Mini-Project Documentation

Anurag K S V [121810303007] - Vishal Varma [121810303006] - Rachita B [121810303030]

Introduction

We have chosen the topic of re-creating the functionality of a bank website for this mini-project. A Lot of the features are being tested and under process, but for the sake of this mini-project we shall discuss the bare essentials and how the prototype of our project works currently. Prerequisites needed to run this project are:-

- Eclipse IDE (Recommended) along with JDK
- MySQL database, MySQL Workbench (recommended), J-Connector
- Apache Tomcat server

The prototype model has been built on Linux Mint 20.1 Ulyssa Environment. The contents of this project can be found on the GitHub repository:-

https://github.com/anuragksv/web-tech-lab/tree/main/bank-application

Setting Up of the Environment

1. Upon Installation of Eclipse IDE, start a new Dynamic Web Project, initialize it with the web.xml file, under which specify the welcome-file as Index.jsp
2. Copy the folder from the git repository 'bank-application' and paste it directly into the 'webapp' folder path:

   /eclipse/eclipse-workspace/<project-name>/src/main/webapp/bank-application

3. Now, add the J-Connector (.jar) file, which connects the MySQL database to the application, to the Tomcat installation directory:

   /apache-tomcat-9.0.45/lib/mysql-connector-java-8.0.25.jar

4. Under Buildpath of the project file in Eclipse add both the mysql-connector as well as java-servlet-api (present in the tomcat installation directory).
5. The application has three database tables that it works with, which need to be pre-created in the database as the current script only performs data manipulation with these. The needed table create statements can be found in the file: main.sql.

Running the Project File

1. Right-click on the Index.jsp file → Run As → 1 Run on Server. As shown in the figure below. (Figure 1)
2. For the first time, Eclipse asks the user to set up the server, using the tomcat installation, set up the Tomcat server. (Figure 2)
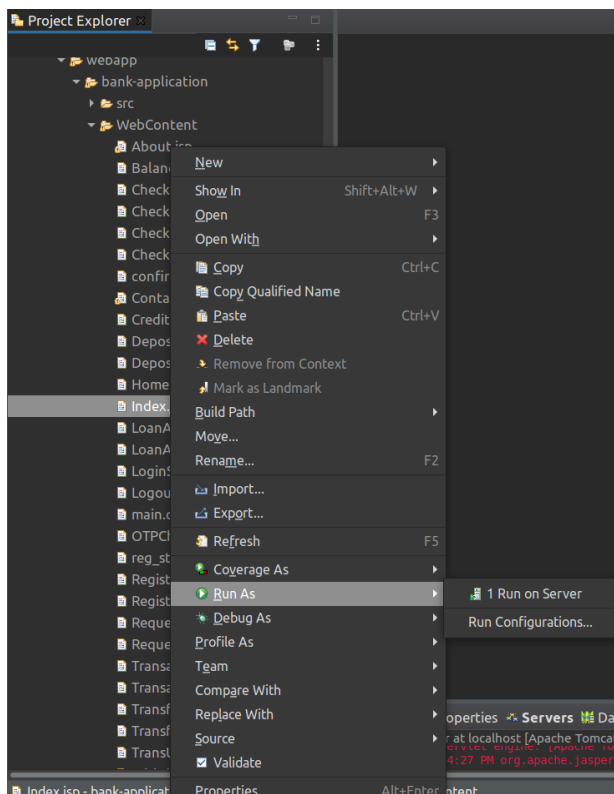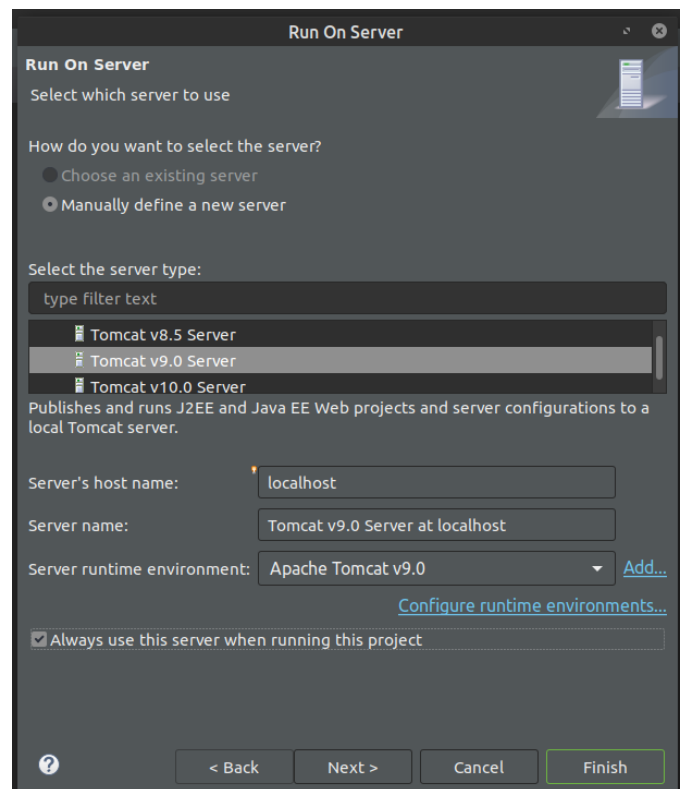

