

Online Food Ordering and Management System



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CERTIFICATE OF CORRECTIONS & APPROVAL

Certified that work contained in this thesis titled“ Online Food Ordering and Management System”,carried out by Asma Tabassum under the supervision of Ayesha Naseer for partial fulfillment of Degree of Bachelors of Electrical Engineering, in Military College of Signals, National University of Sciences and Technology, Islamabad during the academic year 2019-2020 is correct and approved. The material that has been used from other sources it has been properly acknowledged / referred.

Approved by

Supervisor

Date:_____

DECLARATION

No portion of work presented in this thesis has been submitted in support of another award or qualification in either this institute or anywhere else.

*Dedicated to my exceptional parents and adored siblings whose
tremendous support and cooperation led me to this wonderful
accomplishment.*

Abstract

You had heard a lot about online restaurant management systems and online food ordering system. There were also few web and mobile apps that were working great on online food ordering system concept. For example, you all know about food panda also about McDonald's new Smart Touch System orders (Customers can order food from the smart screen tablet menu available in McDonalds). These are some well-known and well working systems in Pakistan.

But what if you want food ordering and management system (both) as a single system specifically for your restaurant? Many restaurants is storing all of their data in manual way. They have huge number of customers daily. So because large number of customers, they need the help of some features so they can maintain and stores the records accurately. For managersit is difficult to view the tables, orders, kitchen, reception and the counter simultaneously. They need full-fledged software to maintain their day to day transactions, orders and also regular update on records, cash transaction and daily staffs reports.

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CHAPTER 1: INTRODUCTION

1.1 Project Title

“Online Food Ordering and Management System”

1.2 Problem Statement

Many restaurants is storing all of their data in manual way. They have huge number of customers daily, because of large number of customers, they need the help of some features so they can maintain and stores the records accurately. For managers it is difficult to view the tables, orders, kitchen, reception and the counter simultaneously.

They need full-fledged software to maintain their day to day transactions, orders and also regular update on records, cash transaction, daily staffs reports, customers feedbacks etc. In the existing system, entering all the details are done manually, it is taking lots of time and also there are chances for mistakes.

1.3 Scope

Online Food Ordering and management System is an application which will help restaurant tooptimized and control over their restaurants. For the waiters, it is making life easier because they don't have to go kitchen and give the orders to chef easily. For the management point of view, the manager will able to control the restaurant by having all the reports to hand and able to see the records of each employees and orders.

This application helps the restaurants to do all functionalities more accuratelyand faster way. Food Ordering System reduces manual works and improves efficiencyof restaurant.

1.4 High-level system components

Functional Requirements from customer panel of this system are as follows:

- ✓ Sign up (username, password, email)
- ✓ Log in (username, password)
- ✓ Categories (Pizza, Ice creams, Drinks etc.)
- ✓ List of Items to be ordered
- ✓ Finalizing Order
- ✓ Order Completed

✓ Logout

1.5 Hardware and Software Specification:

- Desktop Computer or Laptop (minimum 2gb RAM, minimum 100gb hard disk space, Windows Operating System, 64-bit system).
- Internet Availability.

1.6. Tools and technologies used:

- Eclipse
- Hibernate
- Xampp-control
- phpMyAdmin database
- Java, XML, My SQL
- tomcat

CHAPTER 2: FIRST DELIVERABLE

2.1. Introduction

First deliverable is all about planning and scheduling of project. This deliverable must contain following artifacts:

- a. Project Feasibility
- b. Project Scope
- c. Task Dependency Table
- d. Gantt Chart
- e. Tools and Technologies
- f. Vision Document
- g. Risk List
- h. Product Features

2.2. Project/Product Feasibility Report

When a project started, the first matter to establish is to assess the feasibility of a project or product. Feasibility means the extent to which appropriate data and information are readily available or can be obtained with available resources such as staff, expertise, time, and equipment. It is used as a measure of how practical or beneficial the development of a software system will be to your organization. This activity recurs throughout the life cycle.

