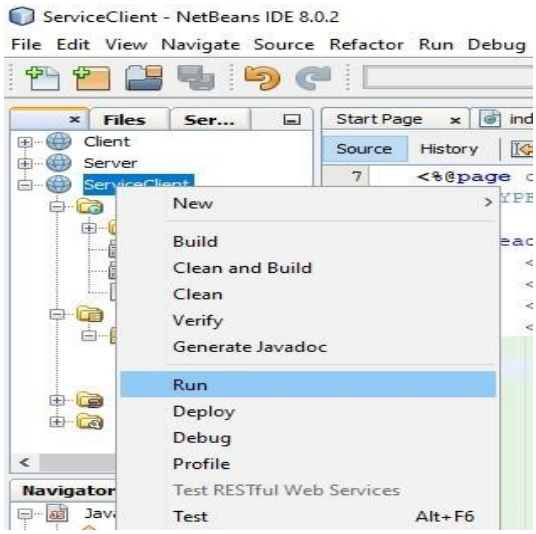
41. Now open the getData.jsp file and replace the contents of html tag with the following code and save it.

```
<head>
    <title>TODO supply a title</title>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initialscale=1.0">
    <style>
    table {
            font-family: arial, sans-serif;
           border-collapse: collapse;
        }
    td, th {
          border: 1px solid #000000;
          text-align: center;
          padding: 8px;
        }
    </style>
    <script>
      var request = new XMLHttpRequest();
      request.open('GET','http://localhost:8080/Server/webresources/com.kk.friends/', true);
request.onload = function () {
                  // begin accessing JSON data here
                  var data = JSON.parse(this.response);
                  for (var i = 0; i < data.length; i++) {
```

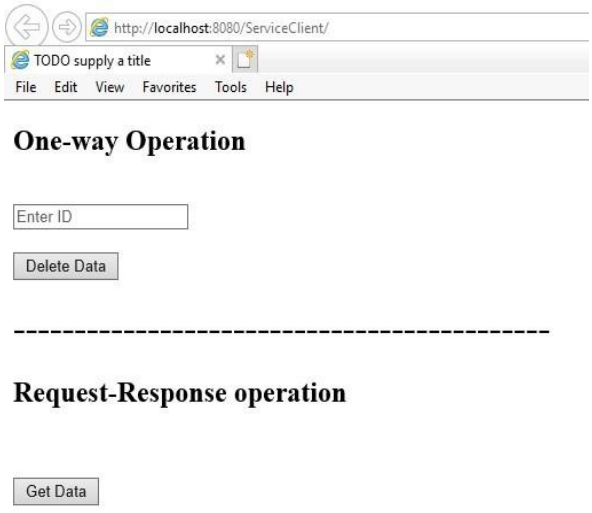
```
                var table = document.getElementById("myTable");
                    var row = table.insertRow();                var
                    cell1 = row.insertCell(0);              var
                    cell2 = row.insertCell(1);
                    cell1.innerHTML = data[i].id;

                    cell2.innerHTML = data[i].firstname;
        }
    };

    request.send();
    </script>

</head>
<body>
    <table id="myTable">
        <tr>
            <th> ID</th>
            <th>NAME</th>
        </tr>
    </table>

</body>
```



42. Now Run the ServiceClient project.



43. On run the project following window will open in browser.



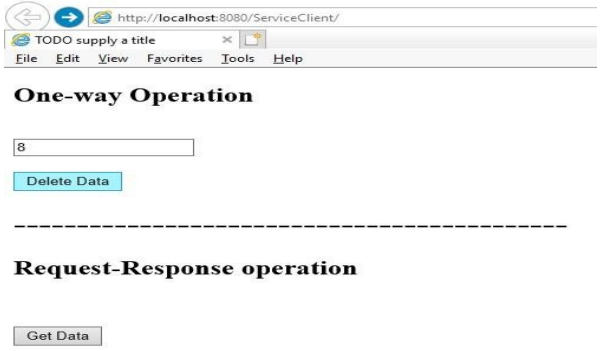
If you will click on Delete Data button, record of entered ID will be deleted.

If you will click on Get Data button Request for the data will be send and it will return the data as response. Hence it is two way operation.

44. By click on Get Data button.

ID	NAME
1	ANAND
2	JULHAS
3	NIKHIL
4	RAVI
5	GAGAN
6	DHARMENDRA
7	ADARSH
8	DEVENDRA

45. Entering ID 8 and clicking on Delete Data button.



46. Now go back and again click on Get Data button. Refresh the page, You will see data with id number 8 is deleted.

ID	NAME
1	ANAND
2	JULHAS
3	NIKHIL
4	RAVI
5	GAGAN
6	DHARMENDRA
7	ADARSH