Assessment Project: CB FSD – Backend and Database Development  
Author: Rogelio Lotho

**Goal**: To build a Gym Membership application to handle and manage the data detail recordings of the participants and batches.

**Feature:** Design Server side Controller Structure with Servlets implementing Database connections to perform CRUD operation.

**Tech Stack**: Java, Servlets, JSP, Maven, JDBC, HTML, MySQL, Git and GitHub

1. Create a Dynamic Web Project in Eclipses and configure it to Maven project
   1. Dynamic Web Project

Graphical user interface, text, application, email

Description automatically generated

* 1. Configure to Maven Project

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Description automatically generated

* 1. Maven POM  
     Graphical user interface, text, application, email

     Description automatically generated

1. Create Java Classes
   1. Create Participant class  
      Graphical user interface, text, application

      Description automatically generated  
      2.1.a. Generate Constructor and toString()  
      Table

      Description automatically generated  
      2.1.b Generated  
      Graphical user interface, text, application, email

      Description automatically generated
   2. Create Batch class  
      Graphical user interface, text, email

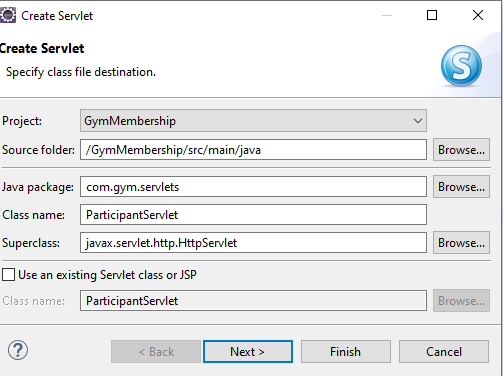
      Description automatically generated

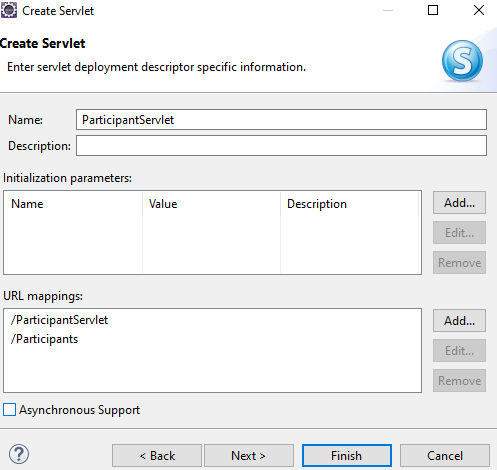
2.2.a. Batch Constructors  
Graphical user interface, text, application, email

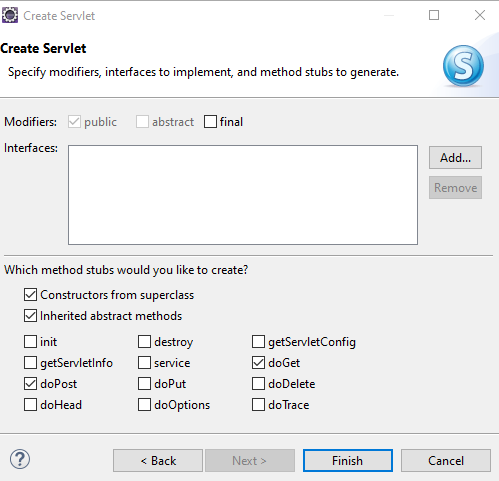
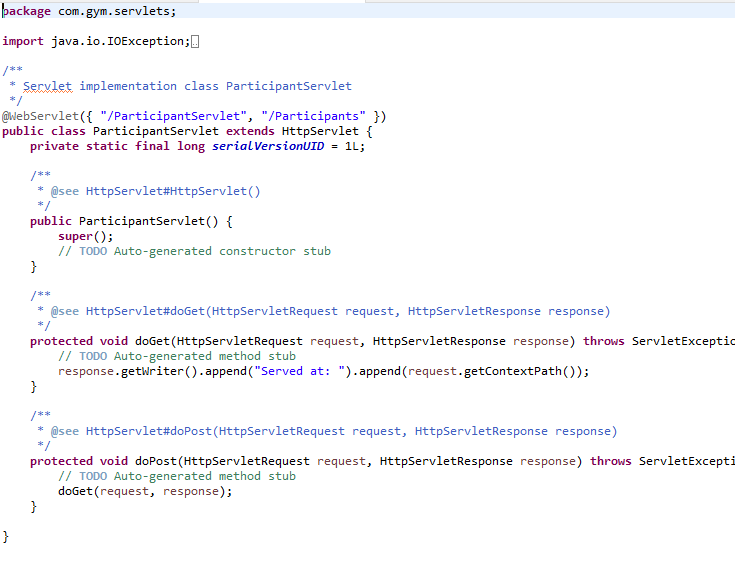
Description automatically generated