There are many types of feasibilities:

- Technical
- Operational
- Economic
- Specification
- Information
- Motivational
- Legal and Ethical

2.2.1. Technical Feasibility

We can strongly say that it is technically feasible, since there will not be much difficulty in getting required resources for the development and maintenance of the system as well. All the resources needed for the development of the software as well as the maintenance of the system are available on the internet. As we require Microsoft Visual Studio 2017 Enterprise for web based application development that is the licensed product and my organization help me to purchase its license, another software is Android Studio which we will use for android application development and Microsoft SQL Server Management Studio that is also a licensed product and my organization bought it for. The main consideration should be on the study of available resources where the software is to be implemented. Here the system analyst evaluates the technical merits of the system giving emphasis on the performance, reliability, maintainability, and productivity.

2.2.2. Operational Feasibility

Evaluation of technical ability of the staff to operate the project is the main aim of operational feasibility. In this system we need two apps, one is android base and the other is web based, we use android app for customer use to order their food using a very simple but unique and effective and easy to understand interface, we use web application for managing staff to update their menu, check orders, generate bills etc. Its interface is also quite easy to understand. Therefore, we can say that our System is operationally feasible. Its user interface is quite easy to learn, any person with no knowledge of this system can also use this system efficiently because of its easy to learn interface.

2.2.3. Economic Feasibility

It will be an increased flexibility & efficiency of operation by eliminating redundant data entry in the stock logbook. Is the project possible, given resource constraints? It has to be developed system in-house due to resource limitations. Appropriate decision, increased monitoring of the new system and control due to access to up-to-date information. Cost and also error reduction and effective use of staff time. There will be an ultimate high quality services, increased output and input material and efficiency. I used the licensed products, such as Microsoft Visual Studio Enterprise and Microsoft SQL Server Management Studio, my organization help us to purchase the lifetime license key for these products. Other cost that can be included are as follows:

- ✓ The Management, IT Teams, and Employees.
- ✓ Training Personal.

- ✓ Consulting Cost.
- ✓ Facility Cost.
- ✓ Installing the System.
- ✓ Conversion of file.

2.2.4. Specification Feasibility

We need a system that can reduce cost and merge the online food ordering system and the touch ordering system newly introduced by McDonalds in Pakistan into single app. In addition, this system can provide ease to customers. Like if they have any questions in their mind they can ask the system to answer those questions just like asking question from a call center helpline. To summarize this, we need an Online Food ordering and management system from which we can order food either sitting on a table in restaurant or also can order food from home and can manage orders, menu, and billing. Therefore, the requirements of this system are as follows:

- Managing Food Panel.
- Managing Orders.

2.2.6. Information Feasibility

The feasibility of information must be assessed regarding its completion, reliability, and meaningfulness. All the information needed for this system can be easily available in restaurant because mainly we need restaurant menu details and all the data is based on it. We also need customer information but we cannot get it unless they themselves provide us that information by signing up in our system app. However, we will ensure the customer data safety as only the managing staff has access to that data. You need Customer information to deliver orders to their houses if you do not have that information then you will not be able to deliver food to customer. Therefore, we will have complete information once the customer signs up and that information can only be accessed by customer and managing staff, no one else can see that information. In addition, the information needed from customer is just their mobile no, name, and address so that restaurant staff can deliver food to them.

2.2.7. Motivational Feasibility

For motivational feasibility evaluation of the client staff regarding the motivation to perform the necessary steps correctly and promptly must occur. Our project provides Graphical User Interface (GUI). Managing Staff and Customers can easily operate

this application without any training. It will increase motivational level for everyone to use our project. In addition, we provide single platform to order for free home delivery and table order. Managing staff do not have to generate bill manually, as when order is placed bills will be automatically generated, due to GUI, managing staff can easily add, remove, or delete items from menu.

2.2.8. Legal & Ethical Feasibility

We make this application under the rules and regulations of country. Tools used in our projects are ethical and legal. All the tools used for the development of this system that need to be licensed, their license were purchased by our organization for us. Some software is open-source. Moreover, all the data use for the development of this system is ethically feasible; no unauthorized person can access that data without permission.

