University of Applied Sciences and Arts Northwestern Switzerland

Pizzeria Project

Internet Technology

Best Italian Pizza in Switzerland

Lecturers

- Charuta Pande
- Devid Montecchiari

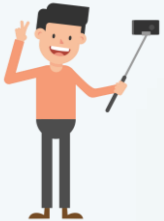
BIT Students who Prepared the Pizzeria Project

Minimal project that supports all the minimal CRUD functions needed to run a pizzeria.

BIT Student

Jibin Mathew Peechatt
Implementation

BIT Student



Marko Jurcevic
Domain Design

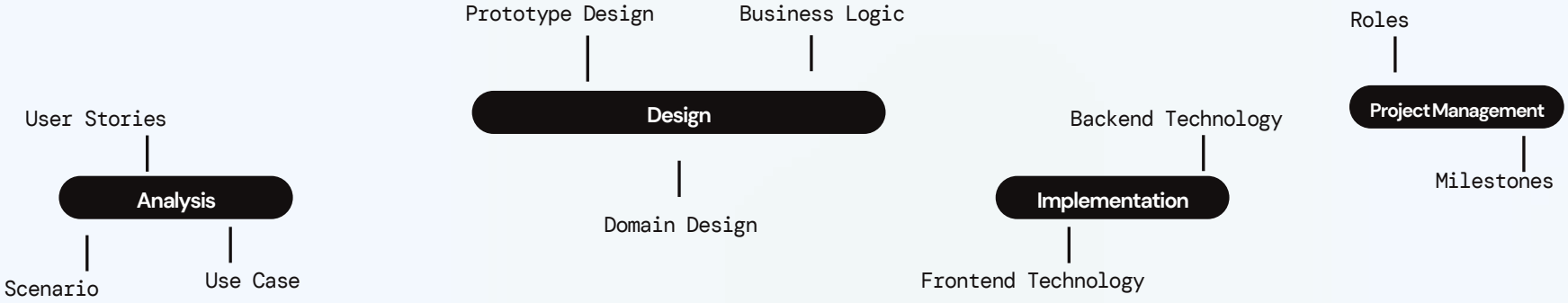
BIT Student

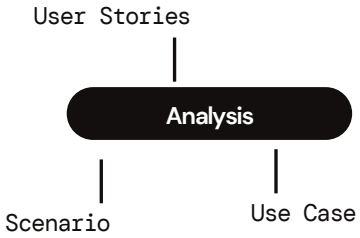
Leon Bytyqi
Project Management

BIT Student

Jevoen Jenifar
Analysis

Agenda


User Stories
Analysis
Scenario
Use Case
Prototype Design
Business Logic
Design
Domain Design
Backend Technology
Implementation
Frontend Technology
Roles
Project Management
Milestones


User Stories
Analysis
Scenario
Use Case

Scenario

- Group work
- Extended form of the pizzeria web application

User Features

- **Browse Menu**

Customers can easily browse through the pizzeria menu.

- **Place Orders**

Customers can place orders through the web application.

- **Login System**

Login system for users

- **Bonus Points**

Customers earn bonus points for each order.

- **Discounts**

Bonus points can be redeemed for discounts on future orders.

- **Customer Profile**

Displays accumulated bonus points and order history.

Admin Features

- **Manage Menu**

Admin can update and maintain the pizza and toppings information.

- **Order Management**

Admin can view and manage customer orders.

Payment

- **Payment Integration**

Customers can pay for their orders directly through the application.

User Stories

User Stories

- **View Menu**

As a user, I want to see the menu so that I can choose my favorite pizza and toppings.

- **Create Profile**

As a user, I want to create my own profile so that I can save my details and view my previous orders.

- **Login**

As a user, I want to log in so that I can authenticate myself and see my bonus points.

- **Make Payment**

As a user, I want to make the payment so that I can complete the order.

