

Table of Contents

Introduction.....	2
Development Environment and Programming Tools	2
Development Environment	2
Programming Language.....	2
Markup languages.....	2
Framework and Library	2
System Requirement.....	3
Features	3
Screenshots	4
Steps to create dynamic web project in eclipse.....	4
UI (User Interface).....	7
Source code.....	10
Future Scope	14

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Introduction

The main objective of this mini-project is to design a dynamic and responsive website for a mini super market management. This web application is full-fledged logic using new technologies in the market with maximum functionalities, efficiency, and optimal speed on a web.

Development Environment and Programming Tools

Development Environment

The development environment we used to develop the mini system are: -

- **Eclipse IDE 2021-03:** - we prefer this IDE since It is the fastest Java IDE and This IDE will help us to create a good web application.
- **Apache Tomcat:** - we prefer this server because it is open-source, and it's free to use. Easy to install and configure. Multiple applications can run at the same time without any issues.

Programming Language

- **Java Programming language**
We will use Java Servlet to implement our web Application.
- **MySQL query language**
MYSQL is one of the most popular query languages in the world. It has a greater advantage in speed, robustness, and flexible licensing policy over other backend database tools. Due to the above reason, we select MySQL to implement the database.

Markup languages

- **HTML and CSS**
we will use HTML (Hypertext markup language) to build the structure of our website and CSS to style our website.

Framework and Library

- Bootstrap
- mysql-connector-java-8.0.25

System Requirement

On client-side

- Operating System (Any)
- Web Browser (IE, Mozilla Firefox, Google Chrome, Safari, Opera ...)

On server-side

- Web Server (Apache Tomcat)
- Java Servlet
- MySQL

Features

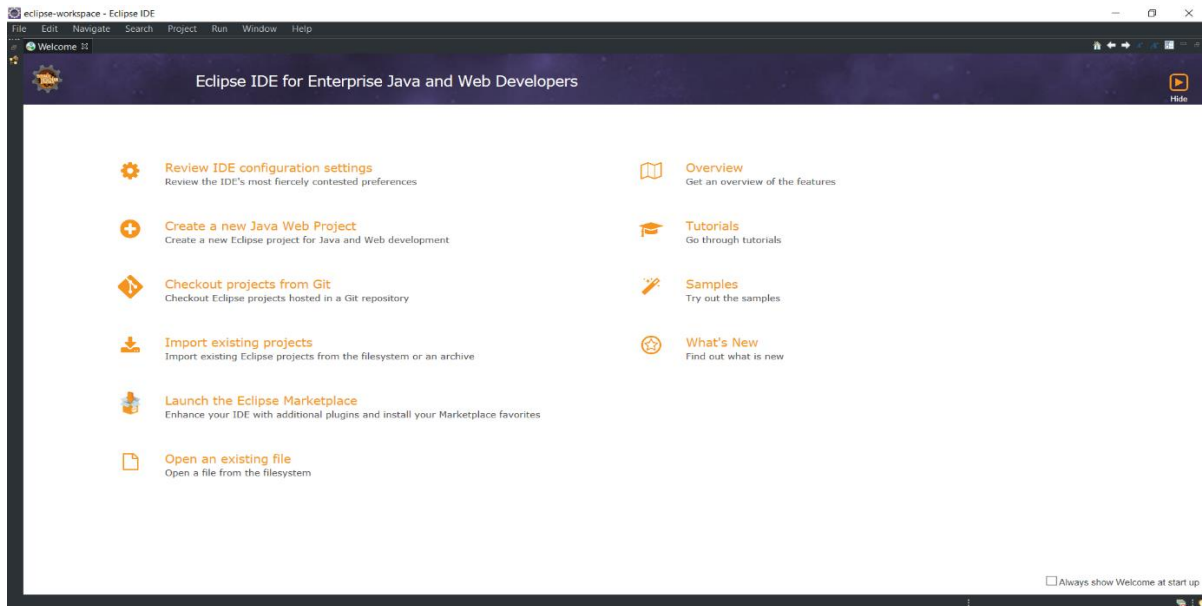
- Login
- Create an Account
- Add item.
- Display List of items.