2.3. Risk List

During developing a project, many problems and risks may be occurring. We identified the problems of the system and their effective alternatives. Faculty members also help us to solve many problems. After many risks are analyzed, according to analysis supervisor and other member will identify improvement that can be to reduce the risks in future. We can handle risks more efficiently if we have full interest on online food ordering and management system.

- Bad management of budget.
- Unexpected events.
- Miss understanding among members.
- Unavailability of hardware in future.
- Less resource available.
- No internet connection

2.4. Product Features/ Product Decomposition

Functional Requirements from customer panel of this system are as follows:

- ✓ Sign up (username, password, email)
- ✓ Log in (username, password)
- ✓ Categories (Pizza, Ice creams, Drinks etc.)
- ✓ List of Items to be ordered
- ✓ Finalizing Order

- ✓ Order Completed
- ✓ logout

CHAPTER 3: Second Deliverable for Object Oriented Approach

3.1 Introduction:

Requirements engineering, we will discuss the appropriate mechanism for understanding what the customer wants, analyzing need, assessing feasibility, negotiating a reasonable solution, specifying the solution unambiguously, validating the specification and managing the requirements as they are transformed into an operational system. The task of capturing, structuring, and accurately representing the user's requirements so that they can be correctly embodied in systems which meet those requirements (i.e. are of good quality).

- Requirements elicitation
- Requirements analysis and negotiation
- Requirements specification
- System modeling
- Requirements validation
- Requirements management

Here, we will discuss requirements specification. Requirements specification would lead to the following four steps:

- Identify external interfaces
- Development of context diagram
- Capture “shall statements
- Allocate requirements
- Prioritize requirements
- Development of requirements traceability matrix

3.2 Systems Specifications

The following are the clauses that I am going to discuss while describing the system specifications.

Introduction

Now a day's restaurant is high in demand. Therefore, we are introducing an online food ordering and management system. This system has two phases one is customer base and the other is admin base. In customer panel, customer can order food for home or by sitting in restaurant from their cell phones. From admin panel, manager can manage food menu and orders. Overall concept is to join food ordering and restaurant management system.

Existing System

We are making an online food ordering and management system from which customer can order food from their home as well as they can order food from their mobiles while sitting on their tables in restaurant. The User interface is quite easy to learn and to work with.

