ZUMBA CLASS MANAGEMENT APP

Objective:

To build an application to handle data on students learning Zumba, which will manage the enrollment of students in the correct batch and provide appropriate timing for their classes.

Prerequisites:

- Java
- Servlets
- JSP
- Maven
- JDBC
- MySQL

Task:

- .1. Create a Dynamic Web Project in Eclipse and configure Maven
- 2. Create Java Classes for participants and batches
- 3. Create Servlets for participants and batches related to communication
- 4. Create HTML Pages for CRUD operations related to batches and participants
- 5. Perform CRUD operations using database methods using JDBC
- 6. Create JSP Pages for query parameters
- 7. Build and Run the Project on the Apache Tomcat web server
- 8. Package the project as a Jar file using Maven Package Goal

Modules:

- 1. Admin: The admin has full control over the system, including managing participants and batches.
- 2. **User**: The user (participant) can log in to view available batches and register for classes after the admin has registered them.

Login Credentials:

Admin Login:

• Authentication Method: Hard-coded

Email: admin@zumba.comPassword: admin@123

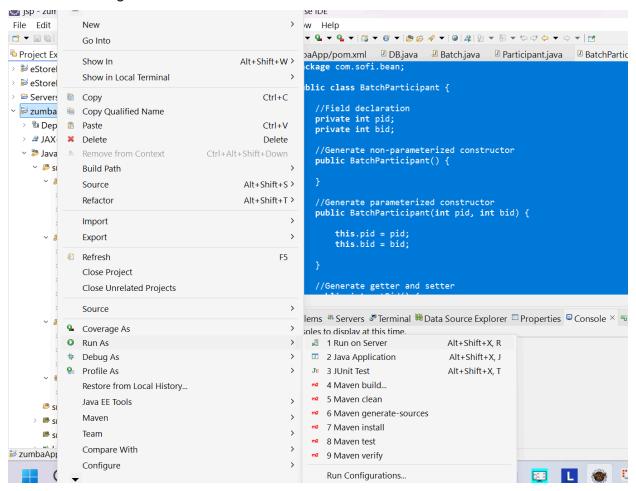
User Login:

 After the admin registers a participant, the user can log in using their Email and Password to access their personalized dashboard and enroll in available batches.

Steps to Run the Project:

- 1. Clone the Repository:
- 2. git clone https://github.com/nayaksofia/zumbaApp_MavenJsp.git
- 3. Set up the Database:
 - Ensure you have MySQL installed.
 - Create a database and import the provided schema file to set up tables for participants, batches, and enrollments.
- 4. Configure Database Connection:
 - Update the database connection details in the configuration file (DB.java) to match your local MySQL setup.
- 5. Run the Application:
 - Use a Java IDE (like IntelliJ IDEA or Eclipse) or run the project using Maven
 - Access the application through your web browser.
- 6. Log in as Admin:
 - Use the admin credentials to log in and manage participants and batches.
- 7. Log in as User:

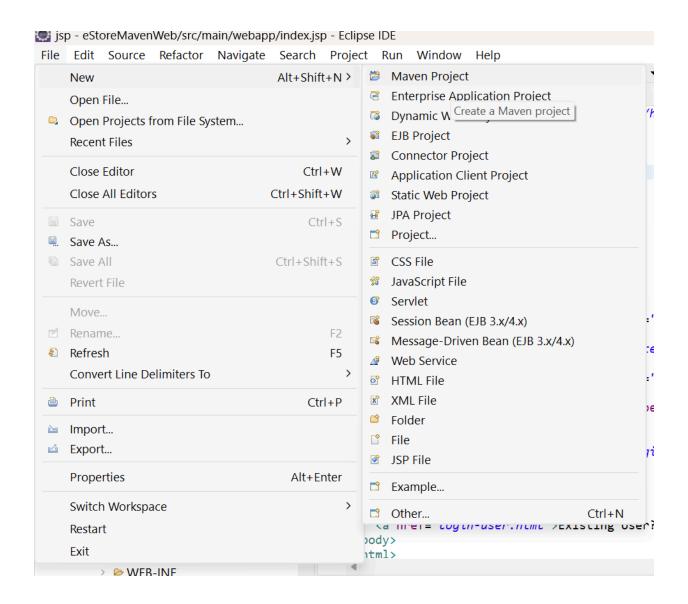
 After admin registration, users can log in with their email and password to register for batches.