- **Access Public Pages**

As a user, I want to use list views so that I can access public pages.

Admin Stories

- **Explore Business Data**

As an admin, I want to use list views to explore and read my business data.

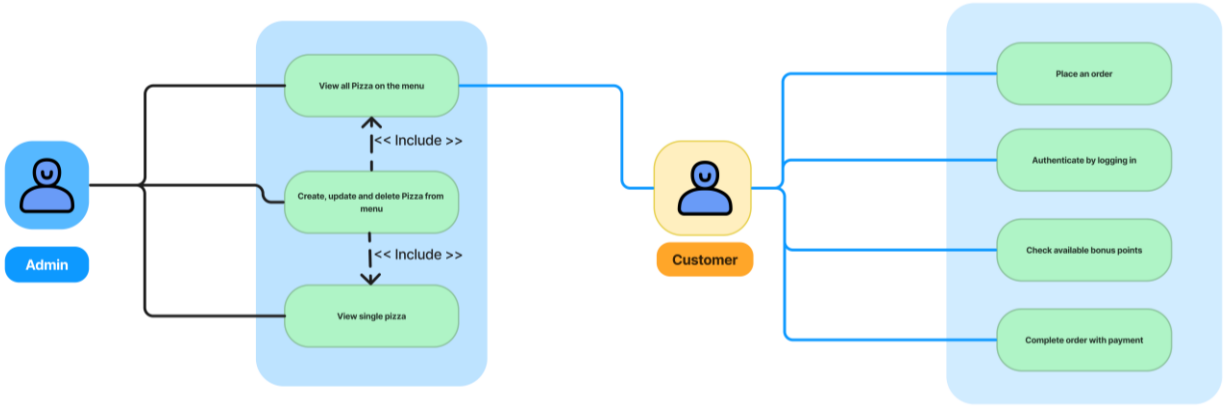
- **Edit and Create Views**

As an admin, I want to use edit and create views to maintain my business data, such as adding new pizzas or updating existing pizzas on the menu.

- **Simple Web Application**

As an admin, I want a consistent and simple web application so that it is easy to use and maintain.

Use Case



- **UC-1 [View all the Pizza on the menu]**

Admin can view all available information about pizzas and toppings.

- **UC-2 [View a single Pizza]**

Admin can retrieve the information on a specific pizza

- **UC-3 [Edit a Pizza]**

Admin can create, update, and delete pizzas from the menu.

- **UC-4 [Show Current Location Offer]**

User can retrieve special menu by location

- **UC-5 [Place an order]**

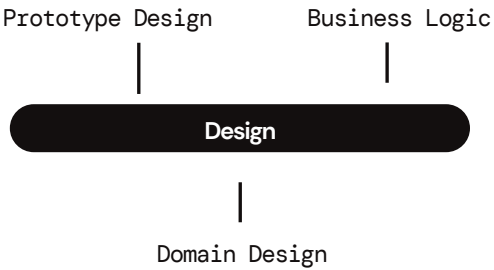
Customers can browse the pizzeria menu and place an order