Figure 1

Figure 2

3. Upon Finishing the initial server setup, a new window will appear on the workspace opening our landing page (Figure 3) of the website on the URL:

   http://localhost:8080/bank-application/bank-application/WebContent/Index.jsp

Figure 3

Navigation and Working

1. The Landing page's navigation bar links us to the About section, Contact Us section as well as User SignUp. The figures below show the About, Contact Us sections.

GITAM Bank
Trust Provide Protect

HOME   ABOUT   CONTACT US   SIGN UP

Details :

Name	Registration ID	Email ID	GitHub
Anurag K S V	121810303007	121810303007@gitam.in	https://github.com/anuragksv
Vishal Varma	121810303006	121810303006@gitam.in	https://github.com/vishalv996
Rachita Barla	121810303030	121810303030@gitam.in	https://github.com/Rachitabarla
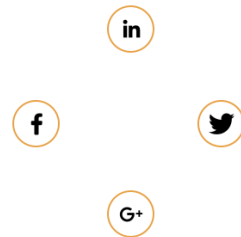
2. Users may Sign Up or Login to the website, where-in upon first running the code we can signup as a new user, the sign-up page looks as follows.

Personal Information

Full Name

Email-ID

Phone Number

Address

Account Information

Username

Password

Confirm

● I accept the **Terms and Conditions** of your site.

Register

Already a member?**Sign in!**

3. Upon Sign Up, users can log in to their accounts from home. The landing page after login looks as follows.

4. Post login, Every functionality present on the landing page is in development and out of the scope of this mini-project, but the logout functionality works and redirects us to the Home page of the website.

Source Code

The following code snippets amount to the majority of the functionality of the website. The rest of the files and folders (such as style sheets) can be found on the GitHub repository. Here is the folder hierarchy of the project files for reference.

Index.jsp

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
pageEncoding="ISO-8859-1"%>
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>GITAM Bank</title>
<link rel="stylesheet" href="main.css">
</head>
```