Scope of the System

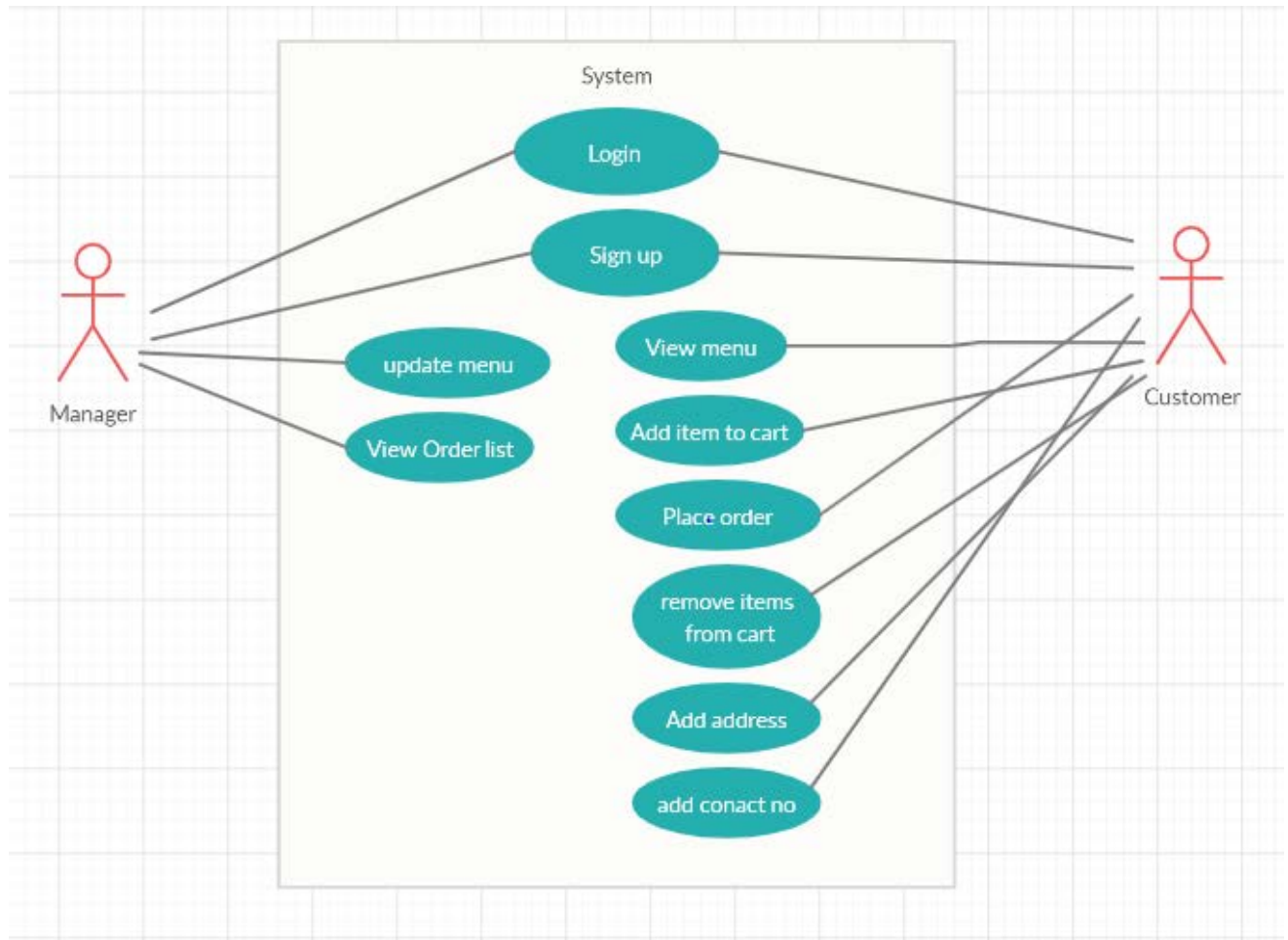
The project aimed is to developing an online food ordering and management system that can be used in the small medium enterprise food & beverages (**F&B**) industries that can help the restaurants to simplified their entire daily operational task as well as improve the dining experience of customers.

The system will be able to let staff to update and make changes to their food and beverage menu information. The most important function is to allow staffs to make billing statement for consumer to make their payment after dine-in.

At the end of the project, it will improve the restaurants productivity, efficiency, effectiveness and as well as accurateness. Because of this system, it will minimize all the manual work by replacing the traditional order system into a computer system. It will eliminate the manual work such as workers physically deliver food order ticket into the kitchen, manually replace the price tag of the food, and manually calculate billing price. These are some main functional module that will exist in the system

- Food & Beverage Ordering Module
- Order Queue Module
- Menu Management Module
- Billing Module
- Good & Services Tax (GST) Calculation Module

3.3. High Level Use Case Diagram:



Chapter 4: Third Deliverable for Object Oriented Approach

4.1. Introduction:

Third deliverable is all about the software design. In the previous deliverable, analysis of the system is completed. So, we understand the current situation of the problem domain. Now we are ready to strive for a solution for the problem domain by using object-oriented approach. Following artifacts must be included in the 3rd deliverable.