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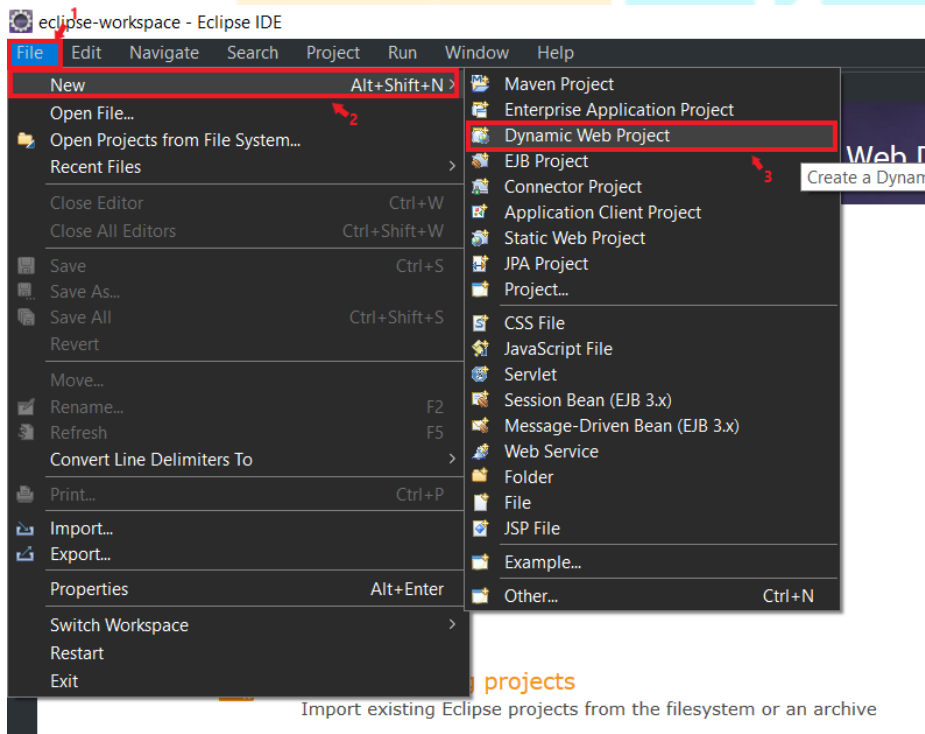
Screenshots

Steps to create dynamic web project in eclipse

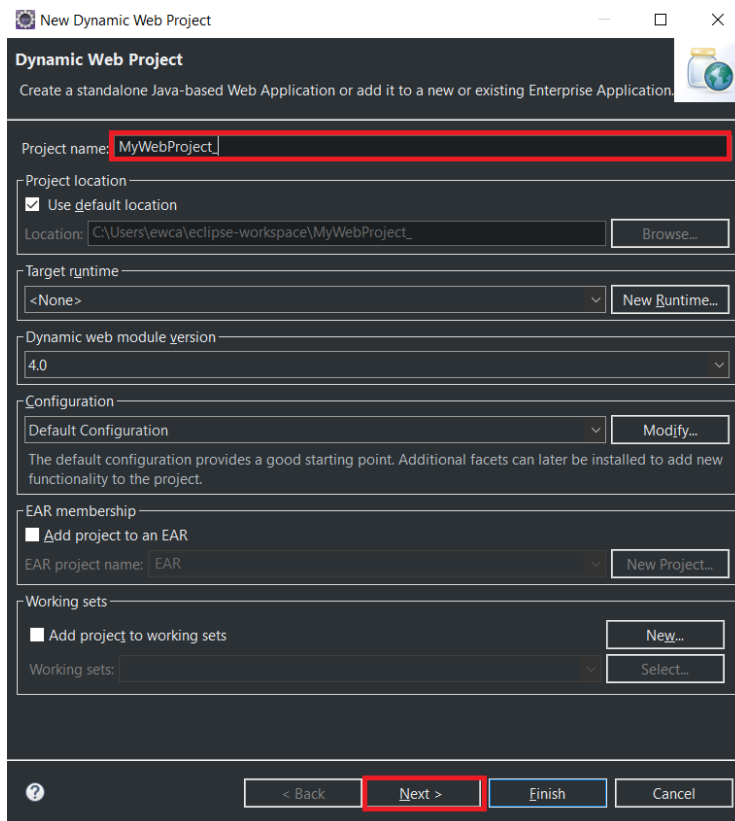
Step:1 Launch Eclipse IDE for Enterprise Java and Web Developers.



Step: 2 Open Dynamic Web Project, Click File > New > Dynamic Web Project as shown in the figure.

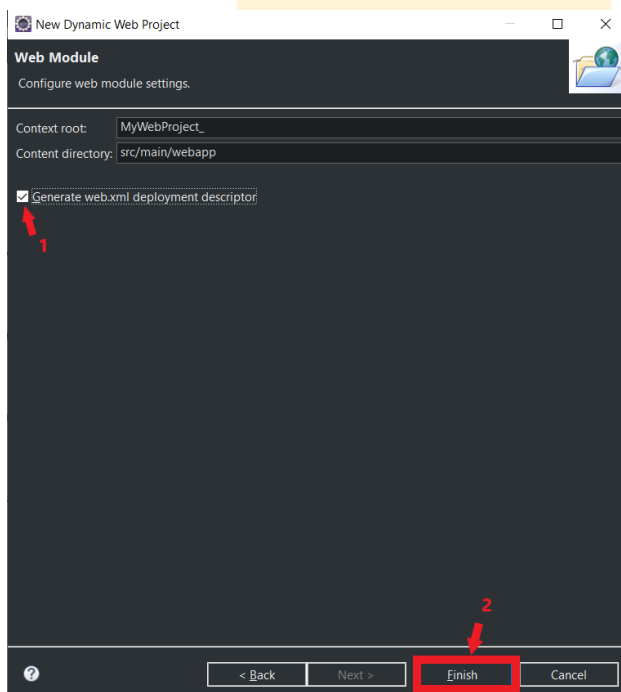


Step: 3 Name the project e.g. MyWebProject.