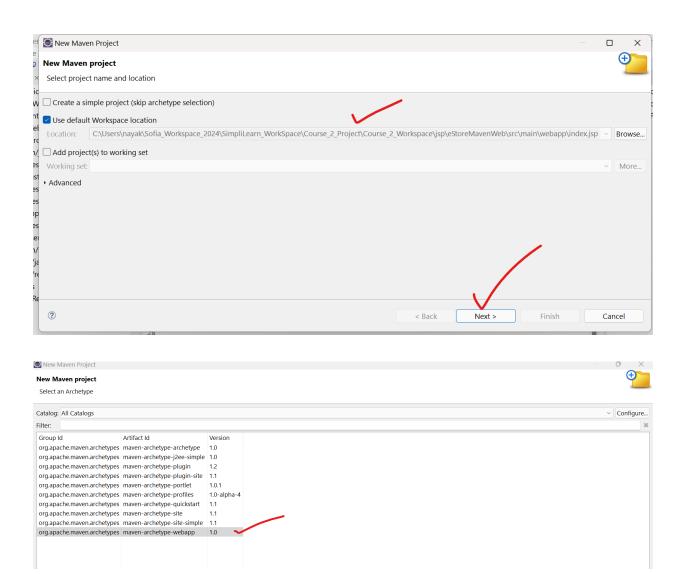


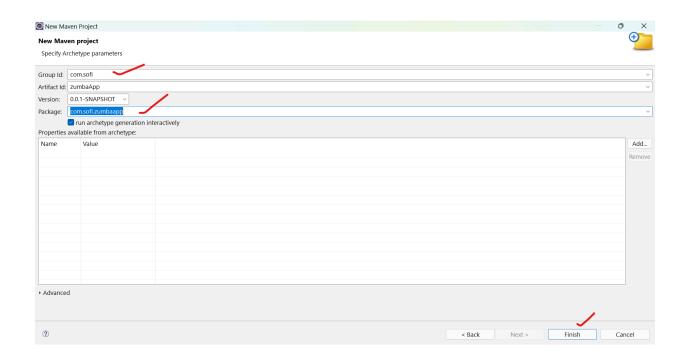
Backend Part:

Step 1: Create a Maven project

Name of Project: zumbaApp



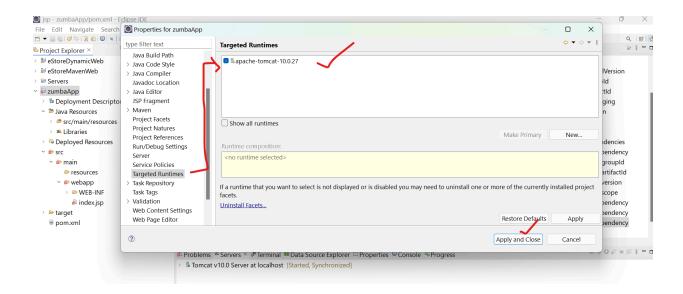




Step 2: Add required dependencies in pom.xml

```
<!-- https://mvnrepository.com/artifact/javax.servlet/javax.servlet-api -->
      <dependency>
              <groupId>javax.servlet</groupId>
              <artifactId>javax.servlet-api</artifactId>
              <version>4.0.1</version>
              <scope>provided</scope>
      </dependency>
      <!--
     https://mvnrepository.com/artifact/javax.servlet.jsp/javax.servlet.jsp-api -->
      <dependency>
              <groupId>javax.servlet.jsp</groupId>
              <artifactId>javax.servlet.jsp-api</artifactId>
              <version>2.3.3</version>
              <scope>provided</scope>
      </dependency>
              <!-- https://mvnrepository.com/artifact/mysql/mysql-connector-java -->
 <dependency>
     <groupId>mysql</groupId>
         <artifactId>mysql-connector-java</artifactId>
           <version>8.0.33</version>
   </dependency>
```

Step-3: Set Targeted Runtime By Going through Properties



Step-4: File Structure of zumbaApp

Choose JavaSE [1.8] and update the project by Right Click on projectName \rightarrow Maven \rightarrow Update Project

- zumbaApp

 zumbaApp

 y

 y

 zumbaApp

 y

 y

 zumbaApp

 y

 zumbaApp

 y

 zumbaApp

 y

 zumbaApp

 y

 zumbaApp

 zumbaApp
 - > 📴 Deployment Descriptor: Archetype Created Web Application
 - Java Resources
 - > 🛎 src/main/java
 - - > 🖻 Deployment Descriptor: Archetype Created Web Application
 - src/test/java
 - # src/test/resources
 - ✓

 Libraries
 - ⇒ JRE System Library [JavaSE-1.8]
 - Maven Dependencies
 - → Server Runtime [apache-tomcat-10.0.27]
 - Deployed Resources
 - > > WEB-INF
 - index.jsp
 - src
 - > > main
 - > 🗁 test
 - target

Step-5: Coding Part

BackendOperation:

Step-5.1: Create DB Class file for database connection package com.sofi.db;

import java.sql.Connection; import java.sql.DriverManager;

```
import java.sql.SQLException;
public class DB {
  // Singleton instance
  private static DB db = new DB();
  private DB() {
     try {
       Class.forName("com.mysql.cj.jdbc.Driver");
       System.out.println("[DB] Driver Loaded!!!");
     } catch (ClassNotFoundException e) {
       e.printStackTrace();
    }
  }
  // Lazy initialization of singleton
  public static DB getDB() {
     return db;
  }
  // Method to get a new connection for each call
  public Connection getConnection() throws SQLException {
     String url = "jdbc:mysql://localhost:3306/zumba";
     String user = "root";
     String password = "root";
     return DriverManager.getConnection(url, user, password);
  }
}
Step-5.3: Create Bean Package to represent tables in the databases
Batch.java
package com.sofi.bean;
import java.sql.Date;
import java.sql.Time;
import java.time.LocalTime;
```

```
public class Batch {
  // Field Declarations
  private int bid;
  private String instructor;
  private Date date;
  private String schedule;
  private Time time;
  // Non-parameterized constructor
  public Batch() {
  }
  // Parameterized constructor
  public Batch(int bid, String instructor, Date date, String schedule, Time time) {
     this.bid = bid;
     this.instructor = instructor;
     this.date = date;
     this.schedule = schedule;
     this.time = time;
  }
  // Getters and Setters
  public int getBid() {
     return bid;
  }
  public void setBid(int bid) {
     this.bid = bid;
  }
  public String getInstructor() {
     return instructor;
  }
  public void setInstructor(String instructor) {
     this.instructor = instructor;
  }
  public Date getDate() {
     return date;
  }
```

```
public void setDate(Date date) {
     this.date = date;
  }
  public String getSchedule() {
     return schedule;
  }
  public void setSchedule(String schedule) {
     this.schedule = schedule;
  }
  public Time getTime() {
     return time;
  }
  public void setTime(Time time) {
     this.time = time;
  }
  // toString method for debugging
  @Override
  public String toString() {
     return "Batch [bid=" + bid + ", instructor=" + instructor + ", date=" + date + ", schedule=" +
schedule
          + ", time=" + time + "]";
}
Participant.java
package com.sofi.bean;
public class Participant {
       //Field declaration :: pid, name, age, email, password
               private int pid;
               private String name;
               private int age;
               private String email;
               private String password;
               //Non-parameterized constructor
               public Participant() {
               }
```

```
public Participant(int pid, String name, int age, String email, String password) {
                        super();
                        this.pid = pid;
                        this.name = name;
                        this.age = age;
                        this.email = email;
                        this.password = password;
                }
                //Getter and Setter
                public int getPid() {
                        return pid;
                public void setPid(int pid) {
                        this.pid = pid;
                }
                public String getName() {
                        return name;
                public void setName(String name) {
                        this.name = name;
                public int getAge() {
                        return age;
                public void setAge(int age) {
                        this.age = age;
                public String getEmail() {
                        return email;
                public void setEmail(String email) {
                        this.email = email;
                public String getPassword() {
                        return password;
                public void setPassword(String password) {
                        this.password = password;
                }
                //toString Method , exclude password for security
                @Override
                public String toString() {
                        return "Participant [pid=" + pid + ", name=" + name + ", age=" + age + ", email="
+ email +
                                        "]";
                }
```

//Parameterized Constructor

```
}
```

BatchParticipant.java

```
package com.sofi.bean;
public class BatchParticipant {
       //Field declaration
        private int pid;
 private int bid;
  //Generate non-parameterized constructor
        public BatchParticipant() {
       }
        //Generate parameterized constructor
        public BatchParticipant(int pid, int bid) {
                this.pid = pid;
                this.bid = bid;
       }
        //Generate getter and setter
        public int getPid() {
                return pid;
       }
        public void setPid(int pid) {
                this.pid = pid;
        public int getBid() {
                return bid;
        public void setBid(int bid) {
                this.bid = bid;
       }
        //Generate toString method
        @Override
        public String toString() {
                return "ParticipantBatch [pid=" + pid + ", bid=" + bid + ", pname=" + "]";
       }
```

```
}
```

select * from Participant;

```
Step-5.4: MySQLWorkbench: Create Database and tables [Database
name: zumba]
create database zumba;
use zumba;
show tables:
CREATE TABLE Batch (
  bid INT AUTO INCREMENT PRIMARY KEY,
  instructor VARCHAR(100) NOT NULL,
  date DATE NOT NULL,
  schedule VARCHAR(100) NOT NULL,
  time TIME NOT NULL
);
CREATE TABLE Participant (
  pid INT AUTO_INCREMENT PRIMARY KEY,
  name VARCHAR(100) NOT NULL,
  age INT NOT NULL,
  email VARCHAR(100) NOT NULL,
  password VARCHAR(255) NOT NULL
);
CREATE TABLE ParticipantBatch (
  pid INT NOT NULL,
  bid INT NOT NULL,
  PRIMARY KEY (pid, bid),
  FOREIGN KEY (pid) REFERENCES Participant(pid) ON DELETE CASCADE,
  FOREIGN KEY (bid) REFERENCES Batch(bid) ON DELETE CASCADE
);
select * from Batch;
```

select * from ParticipantBatch;

describe Batch;

describe Participant;

describe ParticipantBatch;