```jsp
<%
String un=(String)session.getAttribute("username");
if(un==null||un.equals(""))
{
    un="";
}
%>
<body>
        <header>
        <img class="desktop" src="../image.png" alt="Image Load Error" title="Logo">
        <ul>
        <li><a href="Index.jsp">Home</a></li>
        <li><a href="About.jsp">About</a></li>
        <li><a href="ContactUs.jsp">Contact Us</a></li>
        <li><a href="Registration.jsp">Sign Up</a></li>
        </ul>
        </header>
        <div class="statement">
        <img class="phone" src="../short_logo.png" alt="Image Load Error" title="Logo">
        <p>We Strive For Excellence</p>
        </div>
        <div class="login">
        <form class="login-form" name="login" action="LoginServlet.jsp"
autocomplete="off">
        <span>
                <p>Username</p>
                <input type="text" name="uname" id="uname" value=<%=un %>>
        </span>
        <span>
                <p>Password</p>
                <input type="password" name="password" id="pass">
        </span>
        <button>Login</button>
        </form>
        </div>
        <footer>
        <div>
        <p>We Trust.</p>
        <p>We Trust in our team to present you with better experience.</p>
        </div>
        <div>
        <p>We Provide.</p>
        <p>We provide for you the best contemporarily available services.</p>
        </div>
        <div>
        <p>We Protect.</p>