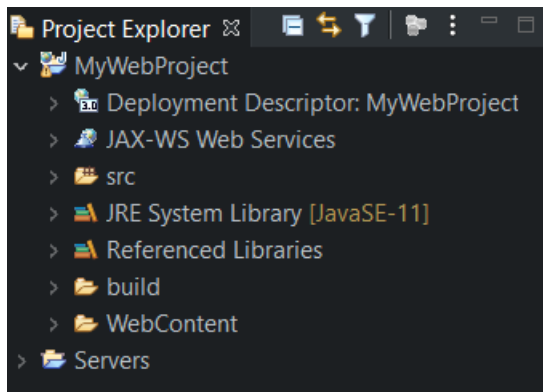


Then click “Next”.

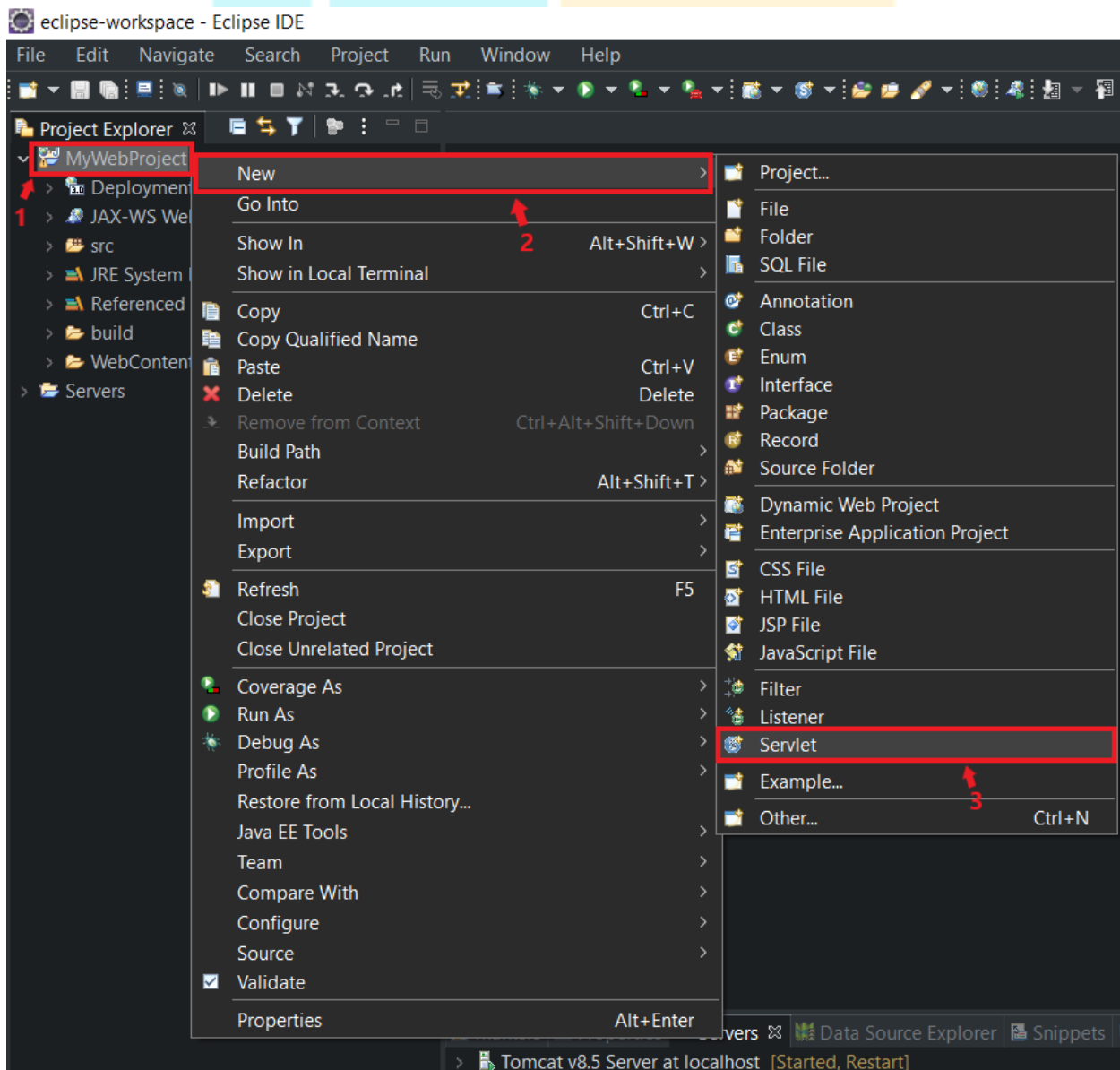
After that select “Generate web.xml deployment descriptor” and click “Finish”.



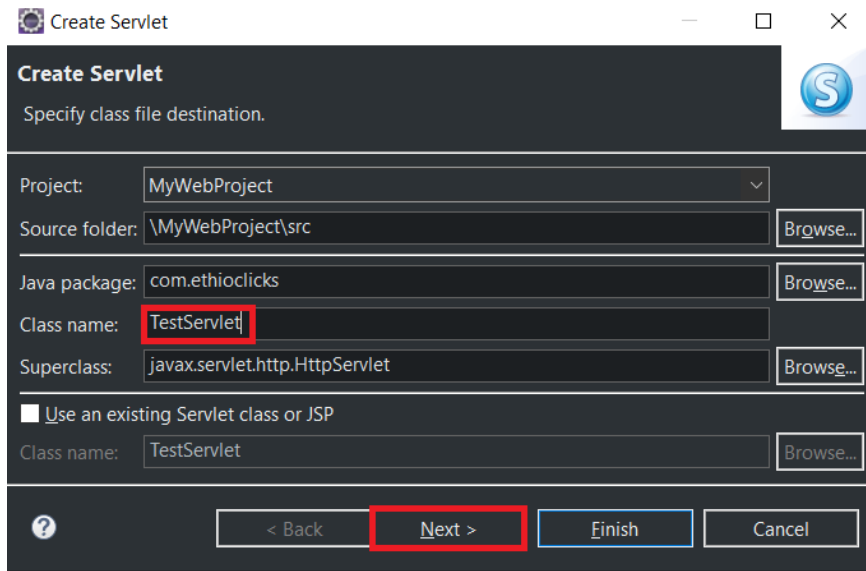
After that you will see something like this in the project explorer tab.