- **UC-6 [Authenticate by logging in]**

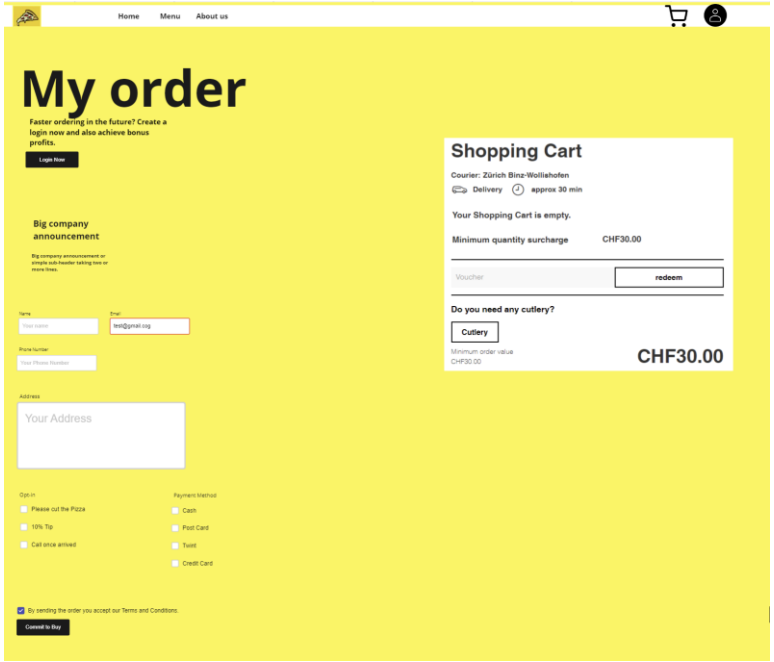
Customers can authenticate by logging in and check the available bonus points

- **UC-7 [Complete order with payment]**

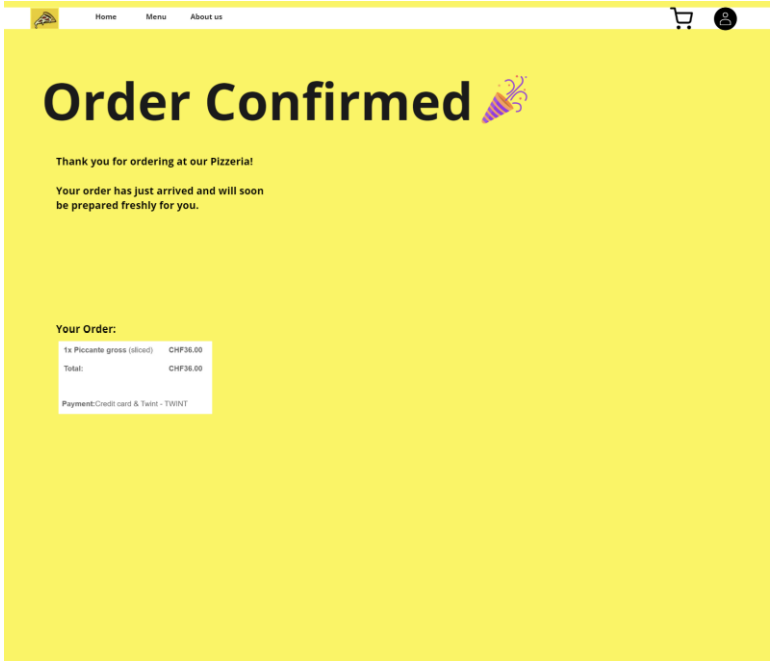
Customers can complete their order by making payment.


