



CUSTOMER SYNC

Application

ABSTRACT

This Customer Management System performs CRUD operations using JSP/Servlet for the backend and MySQL for the database.

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Full Stack Web Developer

Customer Management System Documentation

Contents

1. Introduction

- **Description:** This project is a CRUD (Create, Read, Update, Delete) application for managing customer data. The system utilizes a MySQL database, with the backend developed using JSP/Servlet and the frontend built with HTML, CSS. The application includes secure JWT-based authentication and integrates with a remote API for synchronizing customer data.

2. Technologies Used

- **Database: MySQL:**
An overview of the MySQL database used to store customer data, including the schema design and key tables.
- **Backend: JSP/Servlet:**
Describes the backend technologies used, focusing on the choice between JSP/Servlet. This section covers the rationale for the chosen technology and its role in the application.
- **Frontend: HTML, CSS:**
A brief introduction to the frontend stack, explaining the use of HTML for structure, CSS for styling.
- **Authentication: JWT (JSON Web Tokens):**
An explanation of JWT authentication, its importance in securing the application, and how it is implemented.

3. Data-Base Development

Create the Users Table: Ensure your `users` table in MySQL has columns for an auto-incremented ID, login ID, and password. You can also add additional fields as needed.

```
sql
CREATE TABLE users (
    id INT PRIMARY KEY AUTO_INCREMENT,
    login_id VARCHAR(255) NOT NULL UNIQUE,
    password VARCHAR(255) NOT NULL
);
```

Create the CustomerDetails Table:

here is the SQL command to create the `customerdetails` table with the specified columns:

```
CREATE TABLE customerdetails (  
    id INT AUTO_INCREMENT PRIMARY KEY,  
    firstname VARCHAR(255) NOT NULL,  
    lastname VARCHAR(255) NOT NULL,  
    street VARCHAR(255),  
    address VARCHAR(255),  
    city VARCHAR(255),  
    state VARCHAR(255),  
    email VARCHAR(255) NOT NULL,  
    phone VARCHAR(20),  
    uuid VARCHAR(250)  
);
```

4. Backend Development

- **Setting Up the Backend Environment:**
Instructions for setting up the backend development environment, including tools, dependencies, and configuration settings.

Follow some steps:

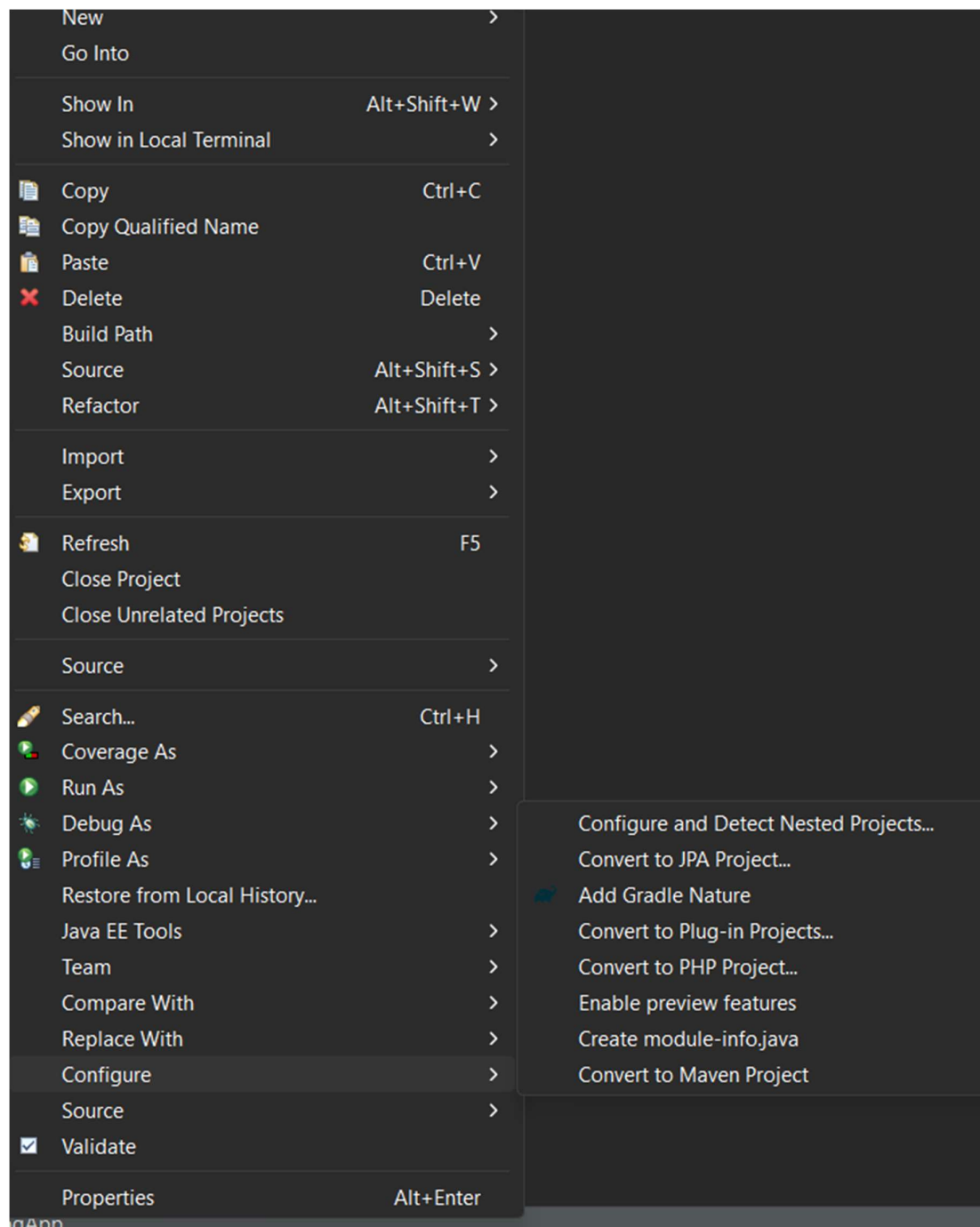
Creating java project

Follow some steps:

Create Java Dynamic Web Project

Click on project

It shows



Click on configure and convert to maven project

In pom.xml it shows and add dependencies

Add Dependencies

For Json

```
<dependency>  
    <groupId>org.json</groupId>  
    <artifactId>json</artifactId>  
    <version>20231013</version>  
</dependency>
```

For httpclient

```
<dependency>  
    <groupId>org.apache.httpcomponents</groupId>  
    <artifactId>httpclient</artifactId>  
    <version>4.5.13</version>  
</dependency>
```

For Jaxb-api

```
<dependency>  
    <groupId>javax.xml.bind</groupId>  
    <artifactId>jaxb-api</artifactId>  
    <version>2.3.1</version>  
</dependency>
```

For JWT

```
<dependency>

    <groupId>io.jsonwebtoken</groupId>

    <artifactId>jjwt</artifactId>

    <version>0.9.1</version>

</dependency>
```

For mysql

```
<dependency>

    <groupId>mysql</groupId>

    <artifactId>mysql-connector-java</artifactId>

    <version>8.0.30</version>

</dependency>
```

At final your code looks like

```
<project
xmlns="http://maven.apache.org/POM/4.0.0"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://maven.apache.org/POM/4.0.0
https://maven.apache.org/xsd/maven-4.0.0.xsd">
    <modelVersion>4.0.0</modelVersion>
    <groupId>CustomerSync</groupId>
    <artifactId>CustomerSync</artifactId>
    <version>0.0.1-SNAPSHOT</version>
```

```
<packaging>war</packaging>
<build>
  <plugins>
    <plugin>
      <artifactId>maven-compiler-
plugin</artifactId>
      <version>3.8.1</version>
      <configuration>
        <release>17</release>
      </configuration>
    </plugin>
    <plugin>
      <artifactId>maven-war-
plugin</artifactId>
      <version>3.2.3</version>
    </plugin>
  </plugins>
</build>

<dependencies>
  <!--
https://mvnrepository.com/artifact/io.jsonwebtoken/jjwt -->
  <dependency>
    <groupId>io.jsonwebtoken</groupId>
    <artifactId>jjwt</artifactId>
    <version>0.9.1</version>
  </dependency>

  <dependency>
    <groupId>mysql</groupId>
    <artifactId>mysql-connector-
java</artifactId>
```

```
        <version>8.0.30</version>
    </dependency>

    <!--
https://mvnrepository.com/artifact/javax.xml.bind/jaxb-api -->
    <dependency>
        <groupId>javax.xml.bind</groupId>
        <artifactId>jaxb-api</artifactId>
        <version>2.3.1</version>
    </dependency>

    <!--
https://mvnrepository.com/artifact/org.apache.httpcomponents/httpclient -->
    <dependency>

<groupId>org.apache.httpcomponents</group
Id>

<artifactId>httpclient</artifactId>
        <version>4.5.13</version>
    </dependency>

    <!--
https://mvnrepository.com/artifact/org.json/json -->
    <dependency>
        <groupId>org.json</groupId>
        <artifactId>json</artifactId>
        <version>20231013</version>
    </dependency>
```



```
</dependencies>

</project>
```