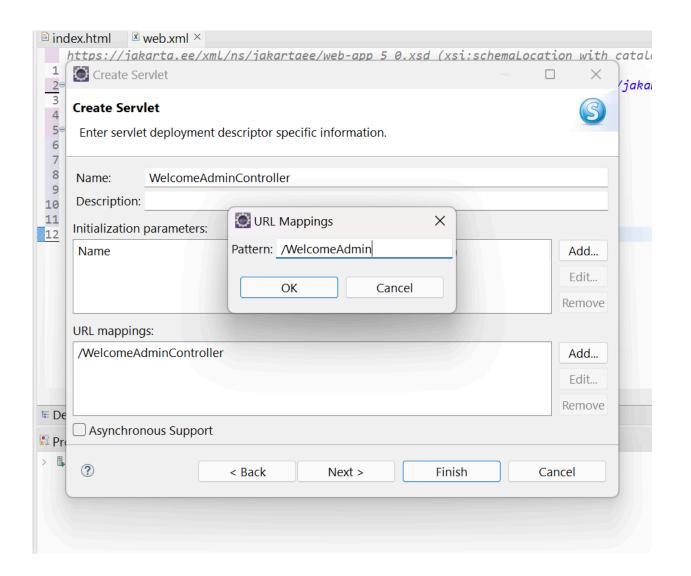
Step-5.5: Create DAO Classes for CRUD operation

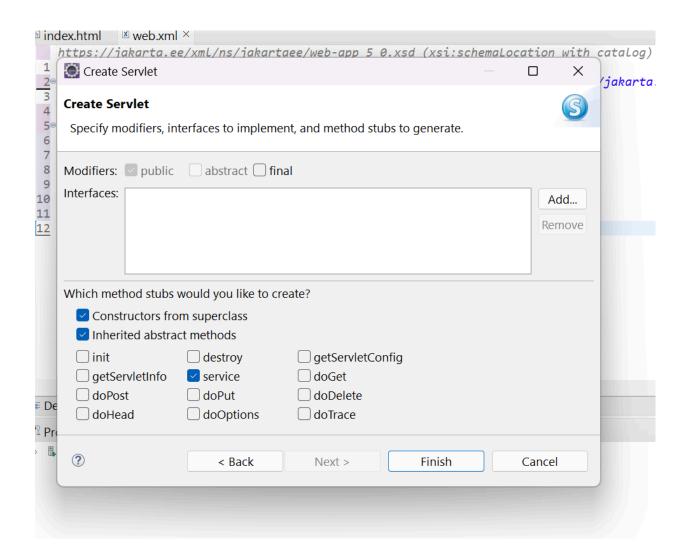
- - BatchDAO.java
 - ParticipantBatchDAO.java
 - ParticipantDAO.java

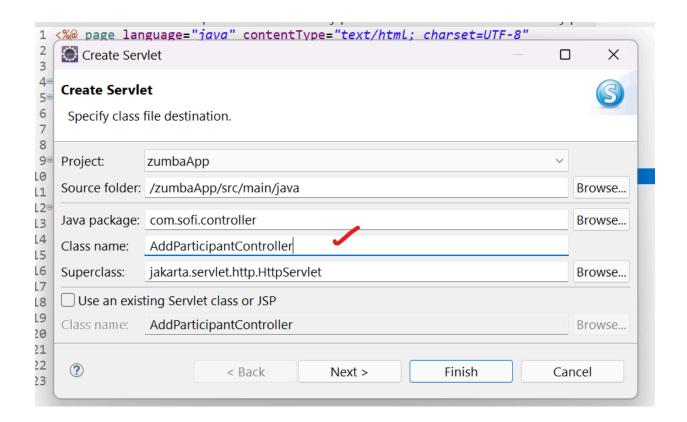
Step-5.6: Create Controller Package to manage servlet operation

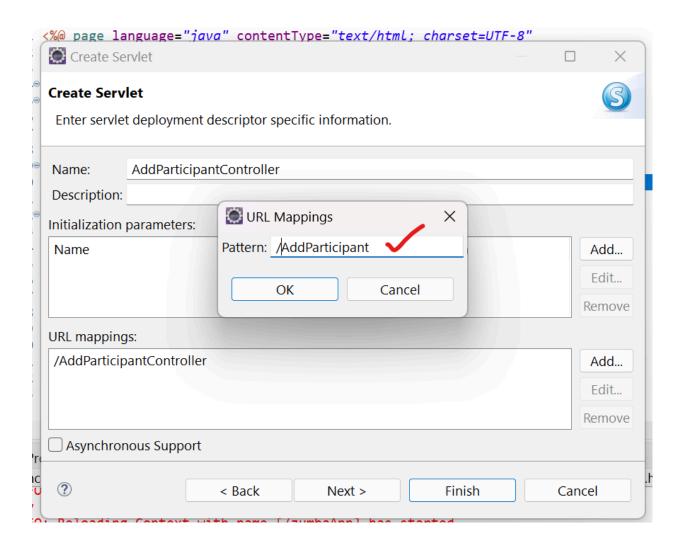
- - AddBatchController.java
 - > AddParticipantController.java
 - LogoutServlet.java
 - A Register Batch Controller. java
 - WelcomeAdminController.java