Prototype Design
Business Logic
Design
Domain Design

Design

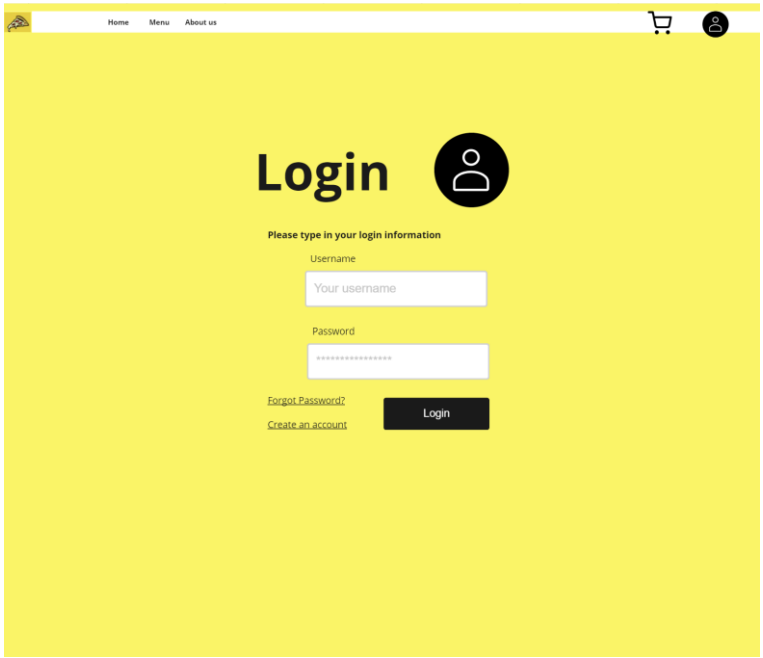


Order Design

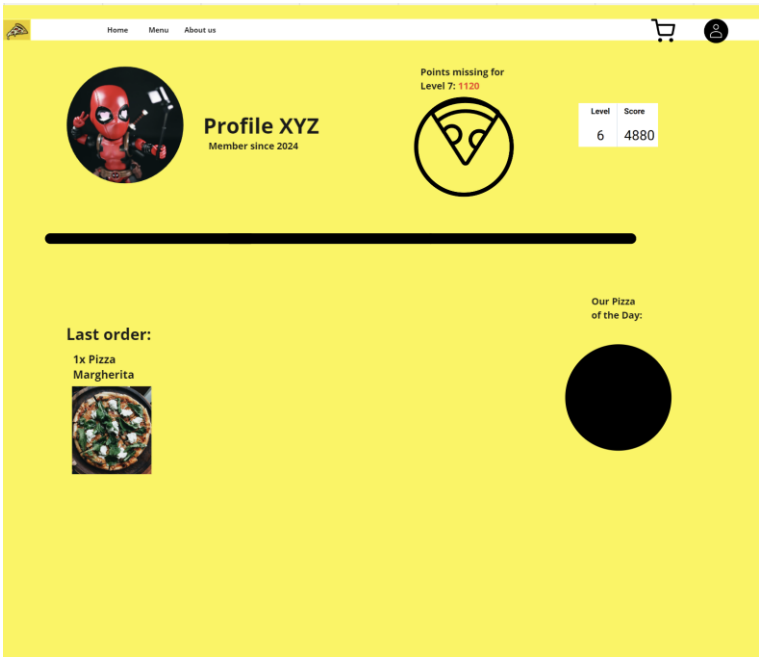


Order Confirmation

Design



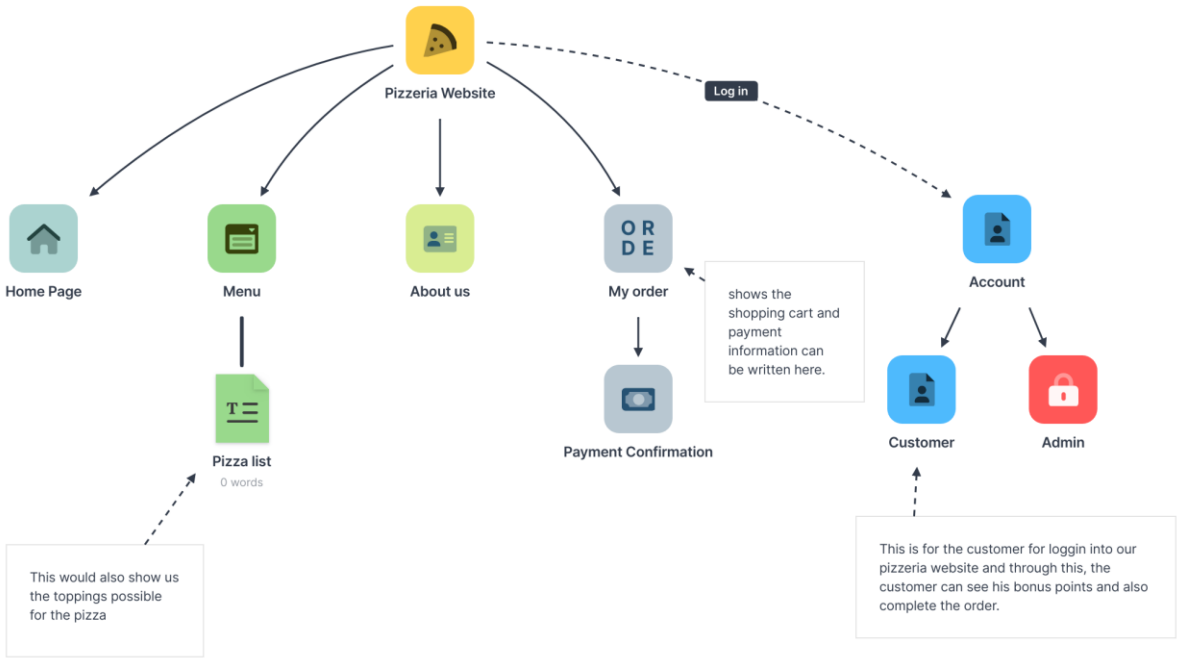
Login Page



Customer Profile Page

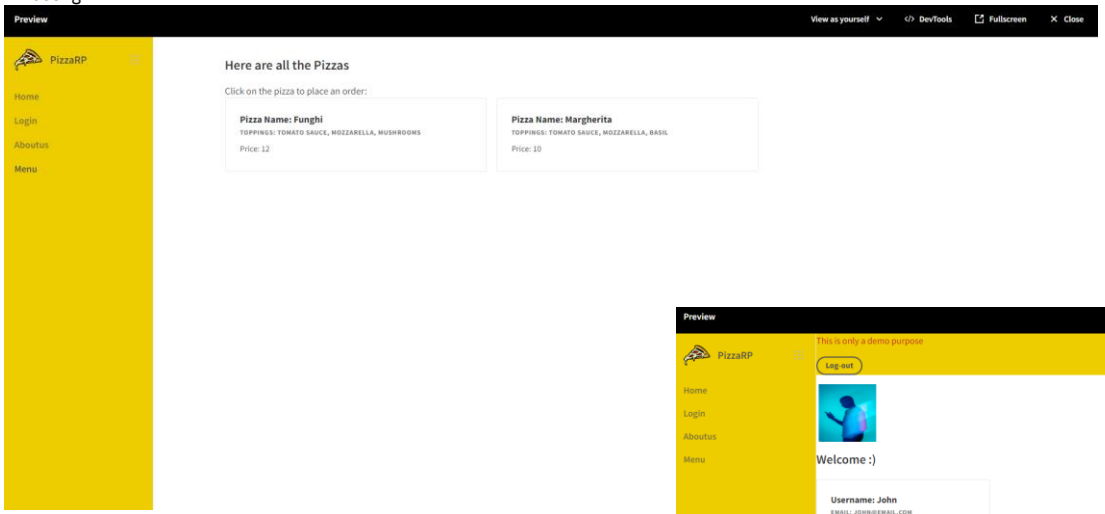
Wireframe

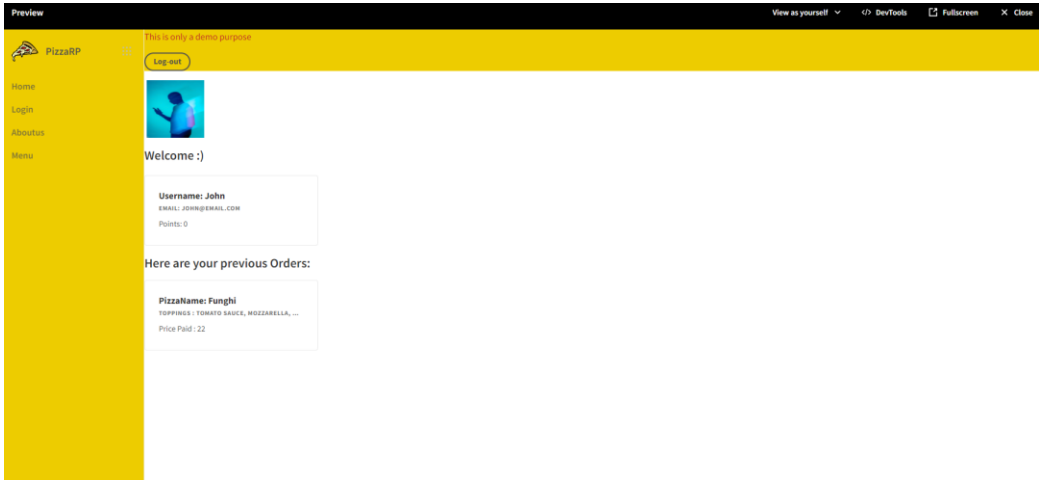
