Faculty of Computer Science and Engineering

Computer Science Department

[Menu Restaurant Application]

Introduction to Software Engineering Course

CS 281

S2 (2022-2023)

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Abstract

Chapter One: Introduction

1.1 Overview

Menu Restaurant App is a tablet based application that aims to replace the traditional menu system. To simulate technological innovations as it will lead to beneficial results on the operation performance. It also has a positive impact on customer satisfaction in the ease of using the menu, selecting orders, and completing the payment process with complete ease and high satisfaction.

1.2 Problem Definition

- To help the restaurants keep up with modern technology.
- To shorten the time of ordering & payment.
- To reduce human error as much as possible.
- To reduce restaurants costs.
- To provide a unique and convenient customer experience.

1.3 Description of Proposed System

An efficient application that helps to cut the time of order & payment for both employees and customers, and to provide a unique experience for the customers using the features provided for their convenience.

1.4 Process Model

Incremental model.

Because the business market is competitive and fast growing,therefore we need to work with changes very often.

Chapter Two: System Analysis

2.1 Domain Analysis

Our project is going to be similar to an existing application called Menu touch, for example:

1) The application will provide the user with restaurant's menu.
2) The application has separate categories for a variety of food.
3) The System will help the user and show the steps of ordering through a guided interface.

2.2 The Environment

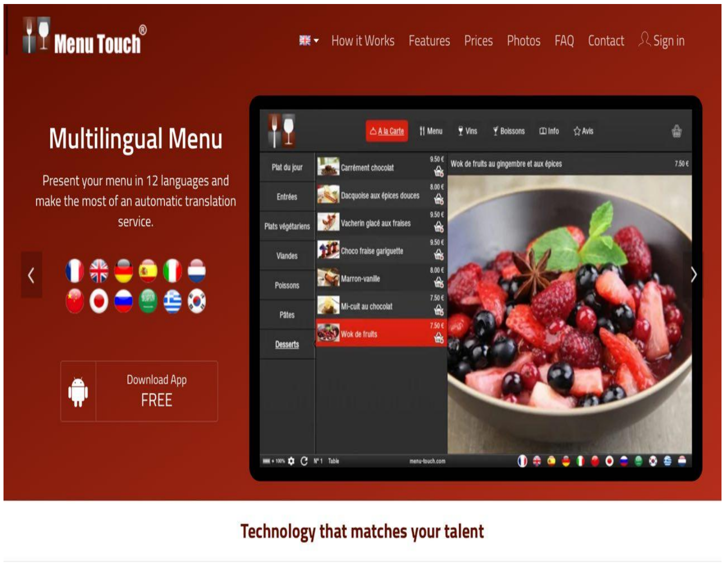
The application has the ability to work on IOS.

2.3 Customers and Users

Customers: restaurant managers & chain owners.

End users: anyone in the restaurant that has access to the application, including: restaurant's customer & restaurant's staff & Admin.

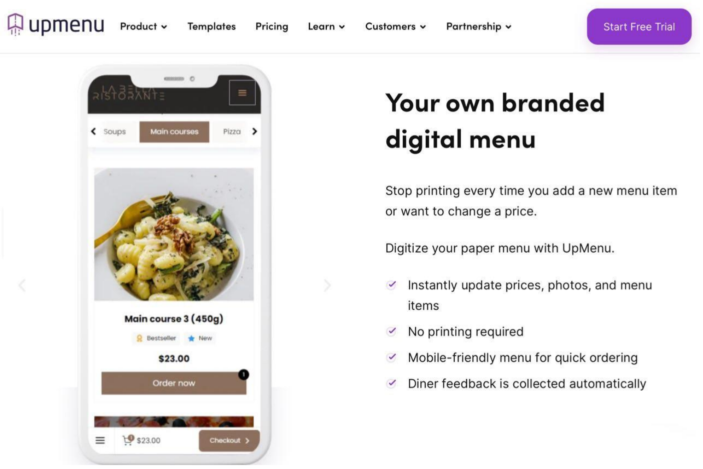
2.4 Existing Systems



Multilingual Menu

Present your menu in 12 languages and make the most of an automatic translation service.

Technology that matches your talent



Your own branded digital menu

Stop printing every time you add a new menu item or want to change a price.

Digitize your paper menu with UpMenu.