Few eg:

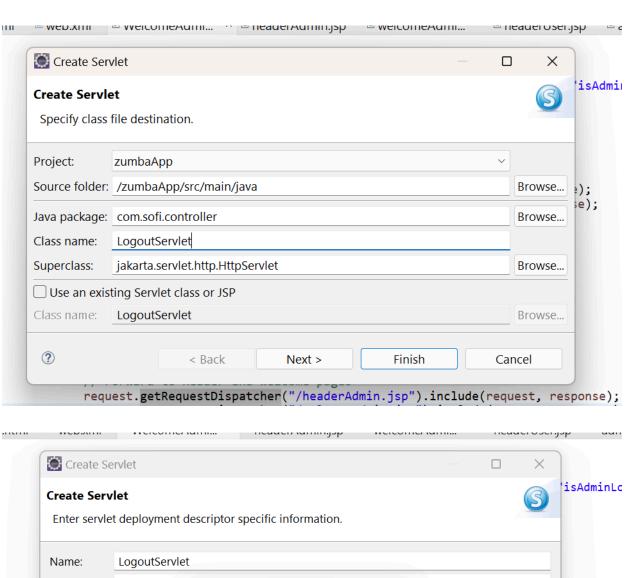


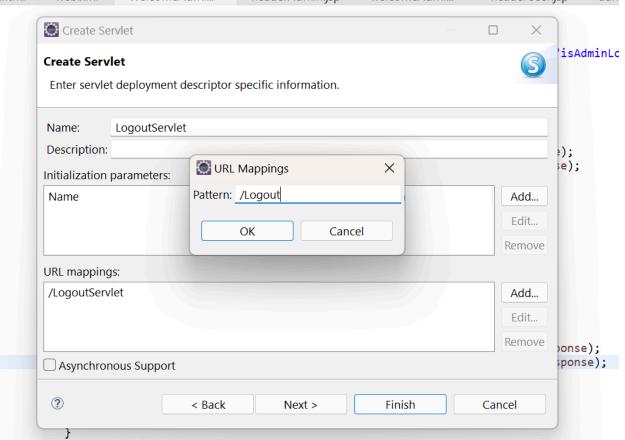


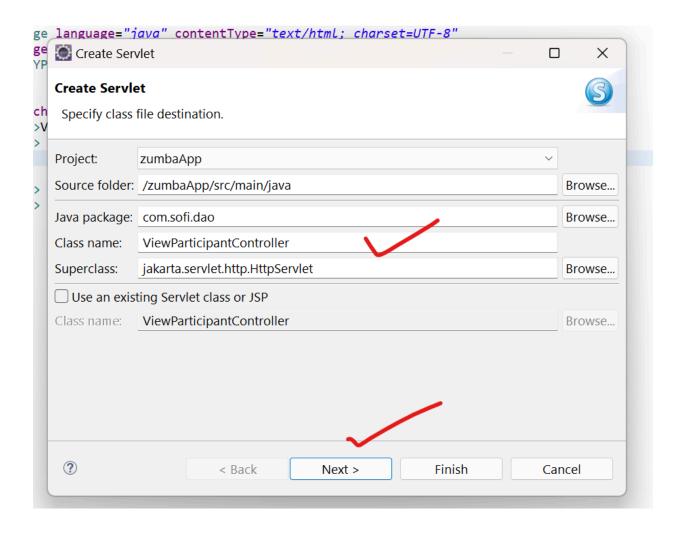


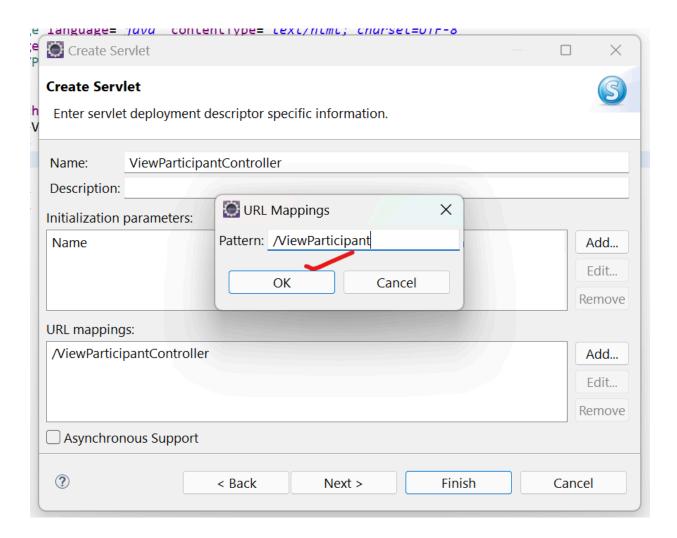


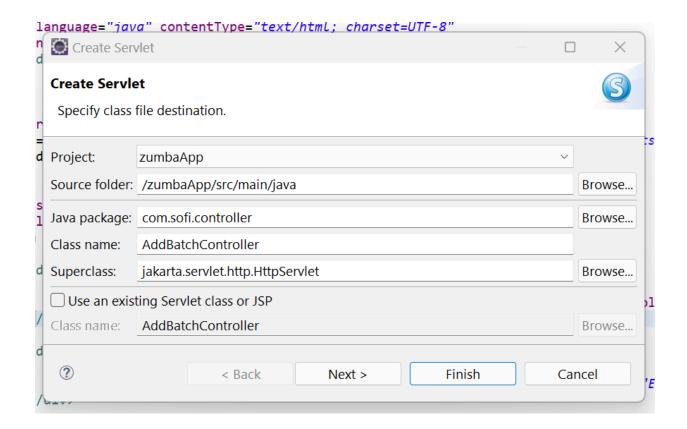
LogOut Servlet:

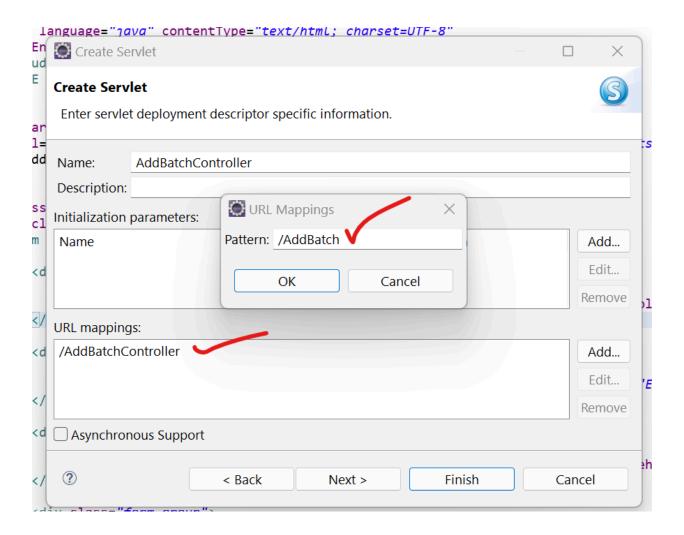


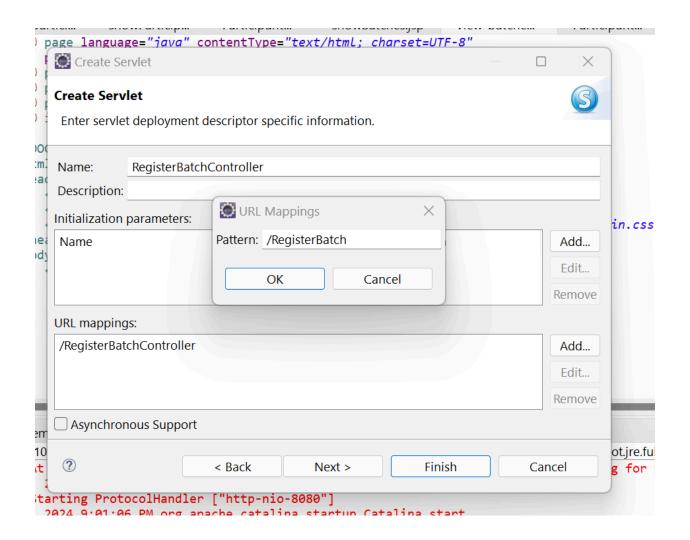










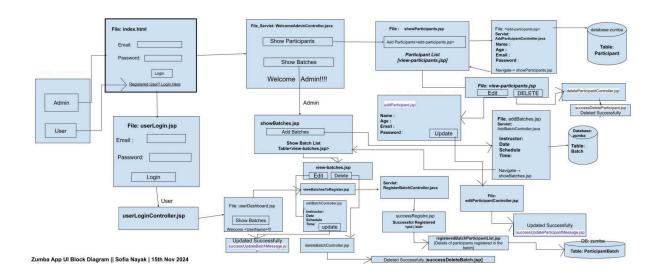


Front-end Operation:

Create Required JSP and HTML file

- 🗸 🤛 main
 - > De java
 - resources
 - 🗸 🗁 webapp
 - > 🗁 images
 - > Description > Description
 - addBatch.jsp
 - addParticipant.jsp
 - adminLogin.jsp
 - deleteBatchController.jsp
 - deleteParticipantController.jsp
 - editBatch.jsp
 - editBatchController.jsp
 - editParticipant.jsp
 - editParticipantController.jsp
 - footer.jsp
 - headerAdmin.jsp
 - headerUser.jsp
 - index.html
 - registeredBatchParticipantList.jsp
 - showBatches.jsp
 - showParticipants.jsp
 - successDeleteBatch.jsp
 - successDeleteParticipant.jsp
 - successRegister.jsp
 - successUpdateBatchMessage.jsp
 - successUpdateParticipantMessage.isp