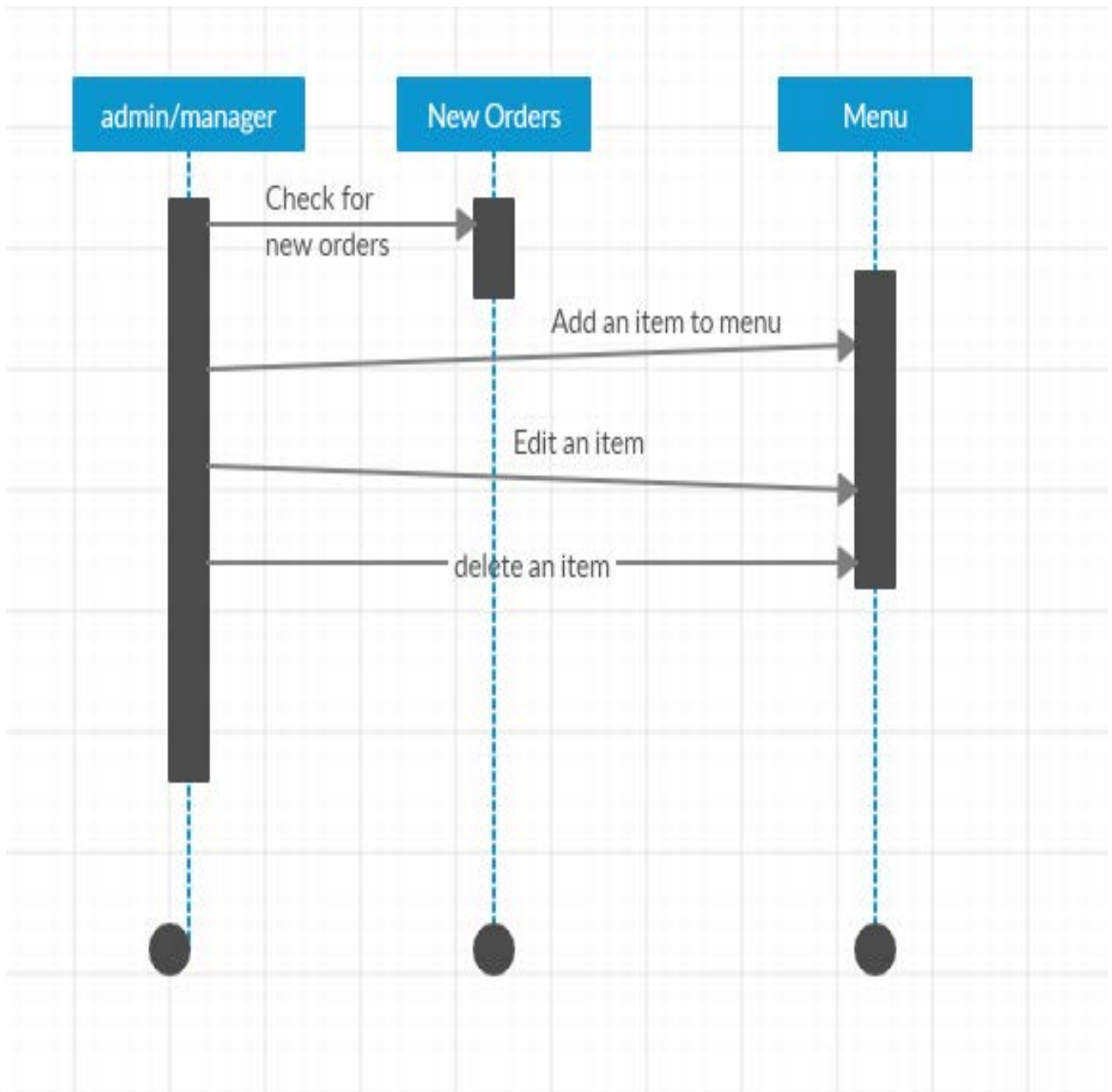
1. Sequence Diagram
2. Collaboration Diagram
3. Operation Contracts
4. Design Class Diagram
5. State Transition Diagram
6. Data Model
7. Activity Diagram

Now we discuss these artifacts one by one as follows:

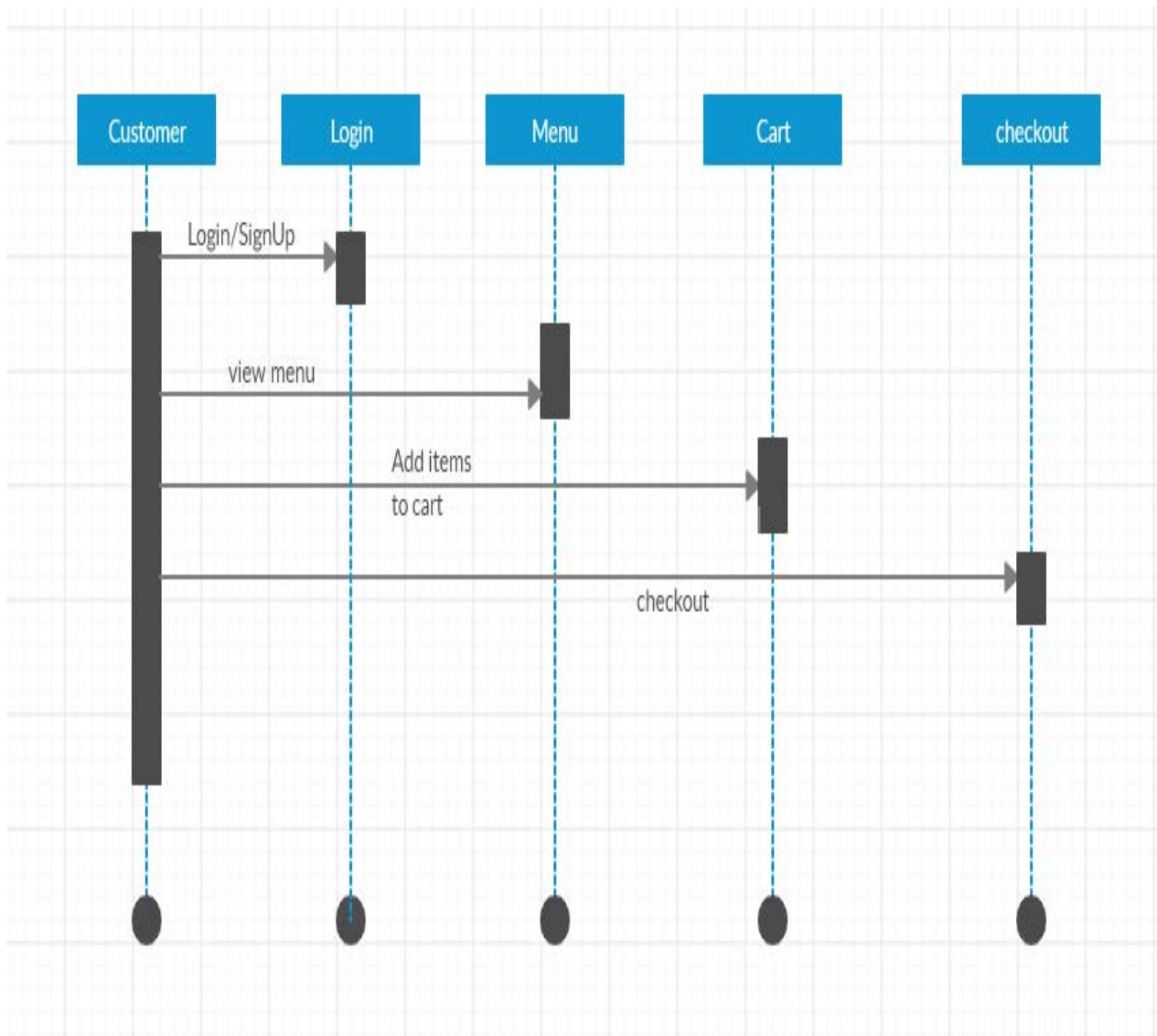
4.2. System Sequence Diagram

The UML system sequence diagram (SSD) illustrates events sequentially input from an external source to the system. The SSD will define the system events and operations. System sequence diagrams are a timeline drawing of an expanded use case. Events are related by time with the top events occurring first. System events are the important items. These are events that cause a system response.