Index.jsp

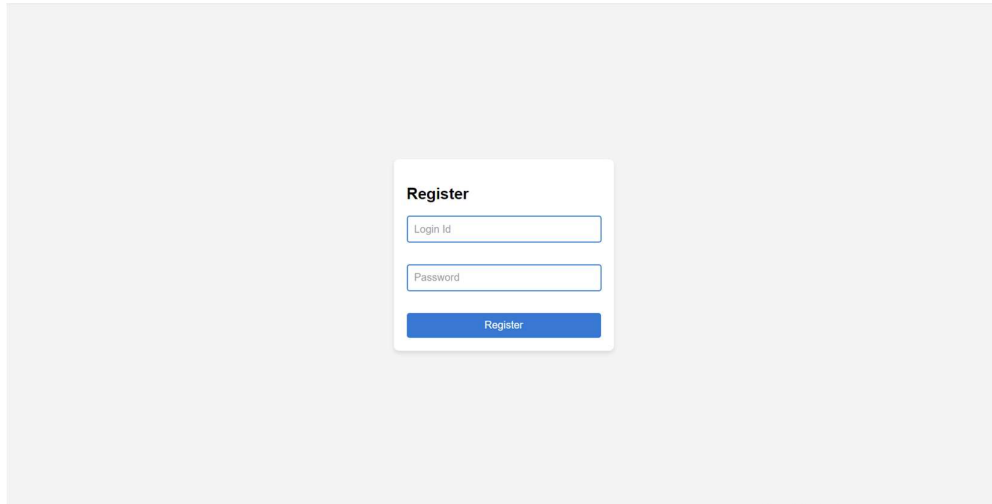
Customer Sync

Register

Login



Register.jsp



A registration form titled "Register" centered on a light gray background. The form contains two input fields: "Login Id" and "Password", followed by a blue "Register" button.

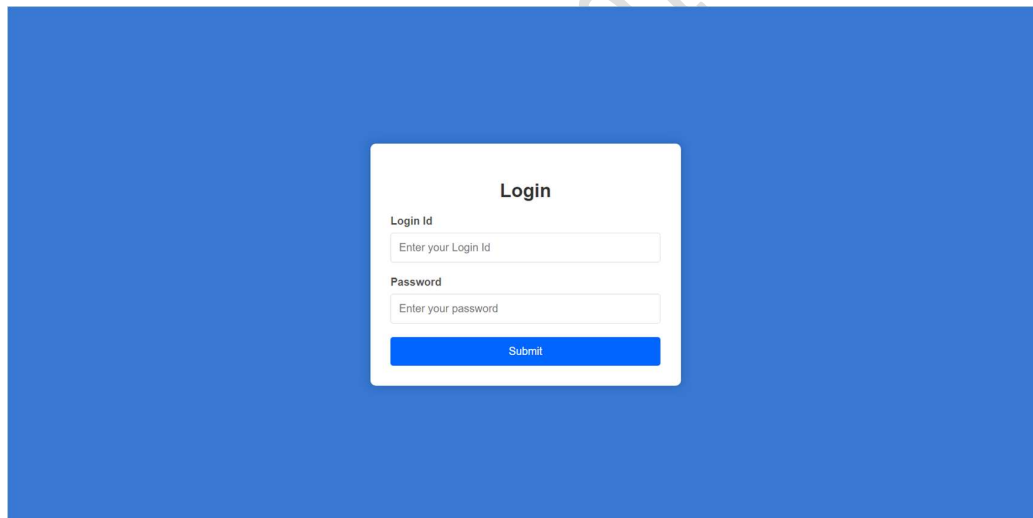
Register

Login Id

Password

Register

Login.jsp



A login form titled "Login" centered on a solid blue background. The form contains two input fields: "Login Id" and "Password", followed by a blue "Submit" button.