- Instantly update prices, photos, and menu items
- No printing required
- Mobile-friendly menu for quick ordering
- Diner feedback is collected automatically

1) Menu is displayed in the iPad's application.
2) Customer can choose order from the application's menu
3) Orders are sent to chef

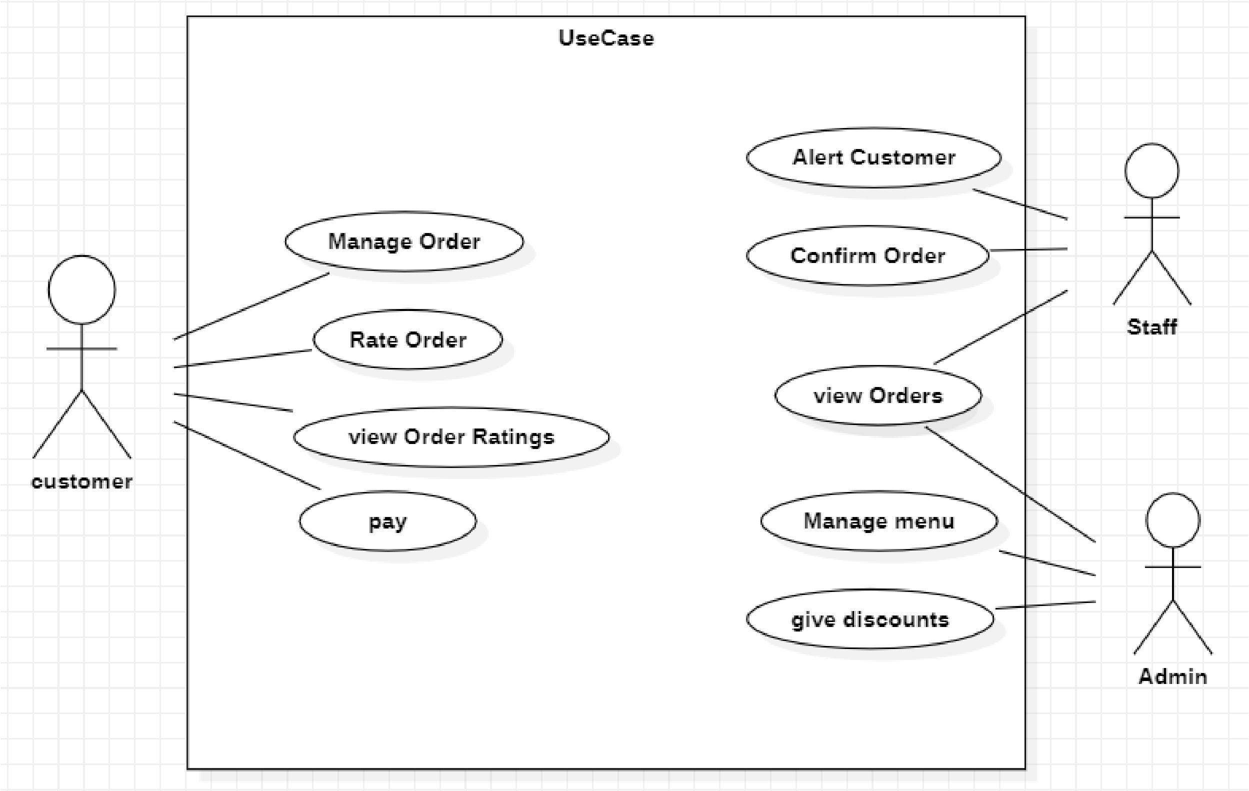
4) Chef confirms the order and notifies when the order is ready.
5) Waiter delivers order to the costumer.
6) Customers watch the process through application.
7) All done under admin’s supervision.

2.5 Use Case Model

2.5.1 Actors of the system

- Admin
- Customer
- Staff

2.5.2 Use Case Diagram



2.5.3 Use Case Descriptions

Use Case Name	manage menu
Description	allows the user to modify the restaurant's menu such as adding, removing and editing the prices of items in the restaurant's menu.
Actors	Admin

Use Case Name	Manage Order
Description	This case allows the user to view, add,edit and delete items from restaurant menu to order page
Actors	Restaurant customer.

Use Case Name	Rate order
Description	This allows the user to rate order.
Actors	Restaurant customer.

Use Case Name	Alert customer
Description	Allows the user to alert restaurant customers when their order is ready.
Actors	Staff

Use Case Name	Confirm order
Description	Allows user to confirm incoming order
Actors	Staff

Use Case Name	Give Discounts
Description	Allows the restaurant manager to edit the restaurant's menu prices.
Actors	Admin.

