Palestine Technical University – Kadoorie

College of Engineering and Technology
Department of Computer Engineering

"Online Food Restaurant"

Prepared by :

Amjad Moayad Hamidi (202110401) (Dr. Osama Hamed) (sec 4)
Yousef Ahmad Sabra (202010787) (Dr. Nael Salman) (sec 1)
Mustafa Faris Hasan (202011176) (Dr. Nael Salman) (sec 1)
Osama Kamal Zahran (202010667) (Dr. Osama Hamed) (sec 2)

Supervised by:
Dr. Nael Salman

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Software Requirements Specification (SRS)

Abstract

Expending time and effort on going to the restaurant and the process of ordering food has become exhausting. Add to that the names of new foods for those who have not tried them, such as risotto. In our restaurant, there is a menu that contains many available meals that are renewed weekly, so we put a description under each meal of what it consists of in order to make it easier for the customer to choose the food that is appropriate for him and his taste.

All of this is available on our website. It is easy to use. There is a registration box, in addition to a list of the available food, accompanied by a description of it and the price as well. Through it, you can choose several orders in one order. For example, in one order, you choose a Mexican rice meal with half a piece of chicken, and it is done. Our website automatically calculates the price. You can cancel the entire process by pressing the return button. You can also cancel a specific order from within the order that contains many things that you requested by pressing the Drop button.

In addition to the process of final confirmation of the transaction, then once you click on it, the payment method will appear for you, either through Visa Card, PayPal, etc.

Therefore, our goal is to make our restaurant lively, convenient and accessible for all customers to provide comfort.

We have verified all standards in the online restaurant records system to make our platform world-class and obtain ISO certification to ensure reliability and safety.

إن قضاء الوقت والجهد في الذهاب إلى المطعم وعملية طلب الطعام أصبحت مرهقة. أضف إلى ذلك أسماء الأطعمة الجديدة لمن لم يجربها مثل الريزوتو. يوجد في مطعمنا قائمة تحتوي على العديد من الوجبات المتوفرة والتي تتجدد اسبوعيا، لذلك نضع تحت كل وجبة وصفا مما تتكون منه لكي نسهل على العميل اختيار الطعام المناسب له و ذوقه.

كل هذا متاح على موقعنا. سهل الاستخدام. يوجد خانة التسجيل بالإضافة إلى قائمة المواد الغذائية المتوفرة مصحوبة بوصف لها والسعر كذلك. ومن خلاله يمكنك اختيار عدة طلبات في طلب واحد. على سبيل المثال، في طلب واحد، تختار وجبة أرز مكسيكي مع نصف قطعة دجاج، ويتم ذلك. موقعنا يقوم تلقائيا بحساب السعر. يمكنك إلغاء العملية بأكملها بالضغط على زر العودة. كما يمكنك إلغاء طلب معين من داخل الطلب الذي يحتوي على العديد من الأشياء التي طلبتها من خلال الضغط على الزر اسقاط.

بالإضافة إلى عملية التأكيد النهائي للمعاملة، فبمجرد الضغط عليها ستظهر لك طريقة الدفع إما عن طريق الفيزا كارد أو باي بال وغيرها.

لذلك، هدفنا هو جعل مطعمنا حيويًا ومريحًا وسهل الوصول إليه لجميع العملاء لتوفير الراحة لهم.

لقد قمنا بالتحقق من جميع المعايير في نظام سجلات المطاعم عبر الإنترنت لجعل منصتنا ذات مستوى عالمي والحصول على شهادة الايزو لضمان السلامة والموثوقية.

Worked by Team Leader: Amjad Hamidi
(Google Translation)

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1. Introduction

1.1 Purpose

This section outlines the purpose of the online food ordering system. The system aims to provide a seamless and efficient experience for customers to order food from a restaurant through an online platform. It seeks to enhance customer satisfaction by reducing waiting times, providing a user-friendly interface for browsing the menu, and facilitating easy payment options. Additionally, the system is intended to help the restaurant manage orders more effectively, improve sales through better accessibility, and gather data on customer preferences to tailor services better.

1.2 Document Conventions

This part of the SRS will specify the standards and conventions used throughout the document. For example, terms like "User" might be defined to refer to any registered customer, while "Admin" refers to the restaurant managers and staff who administer the system. It could also set out the formatting rules or the use of specific notation for diagrams and flowcharts, ensuring consistency across the documentation.

1.3 Intended Audience And Reading Suggestions

The intended audience section clarifies who should read the document and what they can expect to find useful. It typically suggests that project managers, developers, and testers will benefit most from the comprehensive technical details, while stakeholders like restaurant owners might focus on sections outlining business benefits and features.

1.4 Project Scope

This section details the scope of the system, including what the system will do and any services it will integrate with, like delivery services or social media for promotional purposes. It will clarify the boundaries of the project, such as geographic or operational limits, and highlight the main objectives the system aims to achieve.

1.5 References

Here, all references used in creating the SRS will be listed, such as technical standards, design templates, or previous project reports. This helps maintain the credibility of the document and provides a resource for further investigation.

- 830-1984 - IEEE Guide for Software Requirements Specifications.
- Software Requirements Specification document with example - Krazytech.com
- https://www.geeksforgeeks.org/software-engineering/

2. Overall Description

2.1 Product Perspective

This describes how the online food ordering system fits into the existing business process and interacts with other systems, such as the restaurant's existing POS (Point of Sale) system or inventory management system. It may include a system interface diagram or data flow diagrams to show the integration points.

2.2 Product Features

A detailed list of product features provides a high-level overview of the system's functionality, such as user registration, menu customization, order tracking, and feedback mechanisms. Each feature is typically accompanied by a brief description of its functionality and its importance to the overall system.

Here are the main features included in Online Food Restaurant system:

- User registration and login
- Menu browsing
- Item selection and order placement
- Payment processing
- Order tracking
- Administrative interface for menu and order management

2.3.User Classes And Characteristic

Different user roles and their interaction with the system are described here. For example, customers, restaurant staff, and system administrators might have different access levels and capabilities within the system, requiring different interfaces and functionalities.

For example : system users must be able to see and display a list of Main Foods, such as : Fry Chicken Rice , Chicken Brochette , and Sandwiches such as: Oven Packed Pasta , Shawarma , Le Mexican Hot Pizza and Crispy Chicken Burger, etc. In addition, appetizers such that : French Fry , Chicken Nuggets and Chicken Nachos , etc.

Also Soups like : Chicken Vegetable Soup , Thai Soup and Chicken Corn Soup , etc. And all kinds of drinks: soft drinks, such as Coca-Cola, Fanta, and others, and energy drinks, such as XL, Red Bull, and others.

The system will support two types of user privileges, Customer, and Admin. Customers will have access to functions such as adding the product to the cart, removing it, etc., and the admin will have access to the customer and the functions that he can perform (mentioned a little earlier).

- **CUSTOMER FUNCTIONS.**
  • Login to Restaurant's website.
  • View Menu.
  • Search for an item he wants.
  • Contact with Restaurant's staff
  • Add an item to cart.
  • Submit order.
  • Cancel order.
  • Payment method.
  • Return/Refund money he paid.

- **ADMINISTRATIVE**
  • Add Info.
  • Modify Info.
  • Add menu.
  • Modify menu.
  • Modify Info.
  • View order.
  • Contact with customer.
  • Manage payment.
  • Change order status.

Every customer can do these functions 24 hours a day. The customer gets a five percent discount if the fees exceed one hundred dollars , and it is doubled twice if the fees reach two hundred dollars, and so on.

2.4.Operating Environment

This specifies the technical environment in which the system will operate, including hardware, operating systems, and network requirements. It is critical for ensuring compatibility and performance standards are met.