Right-click on your project e.g. MyWebProject and create a new Servlet as shown in the figure.



Give the name as “TestServlet” and select “Next”. Select “Finish” on the next screen



For more tutorial [Click Here](#).

UI (User Interface)

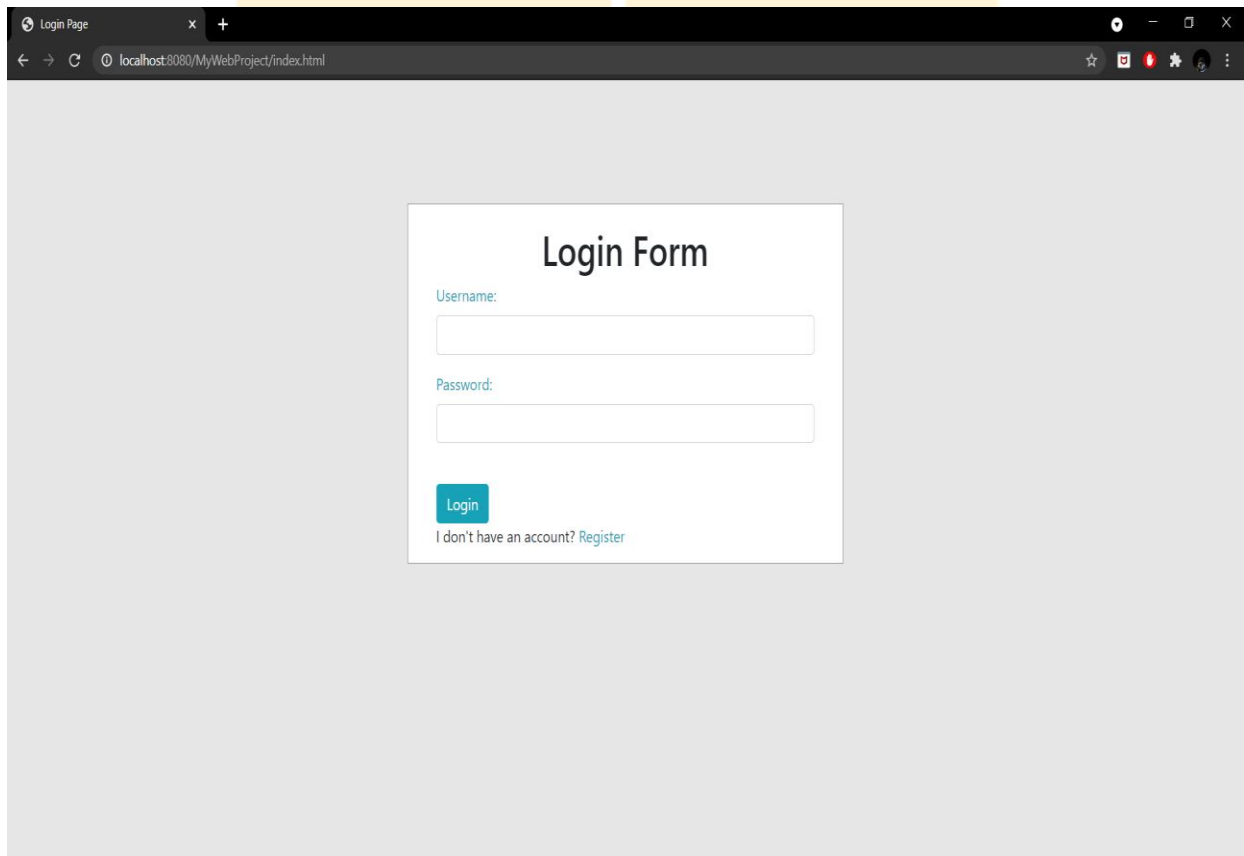
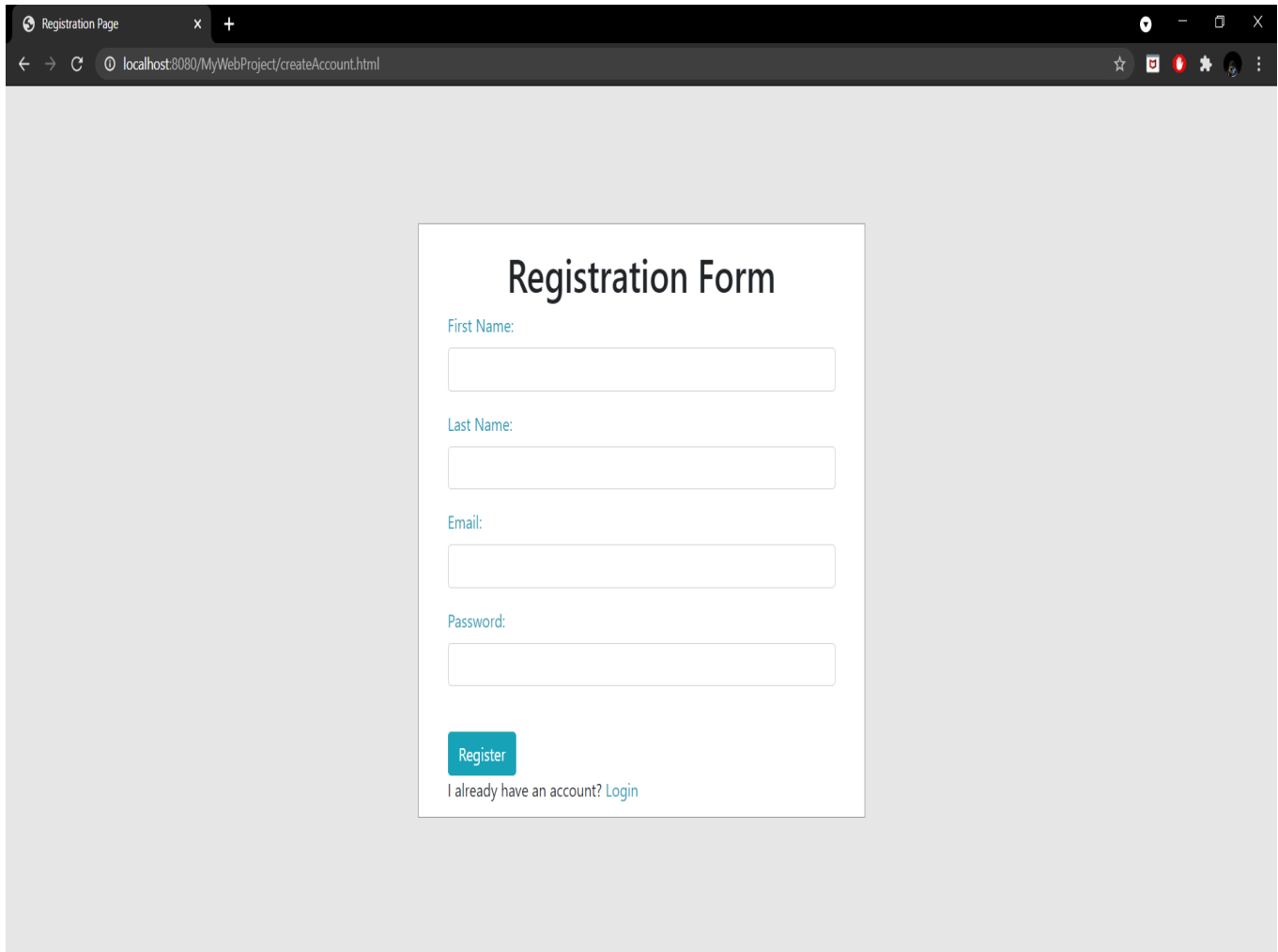