        <p>We protect our customers with reliable security to prosper.</p>
        </div>
```
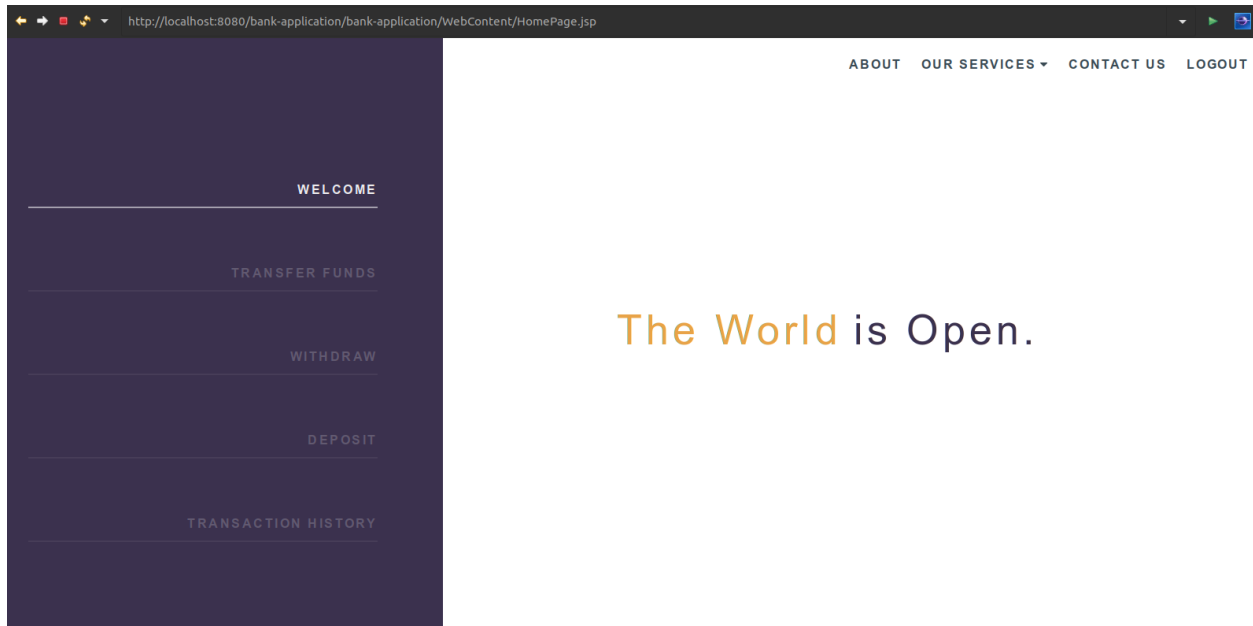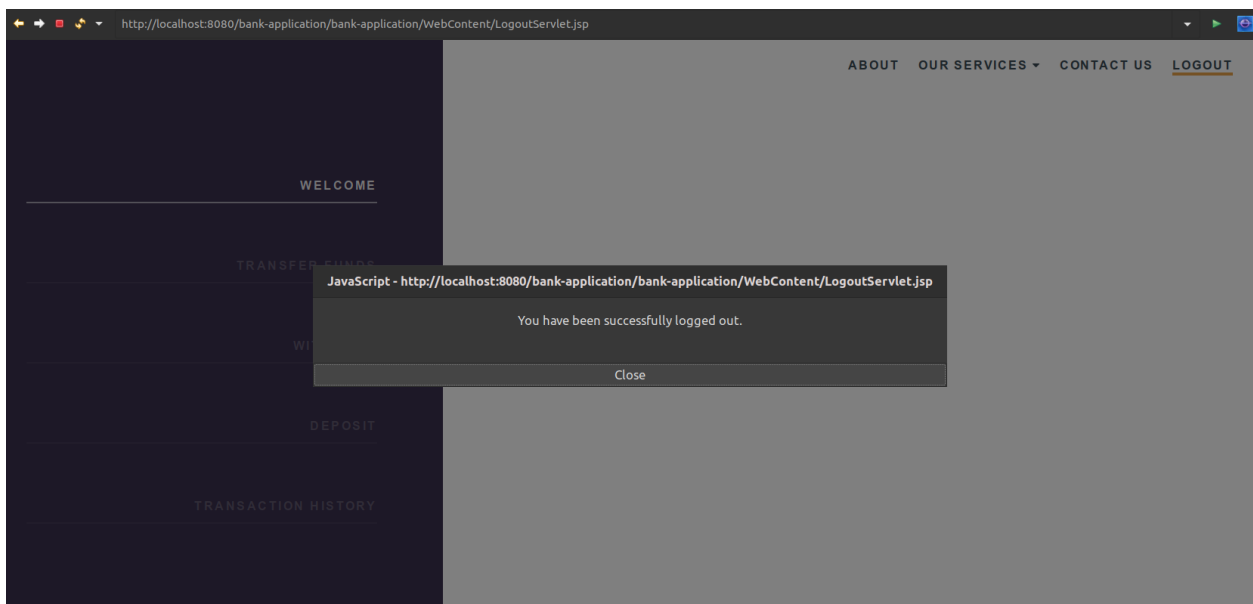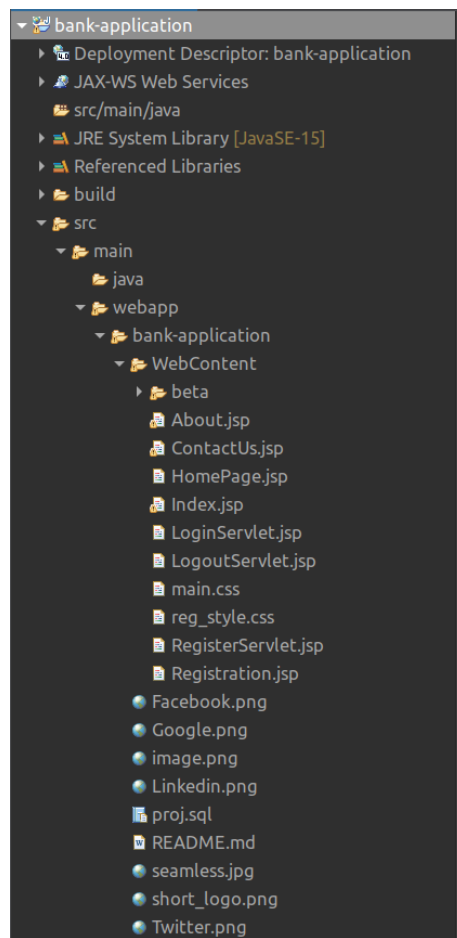
```
            </footer>
    </body>
    </html>
```

LoginServlet.jsp

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
pageEncoding="ISO-8859-1"%>
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
"http://www.w3.org/TR/html4/loose.dtd">
<html>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
<%@page import="java.sql.*" %>
<%
String un=request.getParameter("uname");
String pwd=request.getParameter("password");
Connection con=null;
PreparedStatement ps=null;
try{
    Class.forName("com.mysql.cj.jdbc.Driver");
    con = DriverManager.getConnection("jdbc:mysql://localhost:3306/TEST","root","7740");

ps=con.prepareStatement("select * from BANK_OP where username=? and password=?");
ps.setString(1,un);
ps.setString(2,pwd);
ResultSet rs=ps.executeQuery();

if(rs.next()){
    session.setAttribute("username",un);
    session.setAttribute("password",pwd);
    session.setAttribute("accid",rs.getString("accnum"));
    response.sendRedirect("HomePage.jsp");
}
else{
    out.println("<script language='javascript'>alert('Wrong Username/Password');</script>");
    RequestDispatcher rd=request.getRequestDispatcher("Index.jsp");
    rd.include(request, response);
}
con.close();
}
catch(Exception e){
    out.println(e);
}
```

```
%>
</body>
</html>
```