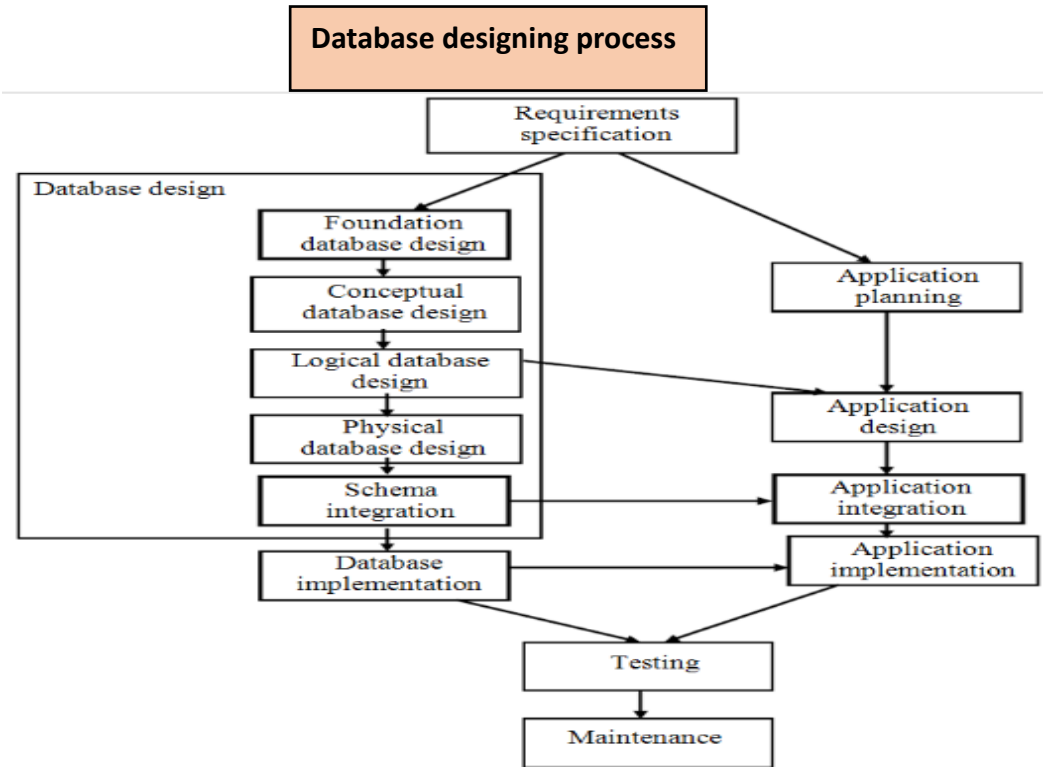
The operating environment for the Online Food Restaurant System is as listed below.

- distributed database.
- client/server system.
- Operating system: Windows and Mac.
- database: sql+ database.
- platform: vb.net/Java/PHP.

2.5.Design and Implementation Constraints

Constraints such as budget, time, technology choices, regulatory compliance, and user accessibility considerations are discussed here. This section helps stakeholders understand the limitations under which the system must be developed and operated.

- Responsive design for mobile and desktop , by using the global schema, fragmentation schema, and SQl commands for queries/applications, then implement the database.
- Secure payment gateway integration.



2.6. USER DOCUMENTATION

Plans for user manuals, help guides, and FAQs are outlined here. This documentation will assist users in navigating the system effectively and resolve common issues without needing direct support.

2.7. ASSUMPTION AND DEPENDENCIES

Key assumptions about the project environment and dependencies on external factors are identified. This might include assumptions about user behaviour or external dependencies like third-party service availability.

- Users must have an internet connection to be able to use the application.
- Users must have a valid payment method.

3. SYSTEM FEATURES

Each major feature of the system is described in detail, including how users will interact with the feature, the data it will handle, and its importance to the overall functionality of the system.

• DESCRIPTION and PRIORITY

The online food delivery system works to reserve the customer's order starting with the menu that contains all the main and secondary items with prices appropriate to the needs of the community. This project has become necessary and required for every restaurant, seeking to provide the customer's requirements in comfort and without him personally attending the restaurant, in addition to saving time, as he can book from there wherever he is.

• STIMULUS/RESPONSE SEQUENCES

- Search for the items offered
- Displaying the available items and the possibility of booking and confirming it by the customer
- Cancel an existing Reservation

3.1 Functional Requirements

3.1.1 User Registration and Login

- The system shall allow users to create an account.
- The system shall allow users to log in using their credentials.

3.1.2 Menu Browsing

- The system shall display a list of food categories.
- The system shall allow users to browse food items within categories.

3.1.3 Item Selection and Order Placement

- The system shall allow users to add items to the cart.
- The system shall allow users to specify quantities.
- The system shall allow users to review the order before placing it.

3.1.4 Payment Processing

- The system shall integrate with a secure payment gateway.
- The system shall confirm the order upon successful payment.

3.1.5 Order Tracking

- The system shall allow users to track the status of their order.

3.1.6 Administrative Interface

- The system shall allow admins to update menu items.
- The system shall allow admins to view and manage orders.

4. EXTERNAL INTERFACE REQUIREMENTS

4.1 USER INTERFACES

Describes the look and feel of the graphical user interfaces, including screen layouts, buttons, and menu styles. Mock-ups or wireframes are often included to give a clearer idea of the design.

4.2 HARDWARE INTERFACES

Specifies any physical devices the system will need to interact with, such as servers, network switches, or specialized POS hardware.

- Windows or Mac.
- A browser that supports CGI,HTML & JS.

4.3 SOFTWARE INTERFACES

Lists all interactions with other software systems, including APIs, databases, and external services like payment gateways.

Following are the software used for the Online Food For Restaurant application.

Software used	**Description**
Operating system	We have chosen Windows or Mac operating system for its best support and user-friendliness.
Database	• To add and cancel orders , and add or delete items from cart • To update and modify Info, Menu , Payment and Order Status • And save the Available Item Menu, User Account to log in, we have chosen SQL+ database.
VB.Net	To implement the project, we have chosen Vb.Net language for its more interactive support.

4.4 COMMUNICATION INTERFACES

Details the protocols and standards for data exchange with other systems, ensuring compatibility and security in data transmissions.

5 Non-Functional Requirements

5.1 Performance Requirements

Defines the performance benchmarks the system must meet, such as processing speeds, response times, and handling of simultaneous user sessions.

Here an implementation of the Online Food Restaurant :

A) E-R DIGRAM:

An Entity-Relationship Diagram (ERD) is a visual representation of data models and relationships between entities in a system. It is a type of diagram used in database

design to show the relationships among entities and their attributes. An ERD typically includes the following components:

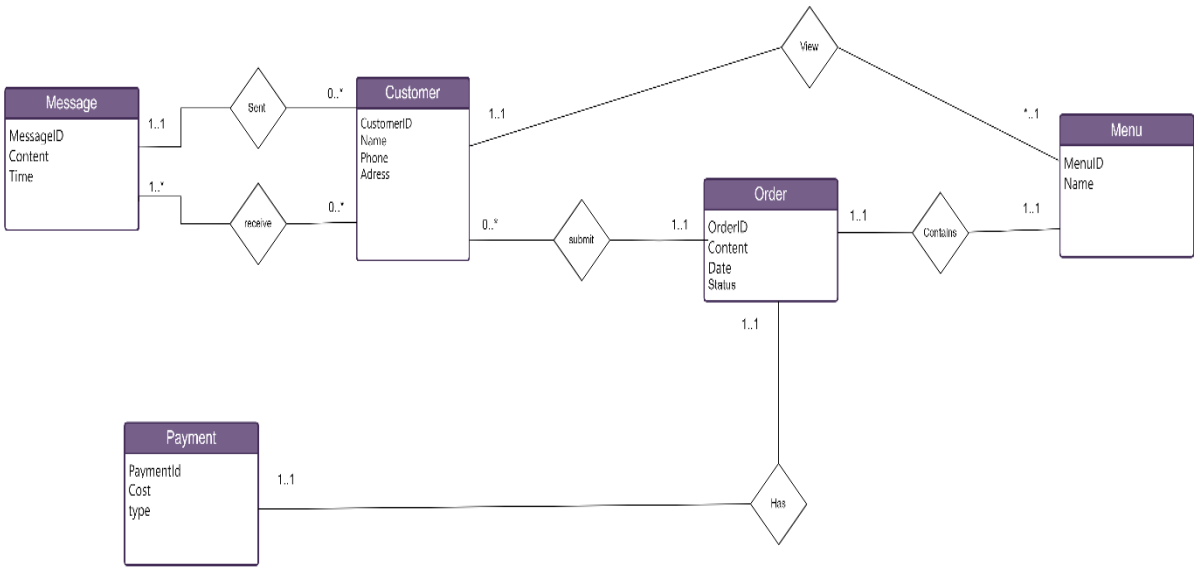
Entities: Represented as rectangles with the name of the entity written inside, they represent objects or concepts in the system.