Block Diagram: Flow of Zumba app

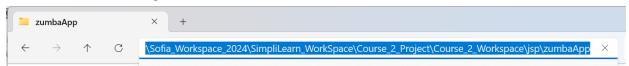


Step [Final]: Git and GitHub

Github Link: [Zumba App]

https://github.com/nayaksofia/zumbaApp_MavenJsp.git

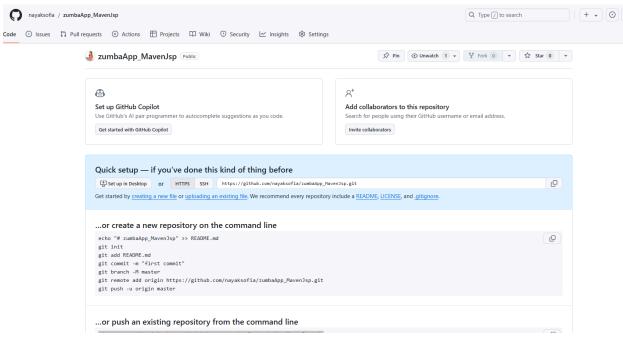
1. Select the path

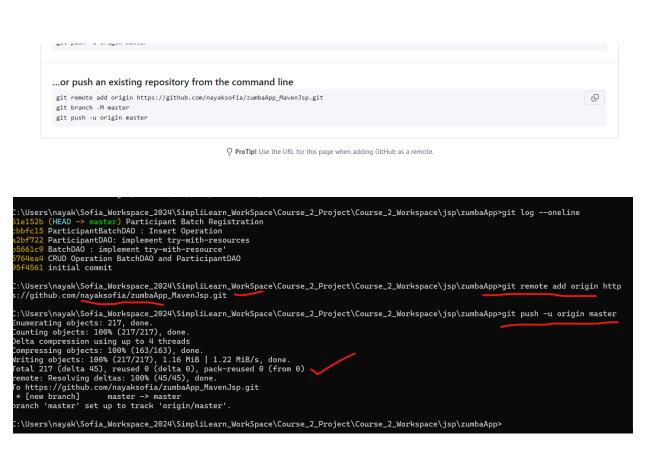


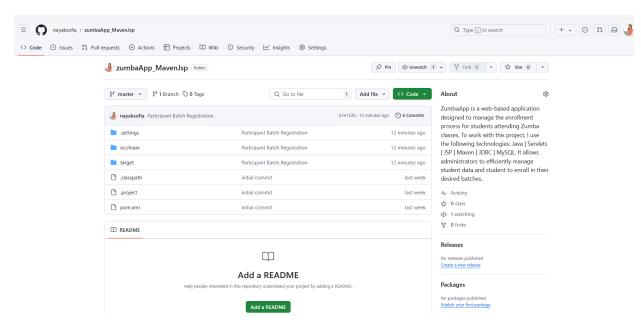
2. Write cmd and the command prompt will open