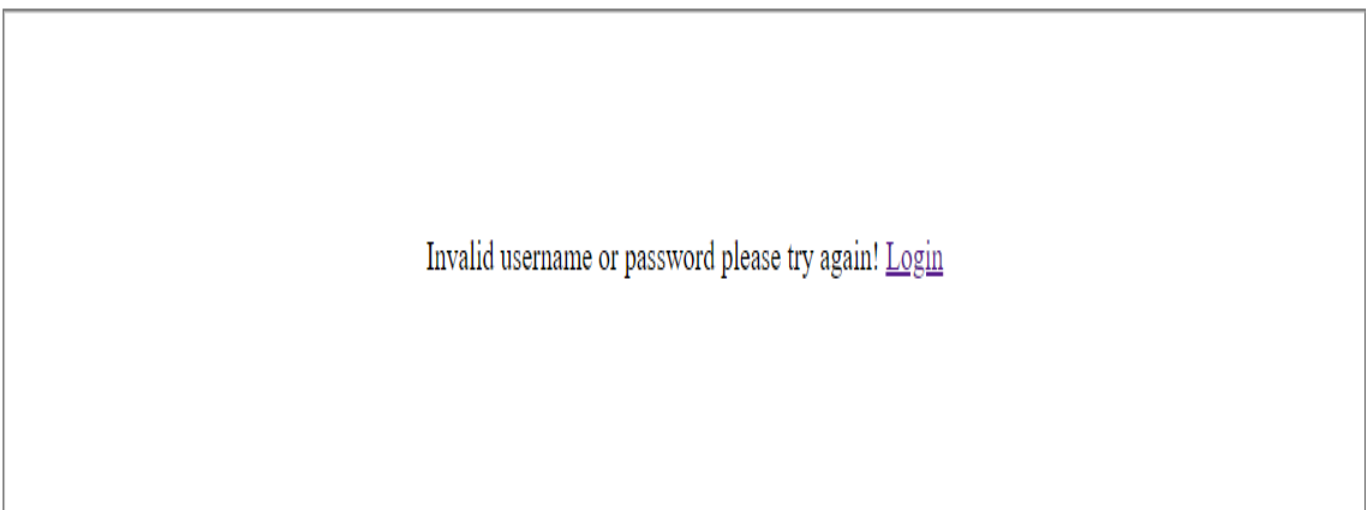
Figure 1: Login Page



The screenshot shows a web browser window with the title "Registration Page" and the address bar displaying "localhost:8080/MyWebProject/createAccount.html". The main content area features a "Registration Form" with the following fields and elements:

- First Name:** A text input field.
- Last Name:** A text input field.
- Email:** A text input field.
- Password:** A text input field.
- Register:** A blue button.
- Link:** A link labeled "I already have an account? Login".