Attributes: Represented as ovals or rectangles, they describe the characteristics of an entity, such as its name, type, and value.

Relationships: Represented as lines between entities, they describe how the entities are related to one another. The most common relationships are one-to-one, one-to-many, and many-to-many.

ERDs are useful for visualizing and designing databases. They provide a way to understand how data is related to each other and how it should be organized in a database. ERDs can be used to develop an initial data model, refine the data model as the project evolves, and communicate the data model to others involved in the project.

Here the diagram shows the ER diagram of the Online Food Restaurant :



B) NORMALIZATION:

- **Normalization** is the process of minimizing **redundancy** from a relation or set of relations. Redundancy in relation may cause insertion, deletion, and update anomalies. So, it helps to minimize the redundancy in relations.
- **Normal forms** are used to eliminate or reduce redundancy in database tables.

- **Normalization of DBMS:** In database management systems (DBMS), normal forms are a series of guidelines that help to ensure that the design of a database is efficient, organized, and free from data anomalies. There are several levels of normalization, each with its own set of guidelines, known as normal forms.
- **Normal forms help to reduce data redundancy**, increase data consistency, and improve database performance. However, higher levels of normalization can lead to more complex database designs and queries. It is important to strike a balance between normalization and practicality when designing a database.

5.2 SAFTEY REQUIRMENTS

Outlines measures to ensure the physical and data safety of users, such as emergency log-off processes or backup systems to prevent data loss.

5.3 Security Requirements

Security requirements focus on protecting the system and its data against unauthorized access, data breaches, and other cyber threats. This includes authentication mechanisms, user access controls, data encryption, and adherence to privacy laws and standards. The section also addresses the need for regular security audits and updates to safeguard against new vulnerabilities.

5.4 SOFTWARE QUALITY ATTRIBUTES

Describes the desired characteristics of the software that affect its performance and maintainability. Attributes like reliability, availability, scalability, and usability are discussed, emphasizing how they will be achieved and measured. The section also includes plans for ensuring the adaptability of the system to future needs and technologies.

- **AVAILABLITY :** The Menu should be available on demand as any customer are doing advance ordering.
- **CORRECTNESS :** The Menu should display the available items and the process of confirming the order for the customer should go smoothly**.**
- **MAINTAINABLITY :** The web application must support regular updates to ensure compatibility with the latest web technologies , Bug fixes, and security patches. Such that the Menu list display only the available items and can't choose Items are not available.
- **USABILITY :**

1. The system shall be easy to navigate.
2. The system shall provide a consistent user experience across devices.

3. The system must be able to accommodate the largest number of customers at the same time without delay in loading for transportation or order confirmation.

- **Speed** : Speed of access and review of different pages, The speed of obtaining the service in order to log into the system.
- **Application interface** :
    1. System screens should be easy to use and user friendly.
    2. Clarity and sequencing of menus and different pages.
    3. The use of appropriate colors that suit the psyche of users.
    4. There is no complexity in the displayed screens.
- **Precision :** The system must perform its requirements with a high level of accuracy.
- **Reliability :** The application should be reliable to perform the business, i.e. when user perform some action it should be acknowledged with confirmation.

Each section of the SRS should be detailed enough to provide clear guidance for the design and development of the system, as well as comprehensive enough to cover all aspects necessary for successful implementation and operation.

6 SYSTEM MODELS

6.1 USE CASE DIAGRAM :

A use case diagram is a type of UML diagram that shows the interactions between actors (users or external systems) and a system. It provides a high-level view of the system's functionality and the ways in which users can interact with it.

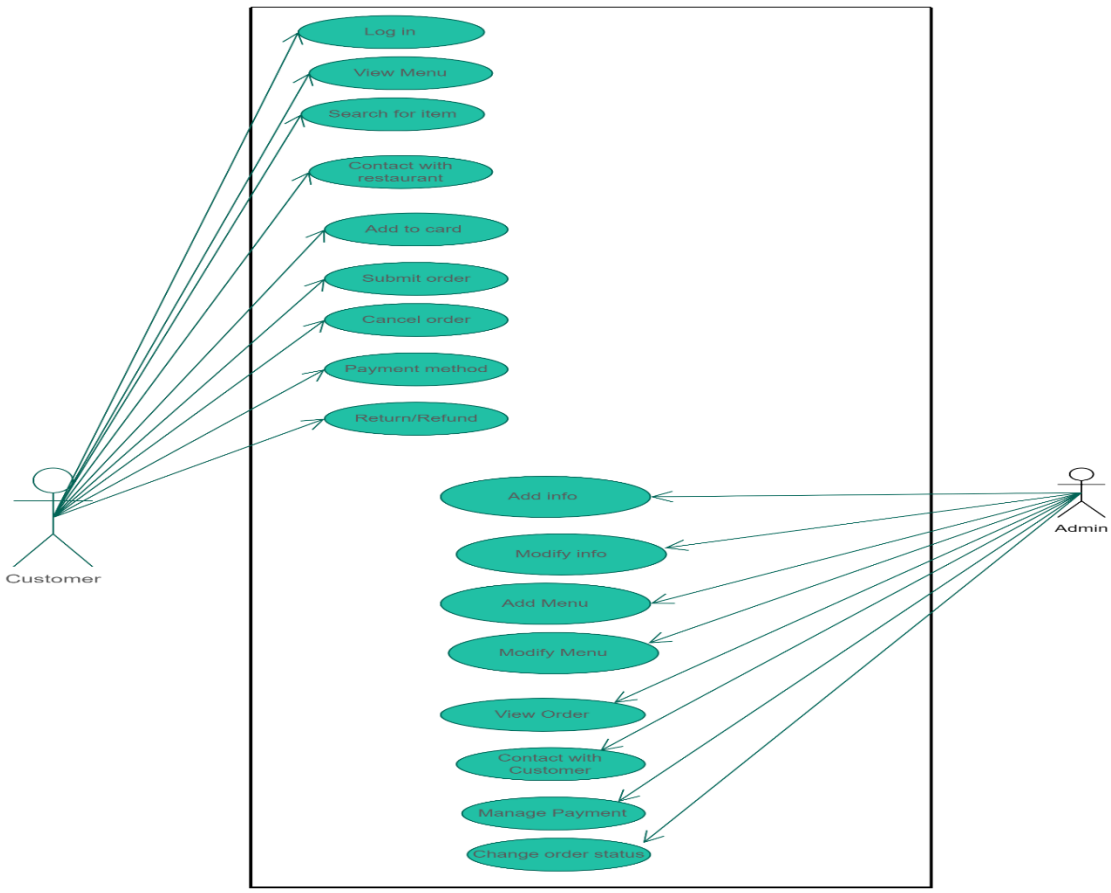
The main components of a use case diagram are:

Actors: Represented as stick figures, they are the users or external systems that interact with the system.