Login

Login Id





















Enter your Login Id

Password

Enter your password

Submit

customerlist.jsp

| Customer List | | | | | | | | |
|--|-----------|------------------------------|---------|--|--------|----------------------------------|----------------------|---|
| Home | | Add Customer | | Search By First Name <input type="text"/> | | <input type="button" value="Q"/> | Sync | Logout |
| FIRST NAME | LAST NAME | STREET | ADDRESS | CITY | STATE | EMAIL | PHONE | ACTION |
| John | Doem | 123 Elm St | Apt 4B | Springfield | IL | johndoe@example.com | 555-1234 |   |
| James | Smith | 456 Oak St | Suite 2 | Columbus | OH | jan smith@example.com | 555-5678 |   |
| Michael | Johnson | 789 Pine St | Floor 3 | Austin | TX | mjohnson@example.com | 555-9101 |   |
| Emily | Davis | 321 Maple St | Unit 5 | Seattle | WA | edavis@example.com | 555-1122 |   |
| Chris | Brown | 654 Cedar St | Apt 7C | Denver | COsdfs | cbrown@example.com | 555-3344 |   |
| Sarah | Wilson | 987 Birch St | Apt 2A | San Francisco | CA | swilson@example.com | 555-5566 |   |
| David | Martinez | 246 Walnut St | Suite 3 | Phoenix | AZ | dmartinez@example.com | 555-7788 |   |
| Laura | Garcia | 135 Cherry St | Floor 1 | Portland | OR | lgarcia@example.com | 555-9900 |   |
| James | Anderson | 369 Maple Ave | Unit 4 | Boston | MA | janderson@example.com | 555-2211 |   |
| Anna | Taylor | 753 Cypress St | Apt 6D | New York | NY | ataylor@example.com | 555-4433 |   |
| <div>1 2 3 4 5 6 7 8</div> | | | | | | | | |

- API Specifications
 - **Create Customer:** Detailed specifications for the API that handles creating new customer records.

| | | | |
|--|------------------|--|------------------------|
| Home | Customer Details | | LogOut |
| <div><div><div>First Name:</div><div><input type="text"/></div></div><div><div>Last Name:</div><div><input type="text"/></div></div><div><div>Street:</div><div><input type="text"/></div></div><div><div>Address:</div><div><input type="text"/></div></div><div><div>City:</div><div><input type="text"/></div></div><div><div>State:</div><div><input type="text"/></div></div><div><div>Email:</div><div><input type="text"/></div></div><div><div>Phone:</div><div><input type="text"/></div></div><div><input type="button" value="Submit"/></div></div> | | | |

- Update Customer

Customer Details

First Name:

Last Name:

Street:

Address:

City:

State:

Email:

Phone:

- Get Customer List (with Pagination, Sorting, and Searching)
- Get Customer by ID
- Delete Customer

- JWT Authentication Implementation

4. Data Synchronization Feature

- Integration with Remote API
- Sync Button Implementation
- Data Update Logic

Customer List

Home

Add Customer

Search By

First Name

Q

Logout

| First Name | Last Name | Street | Address | City | State | Email | Phone | Action |
|------------|-----------|----------------|---------|---------------|--------|-----------------------|----------|--------|
| John | Doem | 123 Elm St | Apt 4B | Springfield | IL | johndoe@example.com | 555-1234 | |
| James | Smith | 456 Oak St | Suite 2 | Columbus | OH | janesmith@example.com | 555-5678 | |
| Michael | Johnson | 789 Pine St | Floor 3 | Austin | TX | mjohnson@example.com | 555-9101 | |
| Emily | Davis | 321 Maple St | Unit 5 | Seattle | WA | edavis@example.com | 555-1122 | |
| Chris | Brown | 654 Cedar St | Apt 7C | Denver | COsdfs | cbrown@example.com | 555-3344 | |
| Sarah | Wilson | 987 Birch St | Apt 2A | San Francisco | CA | swilson@example.com | 555-5566 | |
| David | Martinez | 246 Walnut St | Suite 3 | Phoenix | AZ | dmartinez@example.com | 555-7788 | |
| Laura | Garcia | 135 Cherry St | Floor 1 | Portland | OR | lgarcia@example.com | 555-9900 | |
| James | Anderson | 369 Maple Ave | Unit 4 | Boston | MA | janderson@example.com | 555-2211 | |
| Anna | Taylor | 753 Cypress St | Apt 6D | New York | NY | ataylor@example.com | 555-4433 | |

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Project Git-hub Link : <https://github.com/Purushotham-Palla/customersync>

Project video link :

https://drive.google.com/file/d/1FMM8hlaWRSFCO4ZJ8yMFvEcw8IkZVXf_/view?usp=drivesdk