Use Case Name	View orders
Description	This allows users to view all orders from all restaurant’s customers.
Actors	Staff, Admin.

Use Case Name	View Order Ratings
Description	It allows the user to view previous opinions about the product and its quality.
Actors	Restaurant customer.

Use Case Name	Pay
Description	This allows the user to complete his payment request.
Actors	Restaurant customer.

2.5.4 Functional Requirements

1.1 restaurants customers should be able to view the menu.

1.2 restaurants customers should be able to manage their order (add and delete items)

1.3 staff members should be able to view all orders .

1.4 staff members should be able to confirm orders.

1.5 Admins should be able to manage menu (add and delete items and edit prices)

1.6 Admins should be able to view all orders.

2.5.5 Non-Functional Requirements

1.1 App should discard payment information (such as card information) after payment is confirmed. (Security)

1.2 App should always keep the history of all orders. (Reliability)

1.3 Restaurant should have an internet connection.

1.4 Restaurant should provide a charger to the tablets.

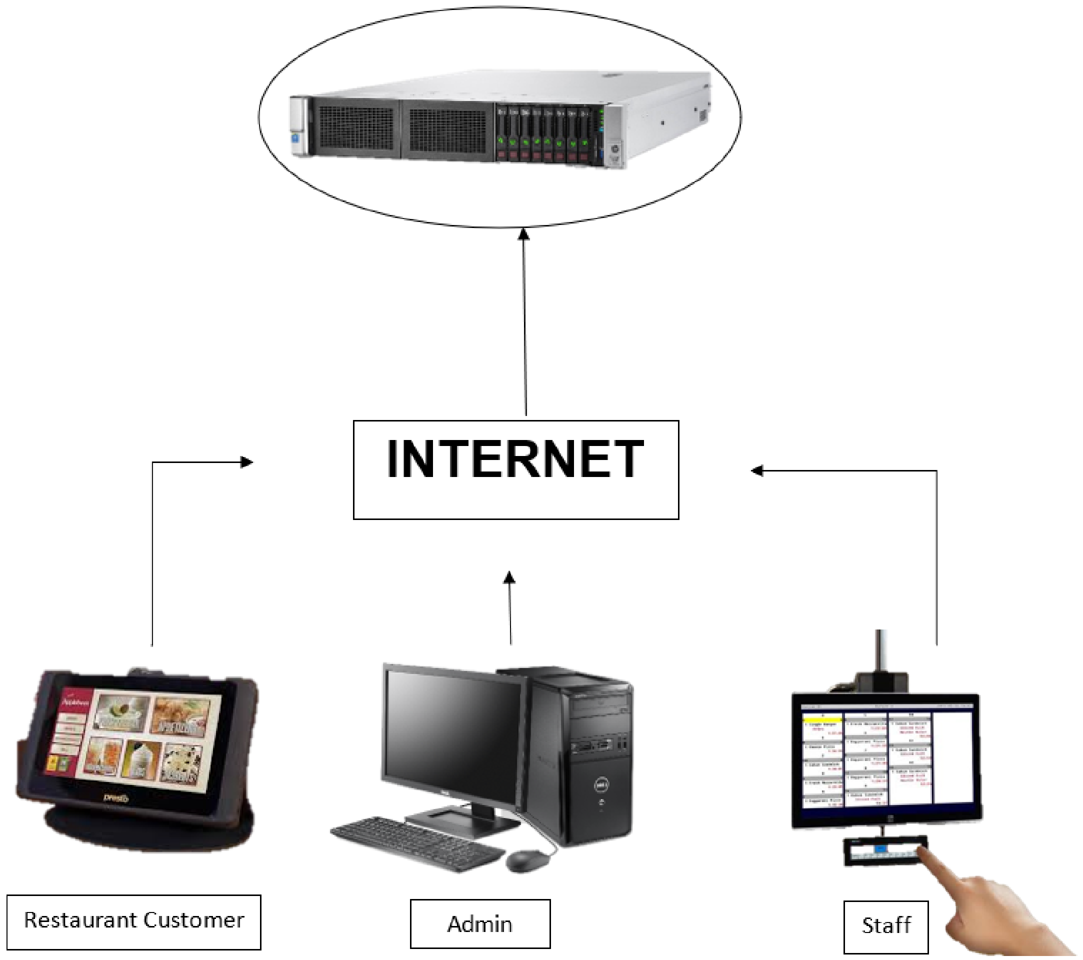
1.5 App source code should be easy to manipulate and change. (Maintainability)

1.6 tablet must run on IOS only.