Use Cases: Represented as ovals with the name of the use case written inside, they describe a specific action or task that the user can perform in the system.

Relationships: Represented as lines between actors and use cases, they describe the interactions between them. The most common relationship is the association relationship, which shows that an actor is associated with a specific use case.

Use case diagrams are useful for identifying the requirements of a system and for communicating the system's functionality to stakeholders. They provide a visual representation of the system's functionality and help to identify potential problems or areas of improvement.



6.2 SEQUENCE DIAGRAM

A sequence diagram is a type of UML diagram that depicts the interactions between objects or components in a system. It illustrates the sequence of messages exchanged among them to achieve a particular functionality or use case.

Sequence diagrams are made up of the following elements:

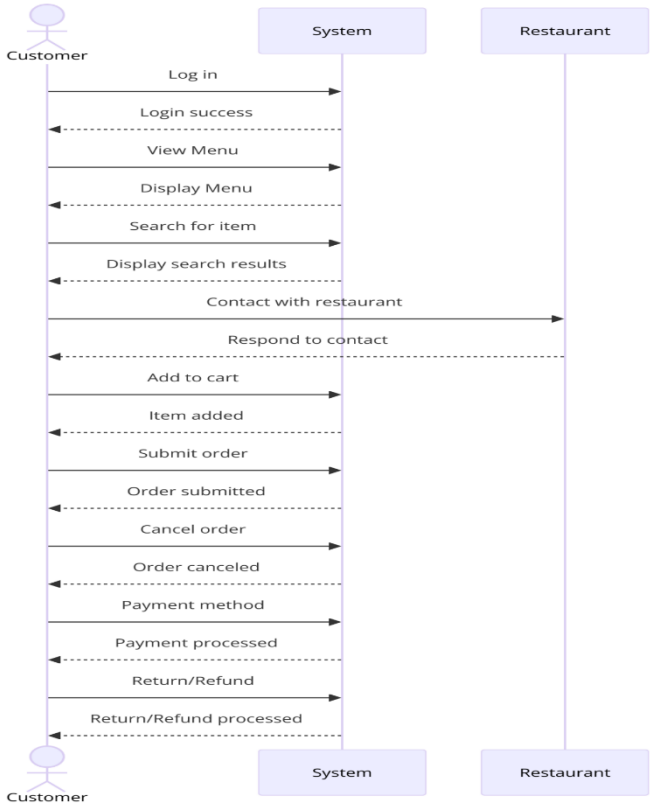
Actors: The entities outside the system that interact with it, represented by stick figures.

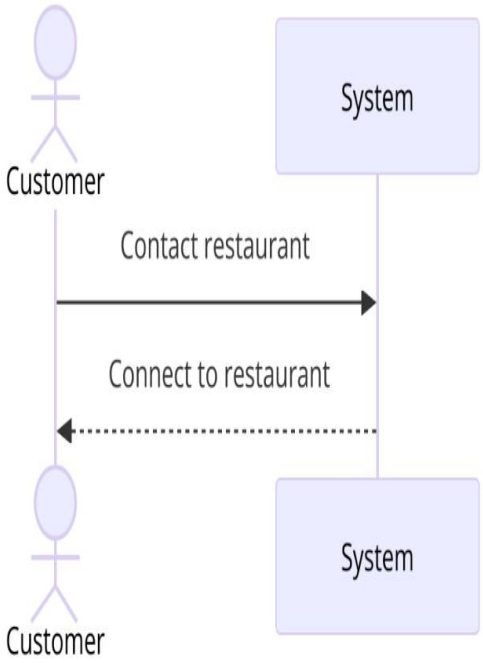
Objects: The entities within the system that exchange messages, represented by rectangles.

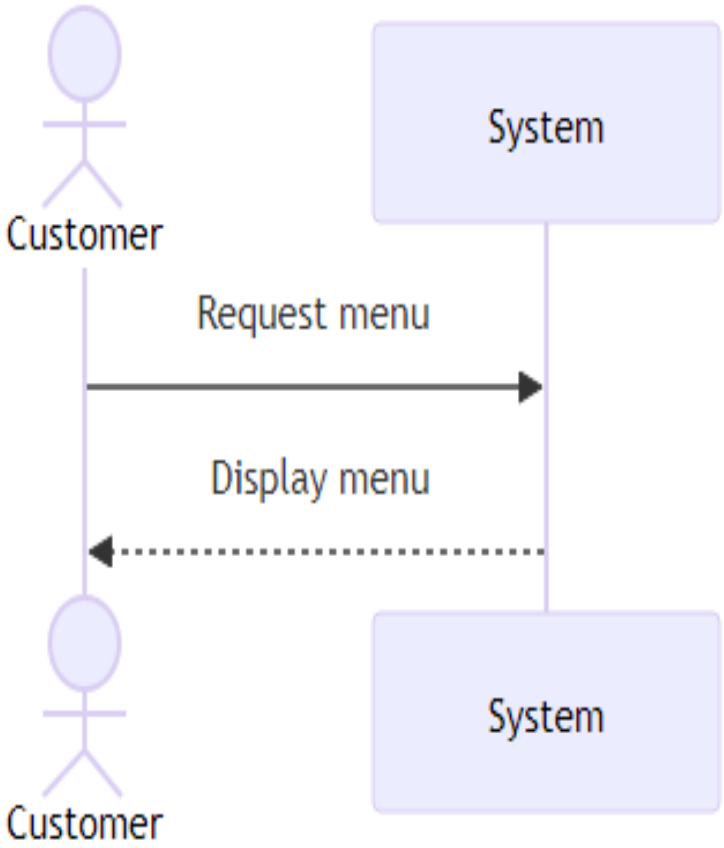
Lifelines: Vertical dashed lines that represent the lifespan of an object component during the sequence.
Messages: Horizontal arrows that represent the communication between objects or components.

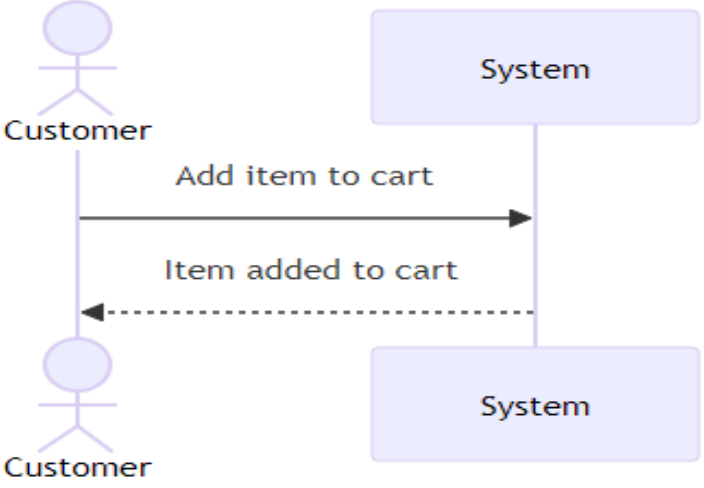
Activation bars: Rectangles that represent the time an object or component is performing an action.