Registration.jsp

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
pageEncoding="ISO-8859-1"%>
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>Registration</title>
<link rel="stylesheet" href="reg_style.css">
<script language="Javascript">
function ex(){
if(document.getElementById("rep").value!=document.getElementById("pw").value){
window.alert("Password doesn't match!");
document.getElementById("rep").value="";
document.getElementById("rep").focus();
}
}

function ex1(){
    var z=" ";
var s=document.getElementById("un").value;
   if(s.length<5)
        {window.alert("Username must be be longer that 5 characters!");
        document.getElementById("un").value="";
        document.getElementById("un").focus();
        }
   var x=new XMLHttpRequest();
   x.open("POST","CheckUsername.jsp?username="+s,"True");
   x.onload= function(){
        if(x.readyState==4 && x.status==200)
                z=x.responseText.split("");
        if(z[2]=='t'){
                window.alert("Username already taken");
                document.getElementById("un").value="";
                document.getElementById("un").focus();
        }
   }
   x.send();
}

function ex2(){
var s=document.getElementById("ph").value;
```

```
    if(s.length<10||s.length>10)
        {window.alert("Phone Number must contain exactly 10 digits");
        document.getElementById("ph").focus();
        document.getElementById("ph").value="";
        }
}
</script>
</head>
<body>
<div class="bg"></div>
<div class="container">
        <div class="personal">
        <p>Personal Information</p>
        <span>Full Name</span>
        <input type="text" name="fname" form="reg" required/>
        <span>Email-ID</span>
        <input type="email" name="email" form="reg" required/>
        <span>Phone Number</span>
        <input type="text" name="phnumber" form="reg" id="ph" onchange="return ex2()"
required/>
        <span>Address</span>
        <input type="text" name="address" form="reg" required/>
        </div>
        <div class="account">
        <form name="registration" id="reg" action="RegisterServlet.jsp" method="post"
autocomplete="off">
        <p>Account Information</p>
        <span>Username</span>
        <input type="text" name="uname" id="un" onchange="return ex1()" required/>
        <span>Password</span>
        <input type="password" name="password" id="pw"  required/>
        <span>Confirm</span>
        <input type="password" name="rep" id="rep" onchange="return ex()" required/>
        <input type="radio" name="accept" required/>
        <p>I accept the <a href="#" style="font-weight:bold;color:white;">Terms and
Conditions</a> of your site.</p>
        <button>Register</button>
        <p id="login_link">Already a member?<a href="Index.jsp">Sign in!</a></p>
        </form>
        </div>
</div>
</body>
</html>
```

RegistrationServlet.jsp

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
pageEncoding="ISO-8859-1"%>
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
"http://www.w3.org/TR/html4/loose.dtd">
<html>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
<%@page import="java.sql.*,java.util.Random" %>
<%
String fullname=request.getParameter("fname");
String email=request.getParameter("email");
String username=request.getParameter("uname");
String password=request.getParameter("password");
String phnum=request.getParameter("phnumber");
String address=request.getParameter("address");
String accnum="";

Random r=new Random();
long x=r.nextLong();
String z=String.valueOf(x);
if(z.length()>10){
    if(z.charAt(0)!='-')
        accnum=z.substring(0,12);
else
        accnum=z.substring(1,13);
}
else{
    x=r.nextLong();
    z=String.valueOf(x);
        if(z.charAt(0)!='-')
        accnum=z.substring(0,12);
        else
        accnum=z.substring(1,13);
}
Connection con=null;
PreparedStatement ps=null;
try{
    Class.forName("com.mysql.cj.jdbc.Driver");
    con = DriverManager.getConnection("jdbc:mysql://localhost:3306/TEST","root","7740");
    ps=con.prepareStatement("insert into BANK_OP values(?,?,?,?,?,?,?)");
    ps.setString(1,fullname);
    ps.setString(2,email);
```

```
    ps.setString(3,username);
    ps.setString(4,password);
    ps.setString(5,phnum);
    ps.setString(6,address);
    ps.setString(7,accnum);
    int i=ps.executeUpdate();
    if(i>0){
            session.setAttribute("username",username);
            response.sendRedirect("Index.jsp");
    }
    ps=con.prepareStatement("insert into BAL_TABLE values(?,?,'0')");
    ps.setString(1,username);
    ps.setString(2,accnum);
    ps.executeUpdate();
    con.close();
}
catch(Exception e){
    out.println(e);
}
%>
</body>
</html>
```

LogoutServlet.jsp

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
pageEncoding="ISO-8859-1"%>
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
"http://www.w3.org/TR/html4/loose.dtd">
<html>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
<%
session.setAttribute("username","");
session.invalidate();
out.println("<script>alert('You have been successfully logged out.')</script>");
RequestDispatcher rd=request.getRequestDispatcher("Index.jsp");
rd.include(request,response);
%>
</body>
</html>
```