3. Initiate git command

4. github

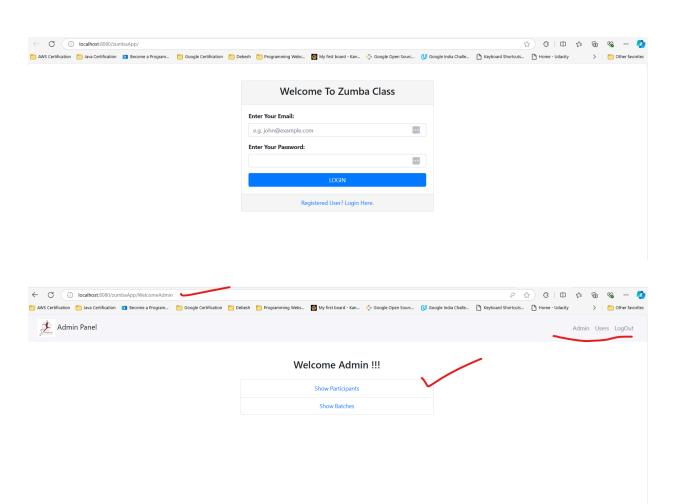


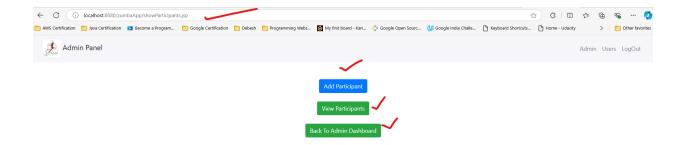


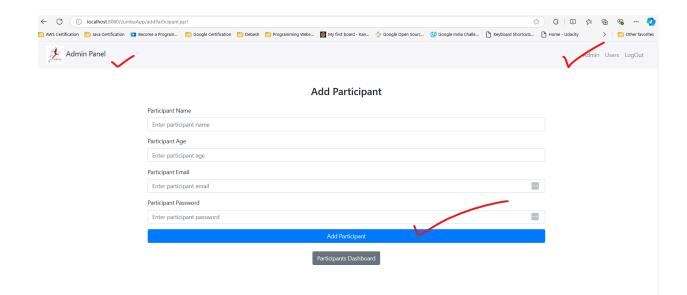


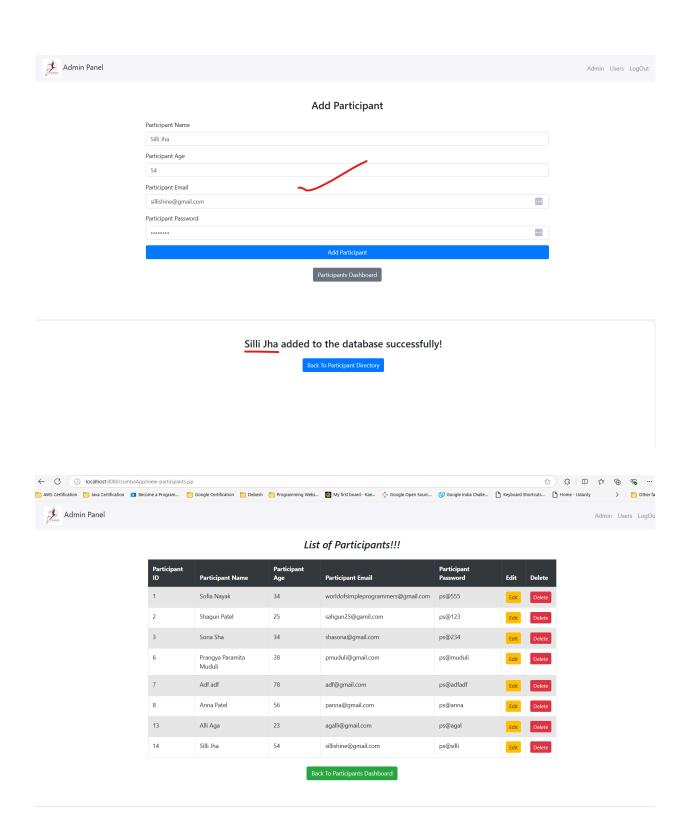
Latest changes on github repository to local repository:

Result / OutPut:

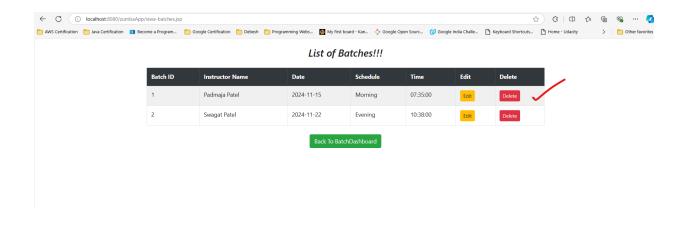


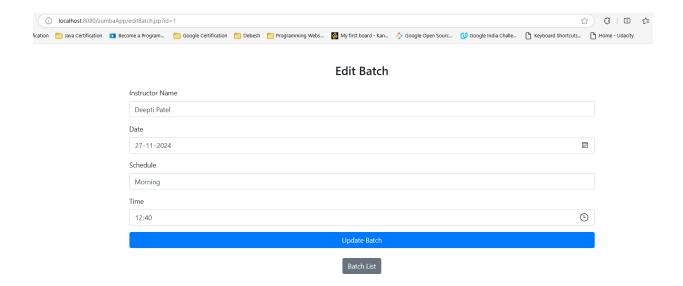


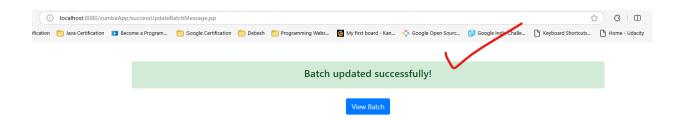




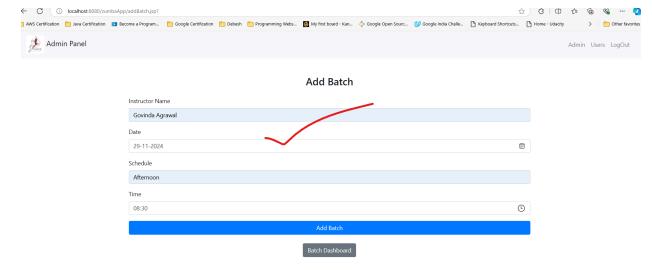
Admin: View Batch







Now: (i) localhost:8080/zumbaApp/view-batches.jsp fication 🛅 Java Certification . 📭 Become a Program... 🛅 Google Certification . 🛅 Debesh 🎁 Programming Webs... 🔯 My first board - Kan... 💠 Google Open Sourc... 🔱 Google India Challe... . 🖒 Keyboard Shortcuts... . 🖒 Home - Udacity > List of Batches!!! Schedule Edit Delete Batch ID Instructor Name Date Time 2024-11-27 Deepti Patel 12:40:00 Morning Edit 2024-11-22 Evening 2 Swagat Patel 10:38:00 Back To BatchDashboard





Govinda Agrawal added to the database successfully!

Back To Batch Directory