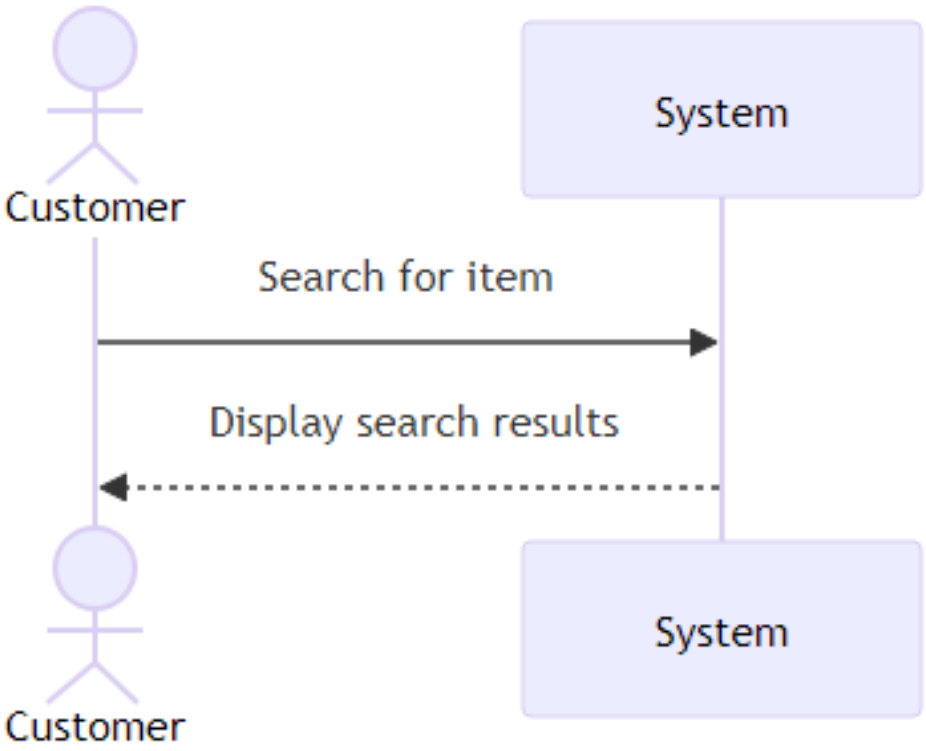
Sequence diagrams are useful for visualizing and validating the logic of a system or use case. They help to identify potential errors or misunderstandings in the interactions between objects or components. They are also helpful for documenting the sequence of actions that must be taken to achieve a particular functionality.

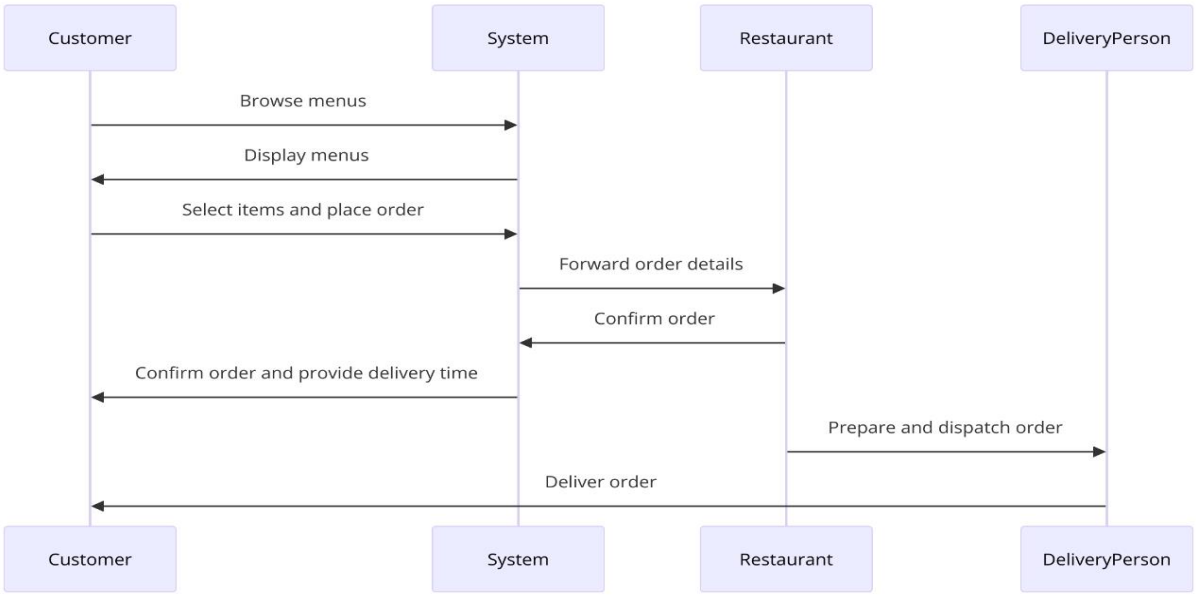



System
Customer
Contact restaurant
Connect to restaurant
System
Customer


System
Customer
Request menu
Display menu
System
Customer


System
Customer
Add item to cart
Item added to cart
System
Customer





6.3 ACTIVITY DIAGRAM:

6.3 ACTIVITY DIAGRAME

An activity diagram is a type of UML diagram that shows the flow of control or the flow of work among different activities in a system. It is used to model the behavior of a system, from the perspective of a user or an external system.

Activity diagrams consist of the following components:

Activities: Represented as rounded rectangles, they describe a task or an operation that is performed in the system.

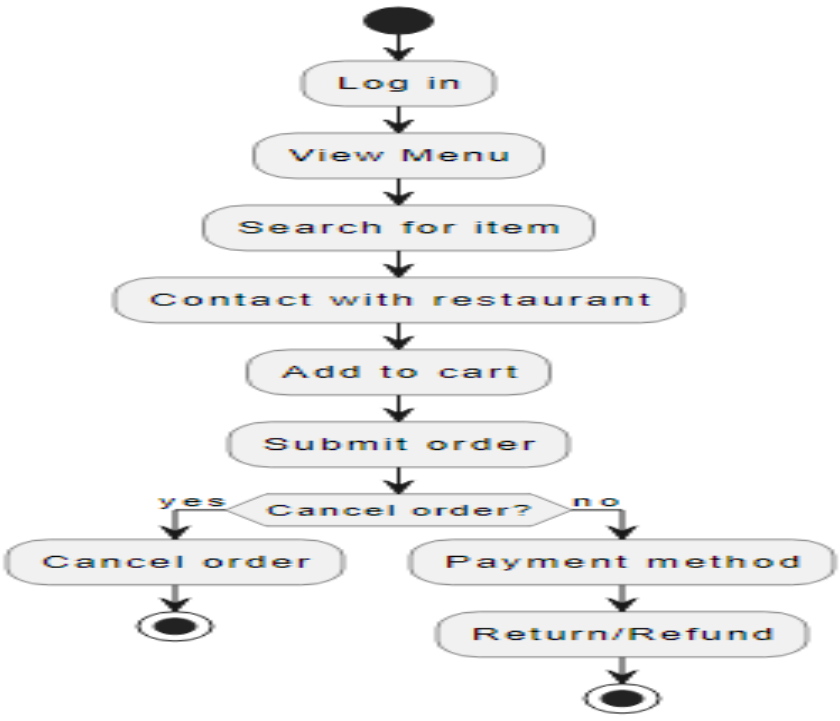
Transitions: Represented as arrows, they show the flow of control or the flow of work between activities.