Figure 2: Registration Page



The screenshot shows a white rectangular area with the following text:

Invalid username or password please try again! [Login](#)

Figure 3: Error Page

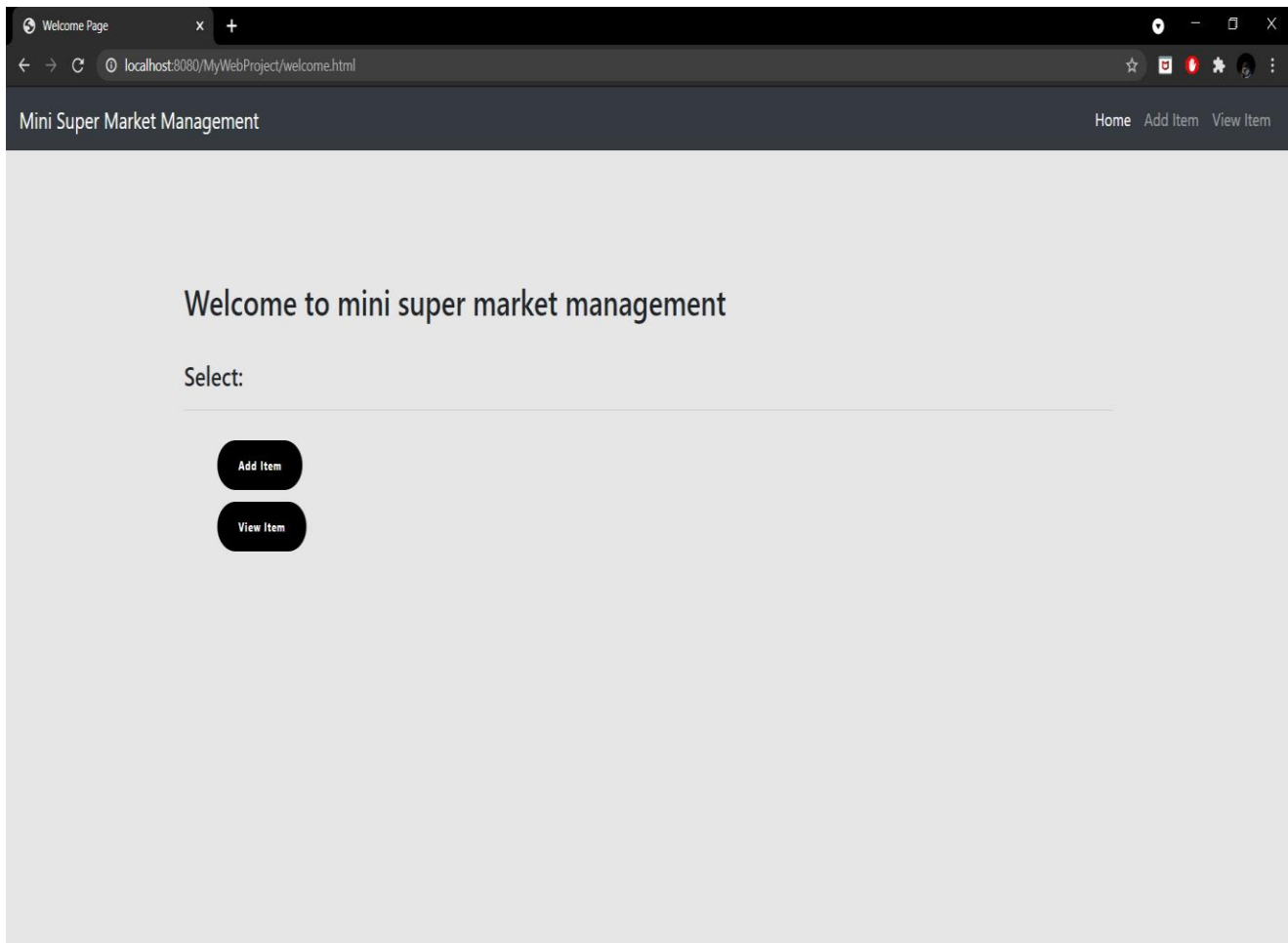


Figure 4: Welcome Page

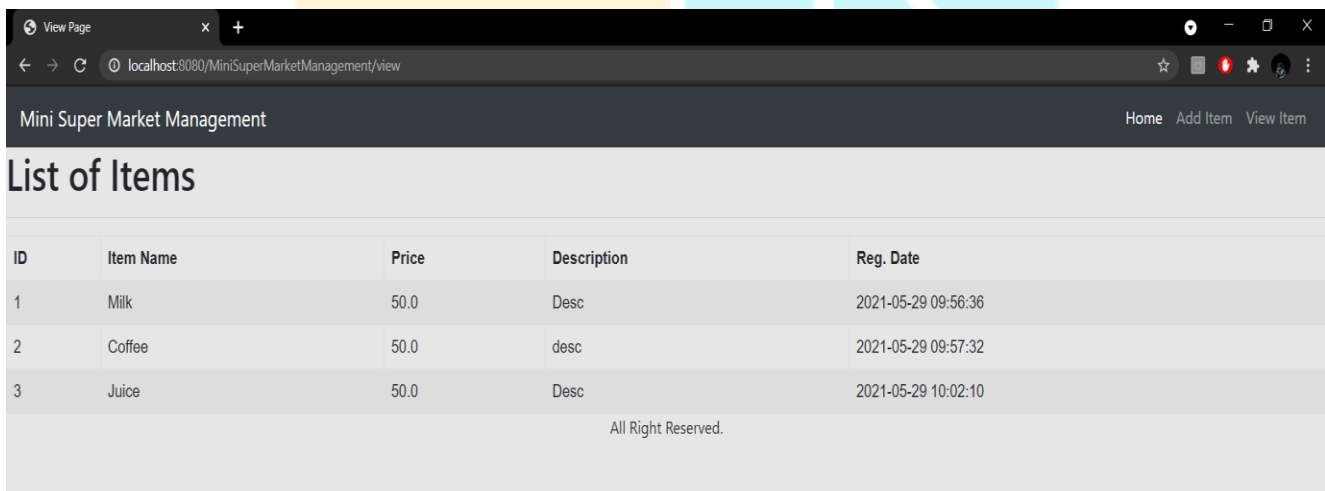


Figure 5: Display list of registered users.

Source code

User Validation (validate.java)

```
protected void doPost(HttpServletRequest request, HttpServletResponse response)
throws ServletException, IOException {
    // TODO Auto-generated method stub
    PrintWriter out = response.getWriter();
    String un = request.getParameter("email");
    String pw = request.getParameter("pass");
    try {
        Class.forName("com.mysql.jdbc.Driver");
        Connection con = DriverManager.getConnection("jdbc:mysql://localhost/ethioclick",
            "root", "");
        PreparedStatement ps = con.prepareStatement("select * from userinfo where email=? and
            password=?");
        ps.setString(1, un);
        ps.setString(2, pw);
        ResultSet rs = ps.executeQuery();
        if (rs.next()) {
            response.sendRedirect("welcome.html");
        }
        else {
            response.sendRedirect("error.html");
        }
    } catch (SQLException e) {
        out.print(e.getMessage());
    } catch (ClassNotFoundException ex) {
        Logger.getLogger(validate.class.getName()).log(Level.SEVERE, null, ex);
    }
}
```

User Registration (register.java)

```
import java.io.IOException;
import java.io.PrintWriter;
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.PreparedStatement;
import java.sql.Timestamp;
import java.util.Date;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;

/**
 * @author Sebex
 */
@WebServlet("/register")
public class Register extends HttpServlet {
    private static final long serialVersionUID = 1L;