Planned sitemap



Prototype

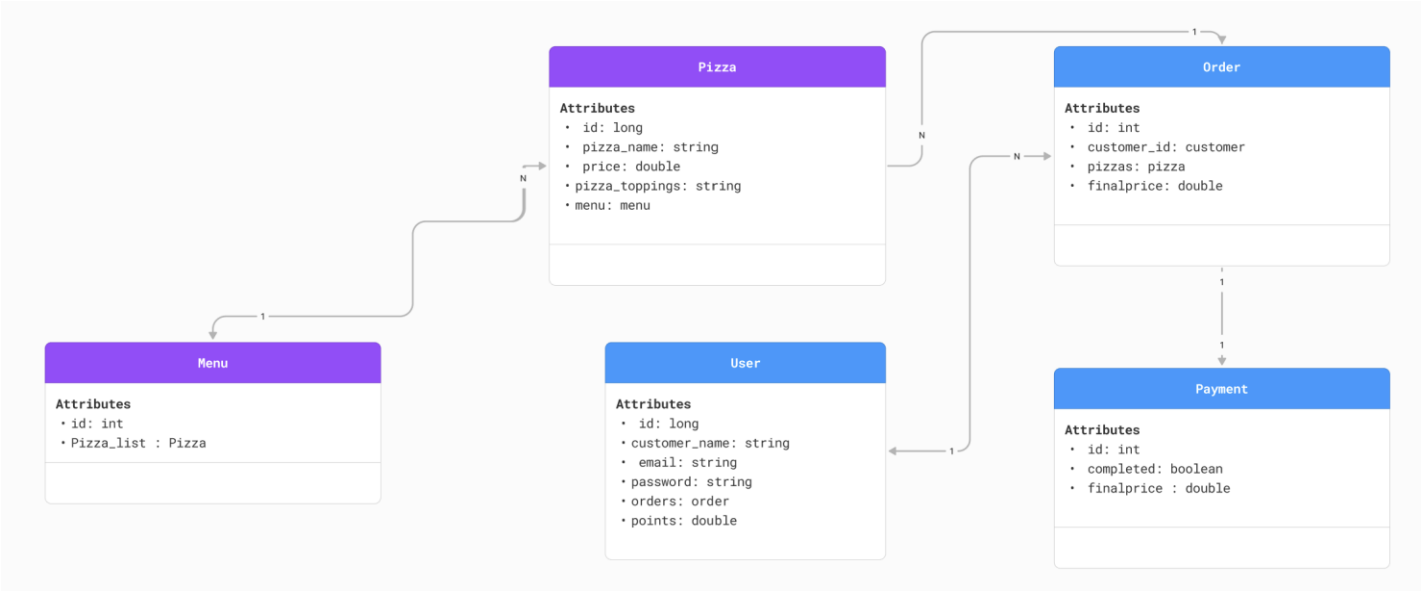
- Latest Prototype design
- Tried to keep it as close as possible to the planned design





Domain Design

The ch.fhnw.pizza.data.domain package contains the following domain objects / entities including getters and setters:



Business Logic

Based on the UC-5 [Place an order], we have created all the necessary measures to create, update, retrieve and delete the order through the OrderService. The main methods that we have implemented for this are:

- 1.Finding an order by the order ID.
- 2. To add an order using the JSON format
- 3. To update the order using the ID to set a new final price due to the discount features.
- 4. To delete the order by the order ID.