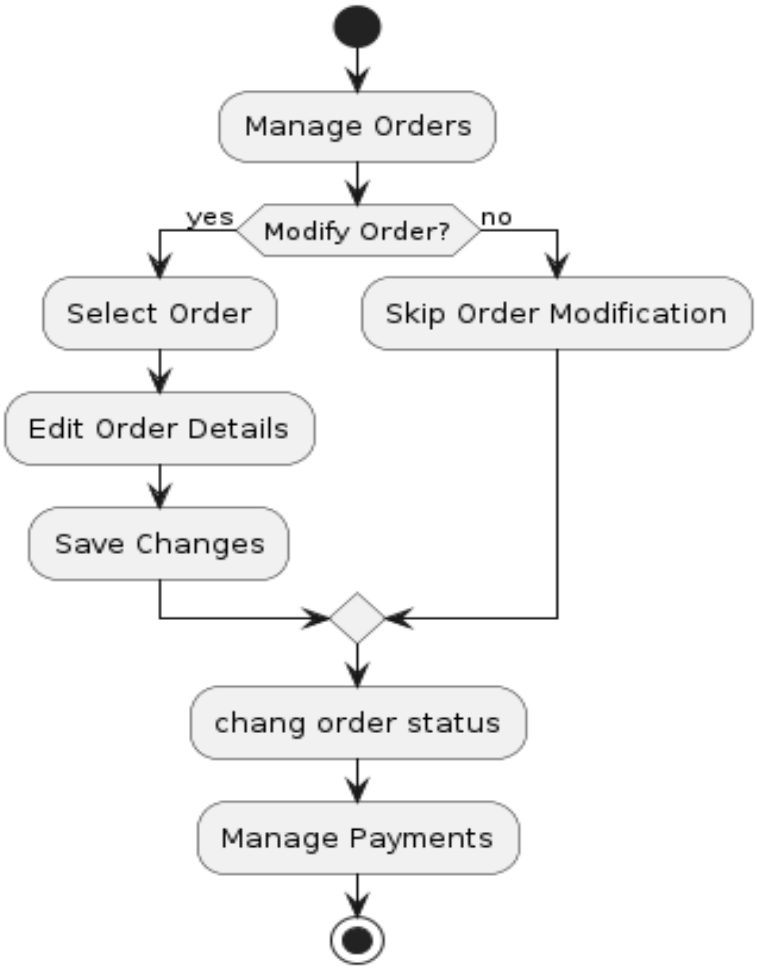
Decision nodes: Represented as diamonds, they represent a decision point in the process flow, where the control flow can take different paths based on a condition.

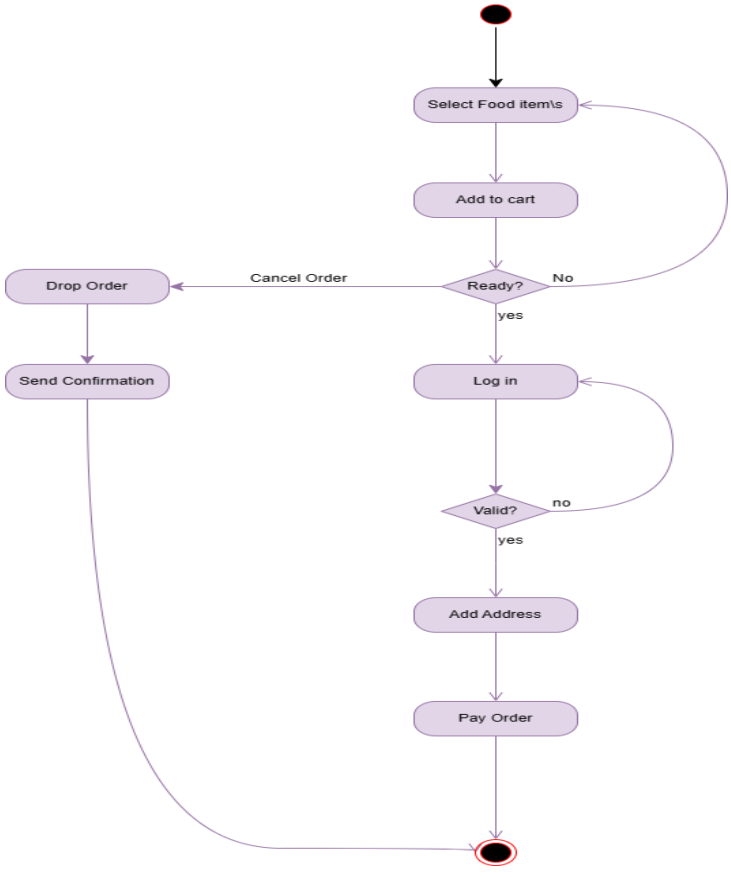
Fork and join nodes: Represented as a horizontal bar with one incoming and multiple outgoing arrows (fork) or multiple incoming and one outgoing arrow (join), they are used to split the process flow into parallel paths and then merge them back.

Swimlanes: Represented as vertical or horizontal rectangles, they are used to group activities according to the actors or systems that perform them.

Activity diagrams are useful for modeling the workflow or business processes in a system. They provide a clear visualization of the process flow, making it easier to understand and analyze the behavior of the system.




Manage Orders
Modify Order?
yes
no
Select Order
Skip Order Modification
Edit Order Details
Save Changes
chang order status
Manage Payments


Select Food item\s
Add to cart
Ready?
No
Cancel Order
Drop Order
yes
Send Confirmation
Log in
Valid?
no
yes
Add Address
Pay Order

6.4 CLASS DIAGRAM: A class diagram is a type of UML diagram that shows the static structure of a system by modelling its classes, their attributes and methods, and the relationships among objects. It typically includes the following components:

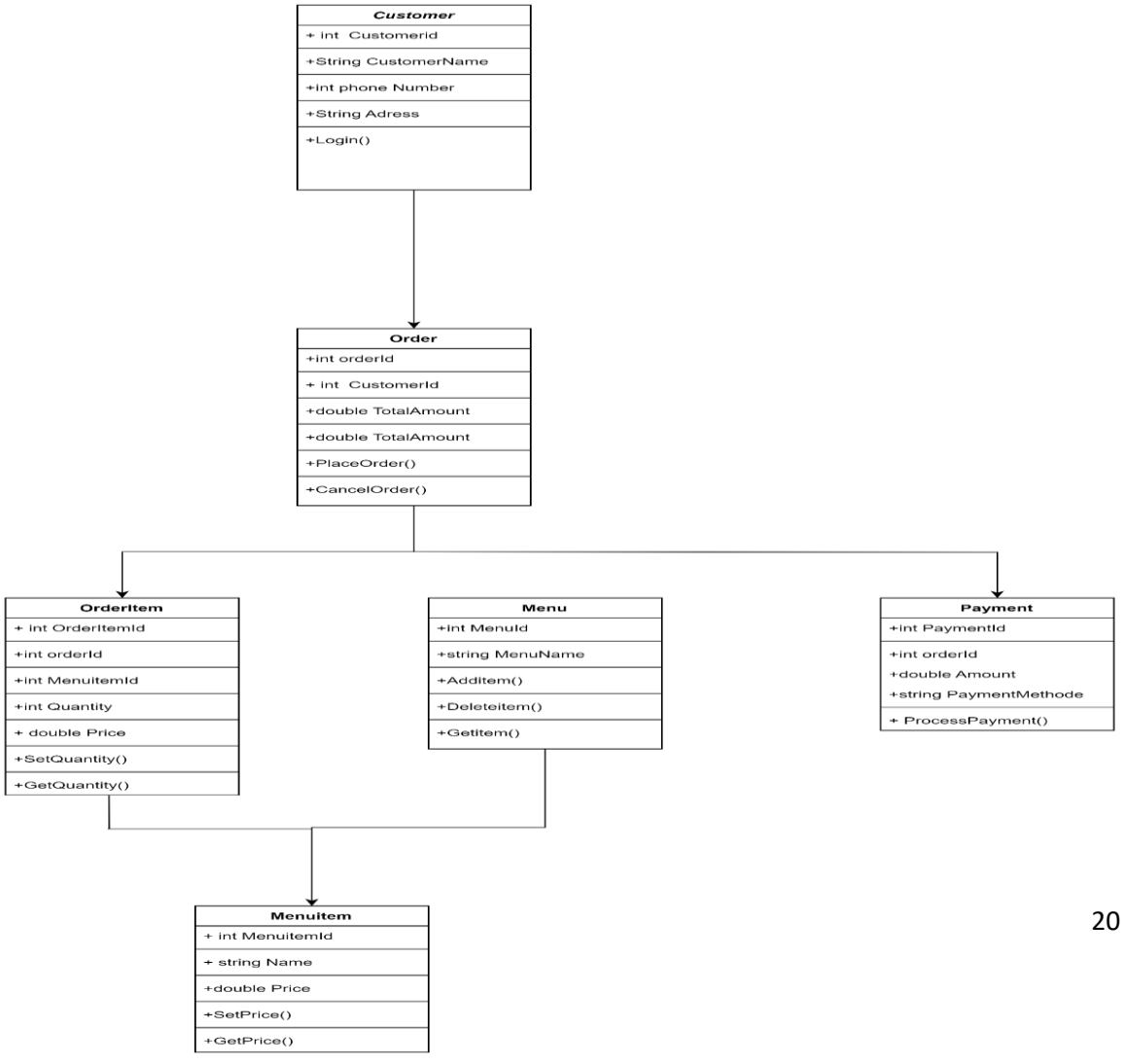
Classes: Represented as rectangles with the name of the class written inside, they define the properties and behavior of objects in the system.