```

```

String url = "jdbc:mysql://localhost/ethioclicks";
String username = "root";
String password = "";
Connection conn = null;
PreparedStatement ps = null;

protected void doPost(HttpServletRequest request, HttpServletResponse response)
throws ServletException, IOException {
    // TODO Auto-generated method stub
    PrintWriter out = response.getWriter();
    userinfo user = new userinfo();
    Date date = new Date();
    Timestamp timeStamp = new Timestamp(date.getTime());
    String fname = request.getParameter("fname");
    user.setFirstName(fname);
    String lname = request.getParameter("lname");
    user.setLastName(lname);
    String email = request.getParameter("email");
    user.setEmail(email);
    String pw = request.getParameter("password");
    user.setPassword(phone);

    try {
        Class.forName("com.mysql.cj.jdbc.Driver");
        conn = DriverManager.getConnection(url, username, password);
        ps = conn.prepareStatement("insert into userinfo (FirstName
,LastName ,Email ,Password ,RegDate)" + "values(?,?,?,?,?)");
        ps.setString(1, user.getFirstName());
        ps.setString(2, user.getLastName());
        ps.setString(3, user.getEmail());
        ps.setString(4, user.getPassword());
        ps.setTimestamp(5, timeStamp);
        ps.executeUpdate();
        response.sendRedirect("createAccount.html");
    } catch (Exception e) {
        out.print(e.getMessage());
    }
}
}

```

Add Item into database (Add.java)

```

protected void doPost(HttpServletRequest request, HttpServletResponse response)
throws ServletException, IOException {
    // TODO Auto-generated method stub

    Connection conn = null;
    PreparedStatement ps = null;
    PrintWriter out = response.getWriter();
    iteminfo item = new iteminfo();
    Date date = new Date();