1. Create Servlets in the Project  
   Text, letter

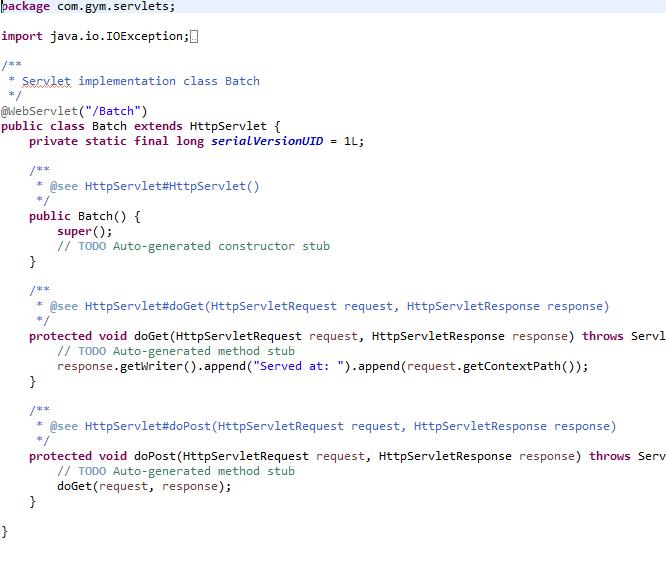
   Description automatically generated

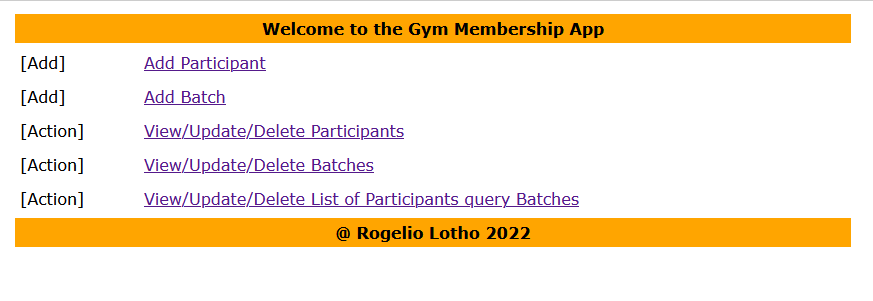
3.1. Create a Servlet for Participant  


3.1.a. Create Participant mapping  


3.1.b. Select Implementation and methods  
  
3.1.c. Generate Code  


3.2. Create Servlet for Batch



1. Create HTML Pages
   1. Create a Welcome Page with Navigation Menu  
      
   2. Create a HTML page to Add Batch  
      Graphical user interface, text, application

      Description automatically generated
   3. Create a HTML page to Add Participant  
      Graphical user interface, application

      Description automatically generated
   4. Create a HTML page to Update Batch  
      Graphical user interface, application

      Description automatically generated
   5. Create a HTML page to Update Participant  
      Graphical user interface, application

      Description automatically generated
2. Perform CRUD Operations in JDBCCreate Database and Table in MySQL  
   5.1.a Mysql Database  
   Text

   Description automatically generated

5.1.b Mysql Participant and Batch table  
Text

Description automatically generated  
Diagram

Description automatically generated with medium confidence

* 1. Configure JDBC Dependencies for MySQL  
     Graphical user interface, text

     Description automatically generated
  2. Implement a DAO Design Pattern  
     Text

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  3. Create a Repository Class which uses DAO to perform DB Interactions  
     Graphical user interface, text, application

     Description automatically generated
  4. In Participant Servlet implement CRUD Operations using doGet, doPost, doDelete and doPut Http Methods  
     Text

     Description automatically generated with medium confidence  
     Graphical user interface, text, application

     Description automatically generated  
     Graphical user interface, text

     Description automatically generated  
     Text

     Description automatically generated

[UpdateParticipantServlet]

* 1. In Batch Servlet implement CRUD Operations using doGet, doPost, doDelete and doPut Http Methods  
     5.5.a Batch doPost  
     Graphical user interface, text, application

     Description automatically generated

5.5.b Run Batch doPost  
Graphical user interface, application

Description automatically generatedText

Description automatically generatedA picture containing table

Description automatically generated

1. Create JSP Pages in the Project
   1. Create a JSP Page to view the list of Participants with delete option  
      Graphical user interface

      Description automatically generated with medium confidence

[UpdateParticipant JSP]  
Text

Description automatically generated

[UpdateBatch Servlet]  
Text, letter

Description automatically generated  
[UpdateParticipant Servlet]

Graphical user interface, text

Description automatically generated

[DeleteParticipant Servlet]

Graphical user interface, text, application, email

Description automatically generated

* 1. Text

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     Graphical user interface, application, Word

     Description automatically generated  
     Graphical user interface, text

     Description automatically generated
  2. Create a JSP page to view the list of Batches with delete option  
     Table

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  3. Create a JSP Page to view the lists of Particpants in a Batch using query parameter

Graphical user interface, text, application

Description automatically generated

1. Build and Run the Project on Apache Tomcat webserver

Graphical user interface, text, application, email

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1. Validate the working of project  
   Text

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2. Package the project as a Jar file using maven Package Goal

Graphical user interface, text, application

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