Attributes: Represented as ovals or rectangles, they describe the characteristics of a class such as its name, type, and visibility.

Methods: Represented as rectangles with the name of the method written inside, they define the behavior of a class by describing the actions it can perform.

Relationships: Represented as lines between classes, they describe how the classes are related to one another. The most common relationships are inheritance, association, aggregation, and composition.

Class diagrams are useful for designing and documenting object-oriented systems. They provide a high-level view of the system's structure, making it easier to understand and communicate about the system's design.



Conclusion :

In conclusion, the Online Food Ordering System is designed to streamline and enhance the process of ordering food from a restaurant through an intuitive online platform. By providing a user-friendly interface, customers can easily browse the menu, place orders, and make payments, all from the comfort of their homes. The system also allows for efficient order management by the restaurant staff, ensuring that orders are processed quickly and accurately.

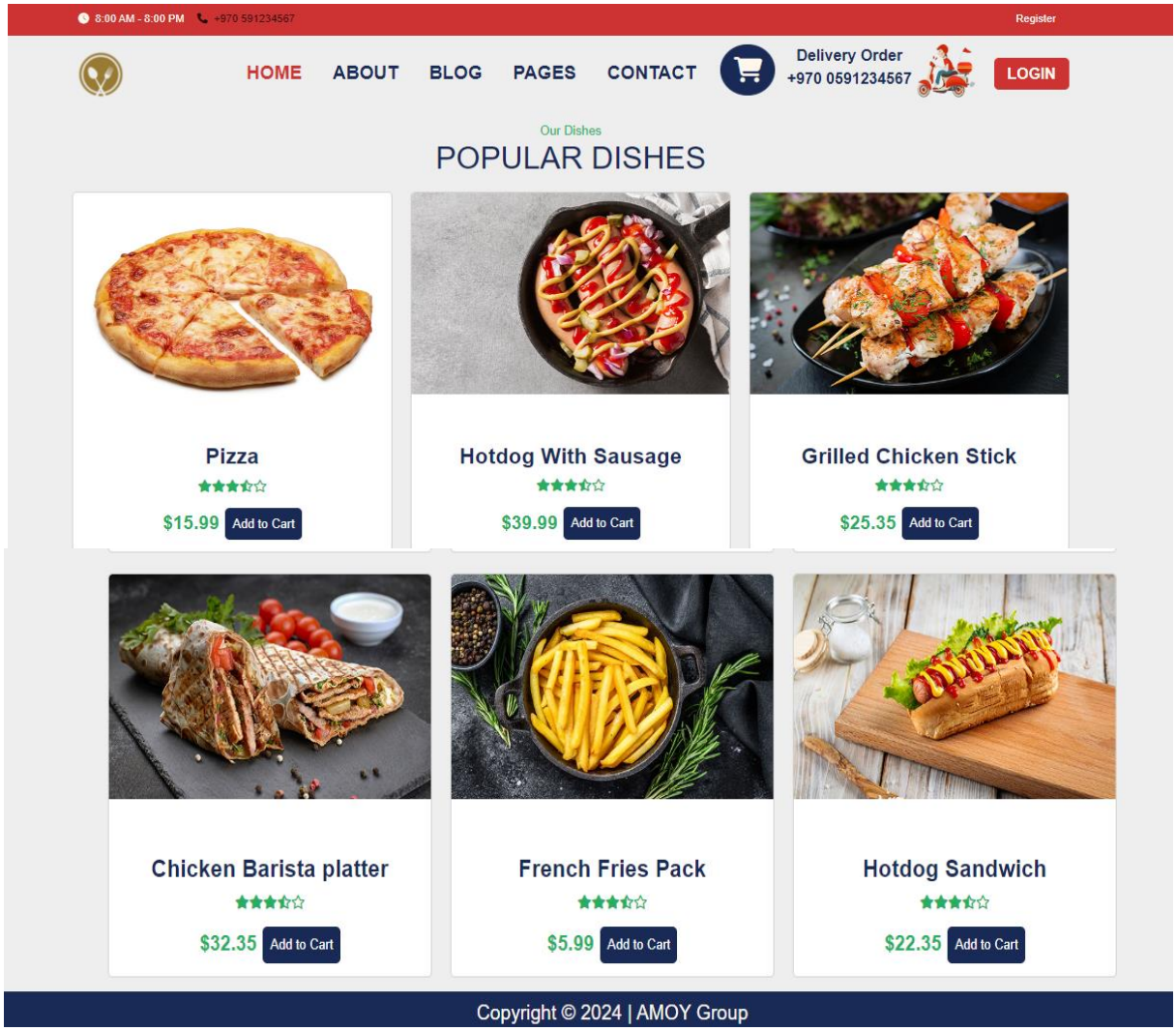
The system's design prioritizes convenience and accessibility, aiming to reduce the time and effort required for customers to enjoy their meals. With features such as detailed meal descriptions, automatic price calculations, order cancellation options, and multiple payment methods, the system caters to a wide range of customer needs and preferences.

Furthermore, the implementation of robust security measures and adherence to industry standards ensures that customer data is protected, and the system operates reliably. The goal is to create a seamless and enjoyable dining experience that meets the highest standards of quality and safety, ultimately leading to increased customer satisfaction and loyalty.

By leveraging modern technologies and adhering to best practices in software development, the Online Food Ordering System sets a new benchmark for efficiency and user experience in the restaurant industry. The system's comprehensive features and thoughtful design make it a valuable tool for both customers and restaurant operators, fostering a more dynamic and responsive dining environment.

Implementation

UI


8:00 AM - 8:00 PM
+970 591234567
Register
HOME
ABOUT
BLOG
PAGES
CONTACT
Delivery Order
+970 0591234567
LOGIN
Our Dishes
POPULAR DISHES
Pizza
$15.99
Add to Cart
Hotdog With Sausage
$39.99
Add to Cart
Grilled Chicken Stick
$25.35
Add to Cart
Chicken Barista platter
$32.35
Add to Cart
French Fries Pack
$5.99
Add to Cart
Hotdog Sandwich
$22.35
Add to Cart
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+970 591234567

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8:00 AM - 8:00 PM Everyday except monday