```

```

Timestamp timeStamp = new Timestamp(date.getTime());
String iname = request.getParameter("ItemName");
item.setItemname(iname);
int quantity= Integer.parseInt(request.getParameter("quantity"));
item.setQuantity(quantity);
String price = request.getParameter("price");
item.setPrice(price);
String desc = request.getParameter("description");
item.setDescription(desc);

try {
    Class.forName("com.mysql.cj.jdbc.Driver");
    conn =
DriverManager.getConnection("jdbc:mysql://localhost/ethioclick?user=root&password=484848");
    ps = conn.prepareStatement("insert into iteminfo (ItemName ,Quantity ,Price ,Description ,RegDate)"
+ "values(?,?,?,?,?)");
    ps.setString(1, item.getItemname());
    ps.setInt(2, item.getQuantity());
    ps.setString(3, item.getPrice());
    ps.setString(4, item.getDescription());
    ps.setTimestamp(5, timeStamp);

    ps.executeUpdate();
    response.sendRedirect("/MiniSuperMarketManagement/view");
} catch (Exception e) {
    out.print(e.getMessage());
}
}

```

Display List of item (View.java)

```

protected void doGet(HttpServletRequest request, HttpServletResponse response) throws
ServletException, IOException {
// TODO Auto-generated method stub
try (PrintWriter out = response.getWriter()) {
    /* TODO output your page here. You may use following sample code. */
    out.println("<!DOCTYPE html>");
    out.println("<html>");
    out.println("<head>");
    out.println("<title>View Page</title>");
    out.println("<link
rel=\"stylesheet\" href=\"https://maxcdn.bootstrapcdn.com/bootstrap/4.5.2/css/bootstrap
.min.css\">\r\n"
+ "<script
src=\"https://ajax.googleapis.com/ajax/libs/jquery/3.5.1/jquery.min.js\"></script>\r\n"
+ "<script
src=\"https://cdnjs.cloudflare.com/ajax/libs/popper.js/1.16.0/umd/popper.min.js\"></s
cript>\r\n"

```

```

+ "<script
src=\"https://maxcdn.bootstrapcdn.com/bootstrap/4.5.2/js/bootstrap.min.js\"></script>
\"";
    out.println("<style>\r\n"
        + "table {\r\n"
        + "    font-family: arial, sans-serif;\r\n"
        + "    border-collapse: collapse;\r\n"
        + "    width: 100%;\r\n"
        + "}\r\n"
        + "\r\n"
        + "td, th {\r\n"
        + "    border: 1px solid #dddddd;\r\n"
        + "    text-align: left;\r\n"
        + "    padding: 8px;\r\n"
        + "}\r\n"
        + "\r\n"
        + "tr:nth-child(even) {\r\n"
        + "    background-color: #dddddd;\r\n"
        + "}\r\n"
        + "</style>");
    out.println("</head>");
    out.println("<body>");
out.println("<nav class=\"navbar navbar-expand-md bg-dark navbar-dark\">\r\n"
    + "    <a class=\"navbar-brand\" href=\"#\">Mini Super Market Management</a>\r\n"
    + "    <button class=\"navbar-toggler\" type=\"button\" data-toggle=\"collapse\"
data-target=\"#collapsibleNavbar\">\r\n"
    + "        <span class=\"navbar-toggler-icon\"></span>\r\n"
    + "    </button>\r\n"
    + "    <div class=\"collapse navbar-collapse\" id=\"collapsibleNavbar\">\r\n"
    + "        <ul class=\"navbar-nav ml-auto\">\r\n"
    + "            <li class=\"nav-item active\">\r\n"
    + "                <a class=\"nav-link\" href=\"index.html\">Home</a>\r\n"
    + "            </li>\r\n"
    + "            <li class=\"nav-item\">\r\n"
    + "                <a class=\"nav-link\" href=\"Add.html\">Add Item</a>\r\n"
    + "            </li>\r\n"
    + "            <li class=\"nav-item\">\r\n"
    + "                <a class=\"nav-link current\"
href=\"/MiniSuperMarketManagement/view\">View Item</a>\r\n"
    + "            </li> \r\n"
    + "        </ul>\r\n"
    + "    </div> \r\n"
    + "</nav>");
    out.println("<h1>List of Items</h1>");
    out.println("<table>");
    out.println("<tr>");
    out.println("<th>ID</th>");
    out.println("<th>Item Name</th>");
    out.println("<th>Quantity </th>");
    out.println("<th>Price </th>");
    out.println("<th>Description</th>");
    out.println("<th>Reg. Date</th>");
    out.println("</tr>");
    try {
        Class.forName("com.mysql.cj.jdbc.Driver");

```

```

        Connection conn =
        DriverManager.getConnection("jdbc:mysql://localhost/ethioclick", "root", "");
        String Query = "select * from iteminfo";
        Statement stm = conn.createStatement();
        ResultSet rs = stm.executeQuery(Query);

while (rs.next()) {
    out.println("</tr>");
    out.println(" <td>\t\t" + rs.getString("Id") + "</td>");
    out.println(" <td>\t\t" + rs.getString("ItemName") + "</td>");
    out.println(" <td>\t\t" + rs.getString("Quantity") + "</td>");
    out.println(" <td>\t\t" + rs.getString("Price") + "</td>");
    out.println("<td>\t\t" + rs.getString("Description") + "</td>");
    out.println("<td>\t\t" + rs.getString("RegDate") + "</td>");
    out.println("</tr>");
        }

        } catch (Exception e) {
            out.print(e.getMessage());
        }
    }
    out.println("</table>");
    out.println("</body>");
    out.println("</html>");
}

```

Future Scope

- Search item.
- Action (Edit & Delete)
- User validation using email and password recovery.
- Improving Security.

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