To get all the orders made by a specific user. In addition, we also needed a method to make sure that only the orders of the currently logged in user are shown and not those of anyone else. So for this purpose we have a method to get the current user through the UserService.

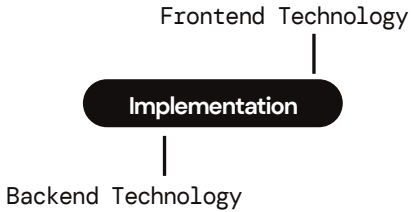
Path: [`/api/order"`]

Method: `GET` , `POST`

Path: [`/api/order/{id}"`]

Method: `GET` , `PUT` , `DELETE`

The rest of the API documentation is provided in the Swagger endpoint. The default Swagger UI page is available at /swagger-ui.html. Since we deployed the application using Render, it can be accessed directly from this link: https://pizzeria-project.onrender.com/swagger-ui/index.html


Frontend Technology
Implementation
Backend Technology

Backend Technology

Framework

- Spring Boot

Dependencies

- **Spring Boot**
- **Spring Data**
- **Java Persistence API (JPA)**
- **H2 Database Engine**

Setup

- **Initialization**

Spring Initializr used to bootstrap the application

- DB:

```
<dependency>
                        <groupId>com.h2database</groupId>
                        <artifactId>h2</artifactId>
                        <scope>runtime</scope>
</dependency>
```

- SWAGGER:

```
<dependency>
   <groupId>org.springdoc</groupId>
   <artifactId>springdoc-openapi-starter-webmvc-ui</artifactId>
   <version>2.3.0</version>
</dependency>
```

- OAuth2 (for token based authentication):

```
<dependency>
          <groupId>org.springframework.boot</groupId>
          <artifactId>spring-boot-starter-oauth2-resource-
server</artifactId>
</dependency>
```

Frontend Technology

Budibase Goal

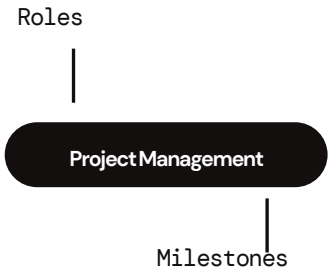
- **Objective**

Show a demo of the running application and its connection to the backend.

- **Approach**

Used sitemap and backend structure to decide on the views.

- **Main Views:**
  - Home Page
  - Login Page
  - Menu Page
  - Profile Page
  - Order Page
  - Payment Confirmation Page
  - About Us Page


Roles
Project Management
Milestones

Project Management

Team Division

- Divided the Team into two parts, as Jibin is more experienced in the Software Development background, he happily accepted the role of Backend, while the rest of the team worked on the frontend.

- **Backend**

Jibin Mathew Peechatt

- **Frontend**

Leon Bytyqi, Jevoen Jenifar, and Marko Jurcevic

- **Credit**

Devid Montecchiari and Charuta Pandey for the template and Reference pizzeria set up.

Milestones

- **Analysis**

Scenario ideation, use case analysis, and user story writing.

- **Prototype Design**

Creation of wireframe and prototype.

- **Domain Design**

Definition of domain model.

- **Business Logic and API Design**

Definition of business logic and API.

- **Data and API Implementation**

Implementation of data access and business logic layers, and API.

- **Security and Frontend Implementation**

Integration of security framework and frontend realization.

- **Deployment**

Deployment of web application on cloud infrastructure.

Achievement

All milestones were successfully achieved during the project implementation.