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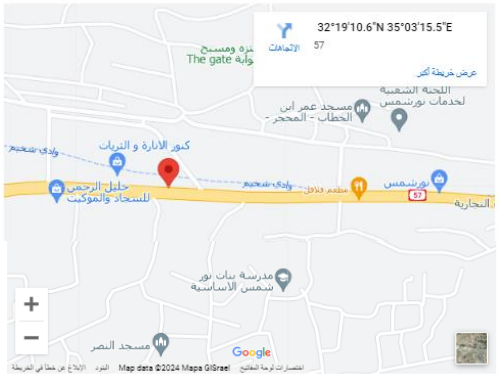
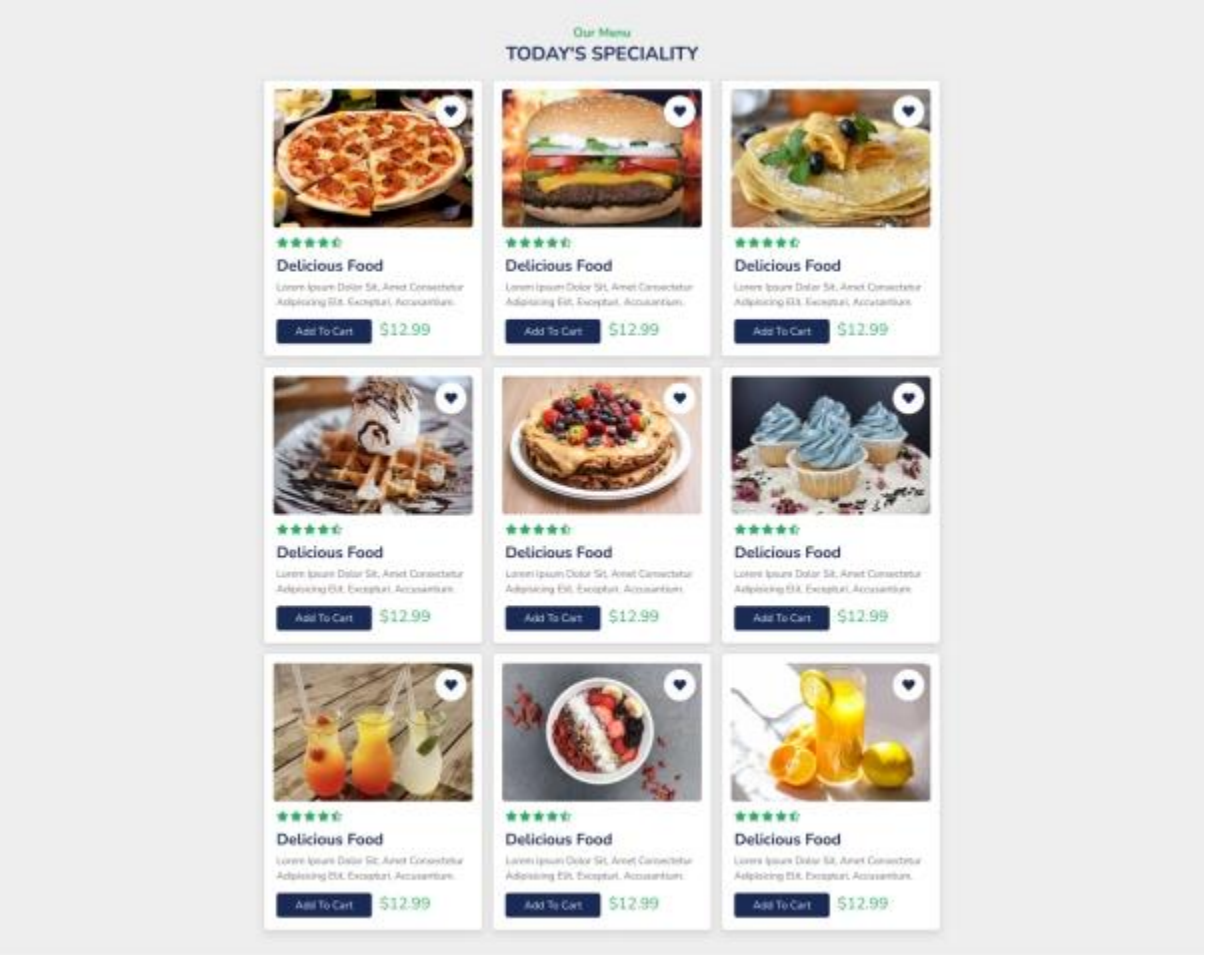


Our barnches

Robert Copper
Al-manarah street, Ramallah, Palestine
8:00 AM - 8:00 PM +970 9876543
Click to view on Google Map

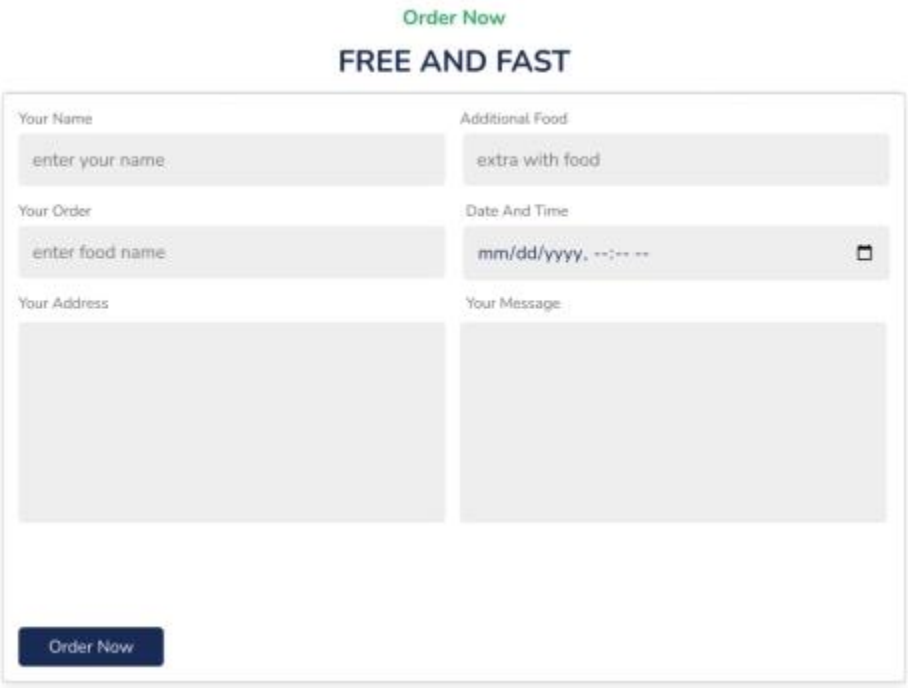
Mark Reed
Jerusalem street, Nablus, Palestine
8:00 AM - 8:00 PM +970 1346798
Click to view on Google Map

James Bond
Alnaqorah street, Salfit, Palestine
8:00 AM - 8:00 PM +970 1234567
Click to view on Google Map


Our Menu
TODAY'S SPECIALITY
Delicious Food
Add To Cart
$12.99

A chicken burger is a popular type of sandwich made from cooked chicken meat, which can be grilled, fried, or roasted. It typically includes toppings such as lettuce, tomato, onion, pickles, and various sauces like mayonnaise or mustard, all enclosed in a soft bun. Chicken burgers are a healthier alternative to beef burgers due to their lower fat content and are enjoyed by people looking for a tasty yet lighter meal option.

Pizza is a beloved dish originating from Italy, consisting of a round, flat base of dough topped with tomato sauce, cheese, and various other ingredients such as meats, vegetables, and herbs. Baked in an oven, pizza is known for its delicious, melty texture and versatile flavor combinations, making it a favorite among food lovers worldwide. It is often enjoyed in social settings, making it not just a meal but a communal experience.



GITHUB

https://github.com/Majhool/Software-Project?fbclid=IwZXh0bgNhZW0CMTAAAR0odt89_yk7IZUL7Oh0tIL3ratNWQzHHMw8gJKx1YcgkbbNhG9drCBsrcA

Our Team Description:

Team Member	Role	**Responsibilities**
Amjad Hamidi (202110401)	Group Leader	Assist in writing and organizing the SRS document including Abstract, create diagrams, Assist in database analysis
Yousef Sabra (202010787)	Main Writer and Database Analyst	Primary contributor to the SRS document, Analyze necessary databases, Test website performance, Main designer of website
Mustafa Hasan (202011176)	Contributor and Principal Analyst SRS Documents	Improve SRS document by adding diagrams, Coordinate meetings, Develop the website with knowledge in creating excellent websites
Osama Zahran (202010667)	Frontend Developer and Diagram Specialist	Adding diagrams to SRS document, Develop the user interface, focusing on the frontend aspects