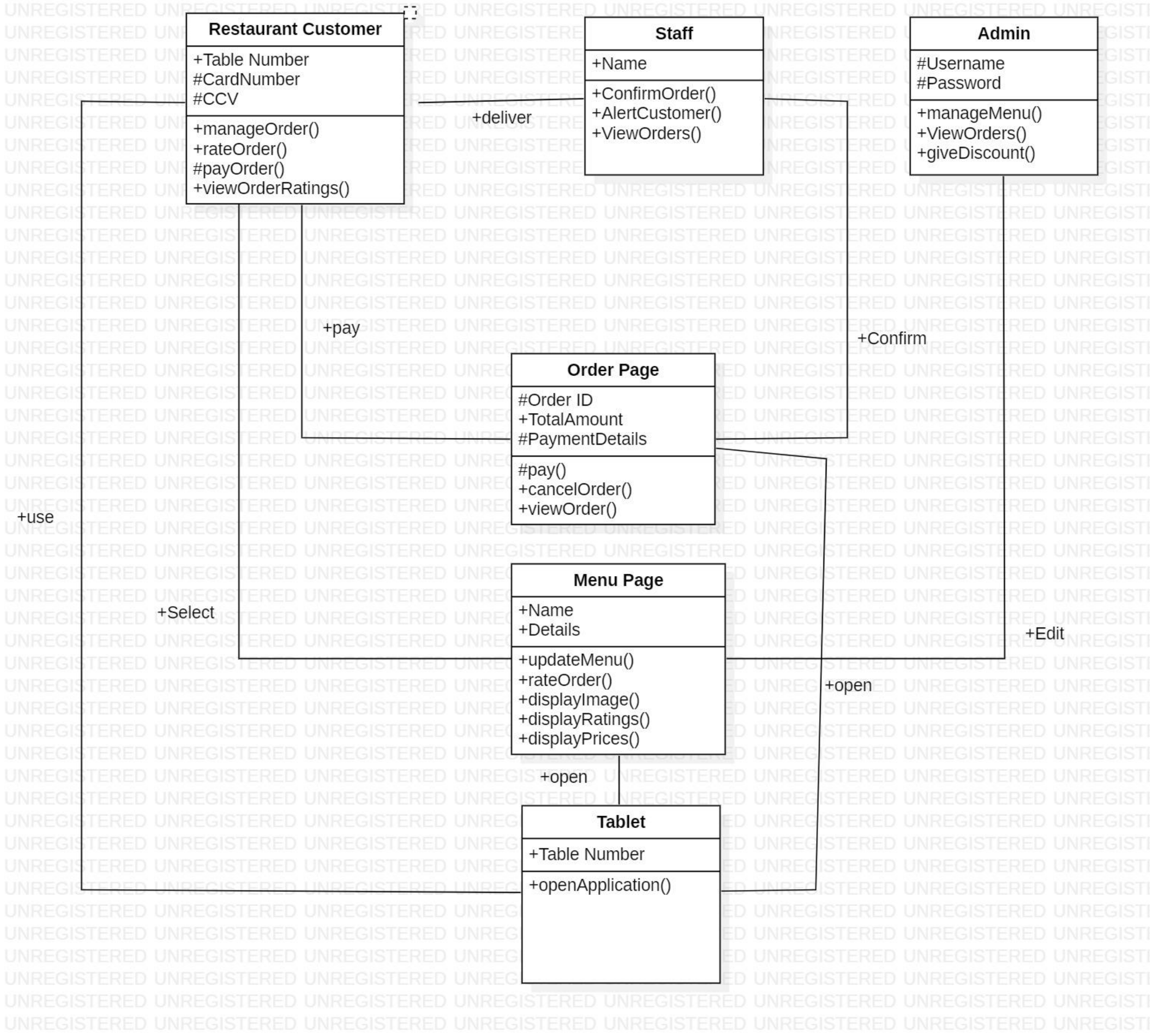
Chapter Three: System Design

3.1 System Architecture

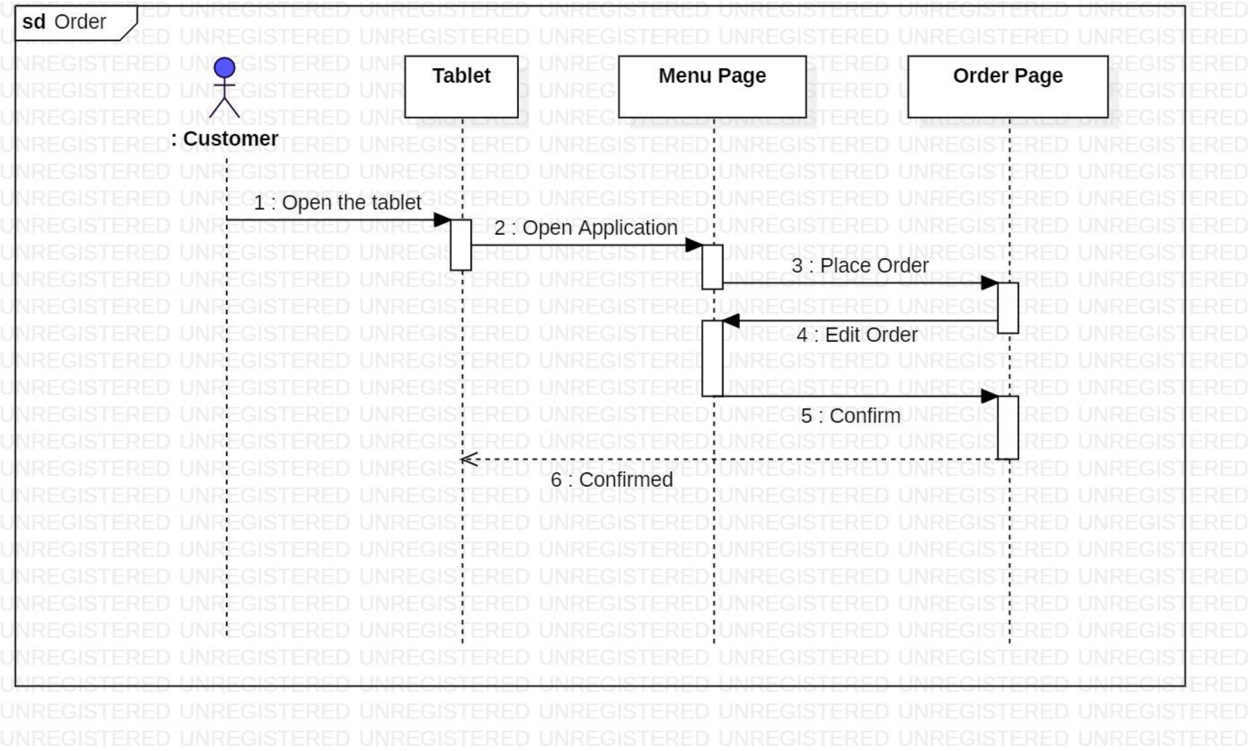
Client-Server

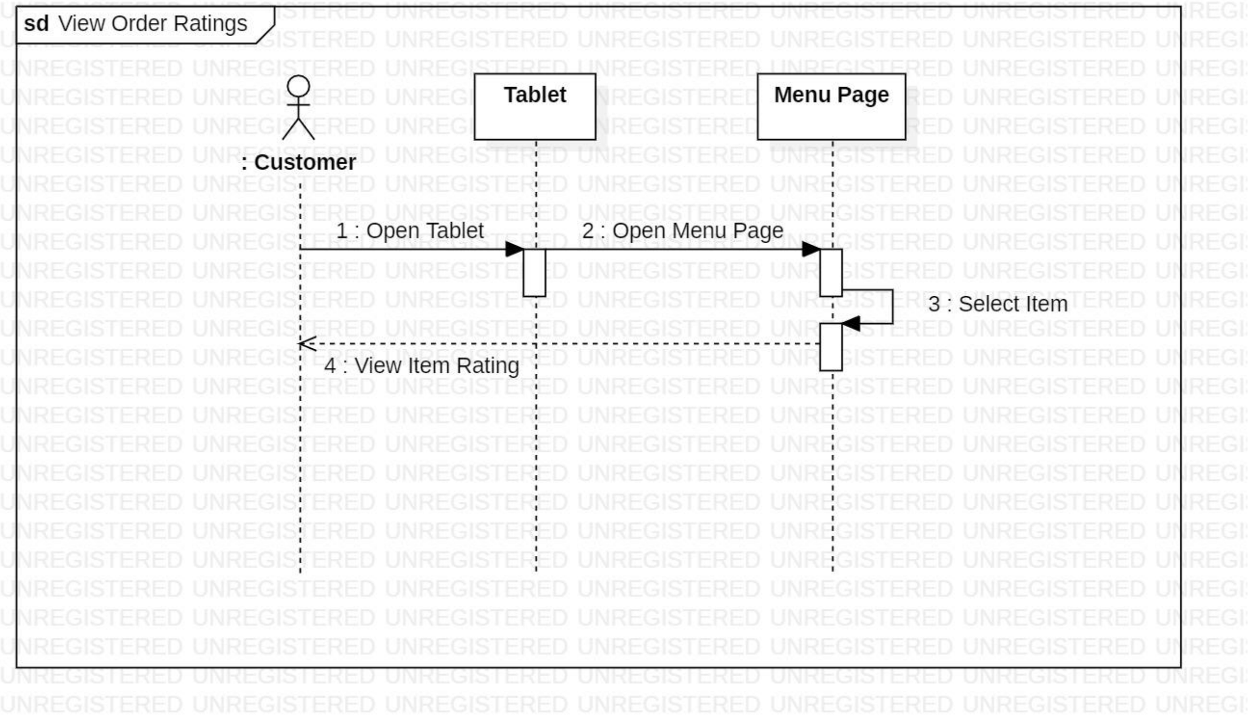


3.2 Class Diagram

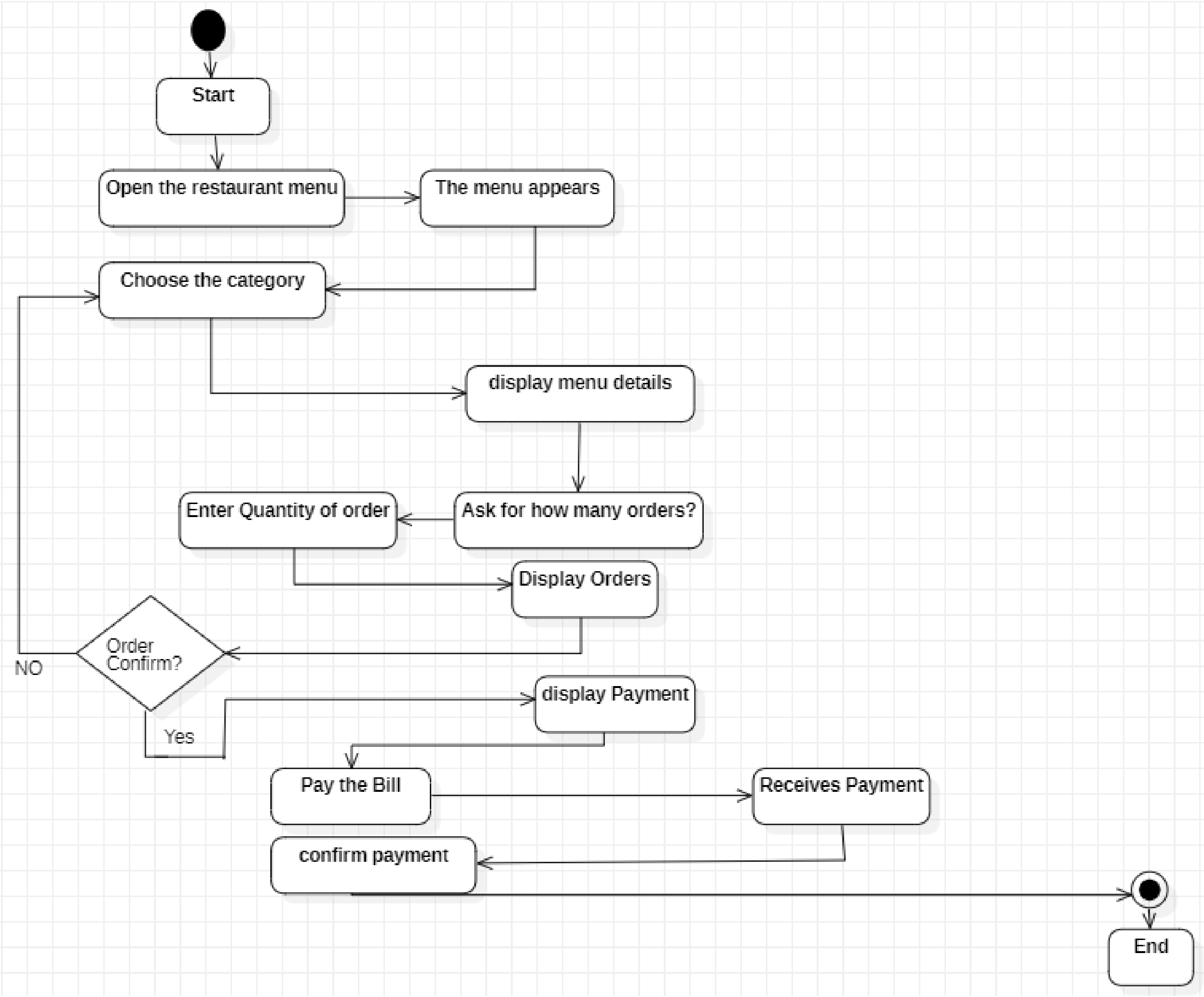


3.3 Sequence Diagrams

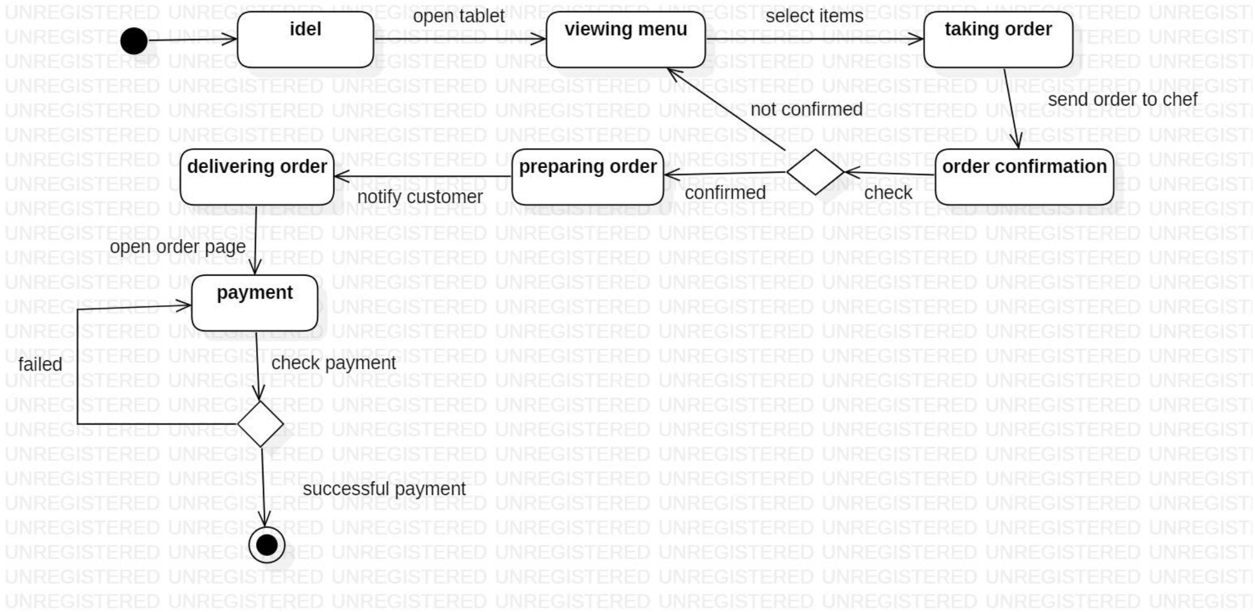




3.4 Activity Diagram



3.5 State Diagram



Chapter Four: Implementation (Optional)

4.1 User Interface Prototype

[Provide screenshots of the system's user interface that shows the main functions of the system]

Chapter Five: Testing (Optional)

5.1 Initial Test Plan

5.2 Test Cases

Chapter Six: Conclusion

6.1 Summary

This project described how different users such as restaurant customers, staff and admin interact with the menu application in order to fulfill different needs for each type. Also, it briefly shows how the application logic works.

6.2 Lessons Learnt

- Adding more actors & functionalities makes the work more hard and difficult, so it's better to start simple.
- Never depend on chapters as the only source for information, we needed to look at multiple studies and projects to understand how things work.

6.3 Challenges and Limitations

- Analyzing system requirements & system flow was not as easy as we thought.
- Diagrams were hard to work on because we didn't have a clear step-by-step manual to teach us how to create them correctly.

6.4 Future Work

In the future, we aspire to work on and understand different and interesting systems.