4.2.1. Admin Sequence Diagram



4.2.2. Customer Sequence Diagram

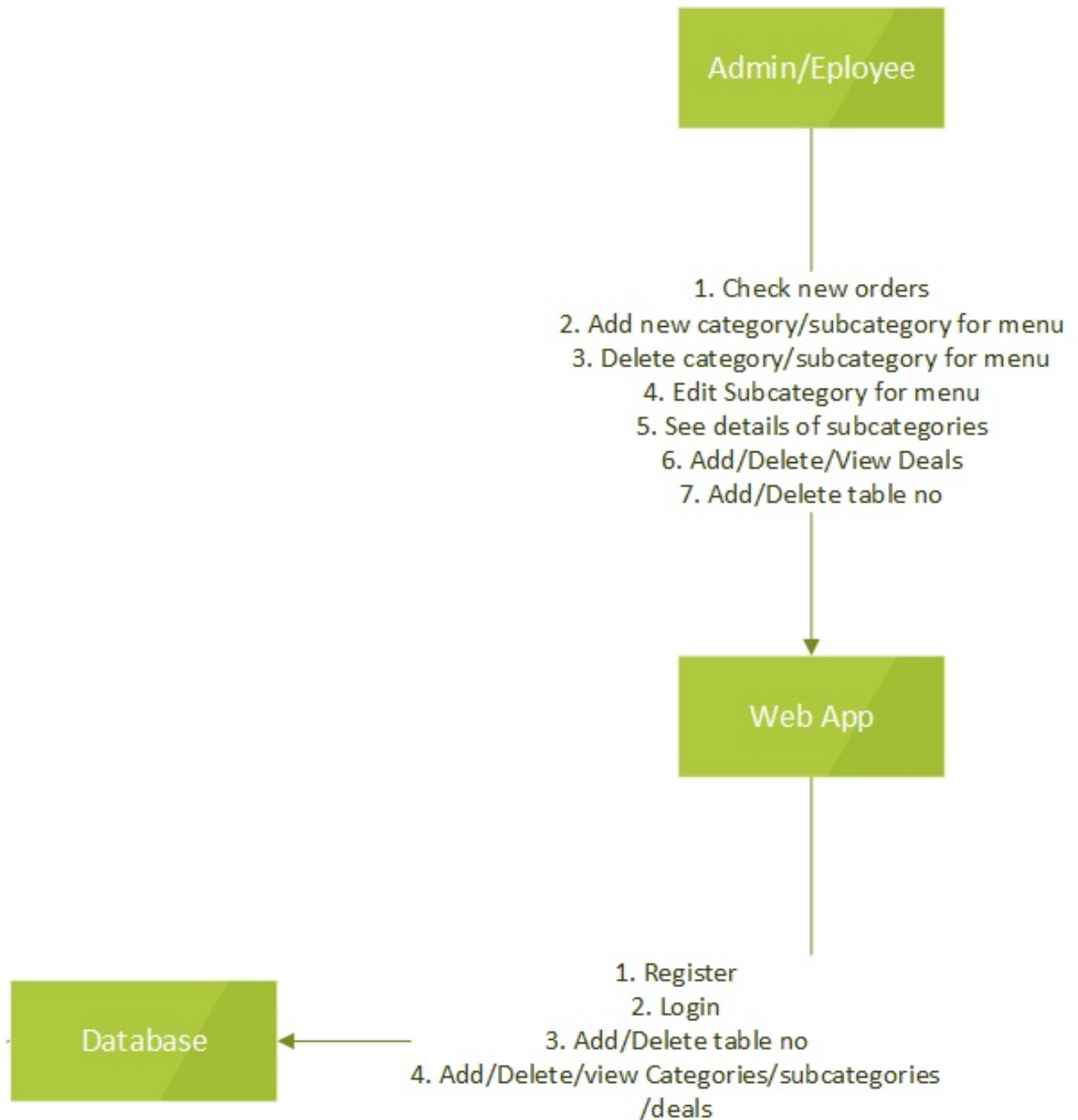


4.3. Collaboration Diagram

A collaboration diagram describes a pattern of interaction among objects; it shows the objects participating in the interaction by their links to each other and the messages that they send to each other.

Collaboration diagrams are used to show how objects interact to perform the behavior of a particular use case, or a part of a use case. Along with sequence diagrams, collaborations are used by designers to define and clarify the roles of the objects that

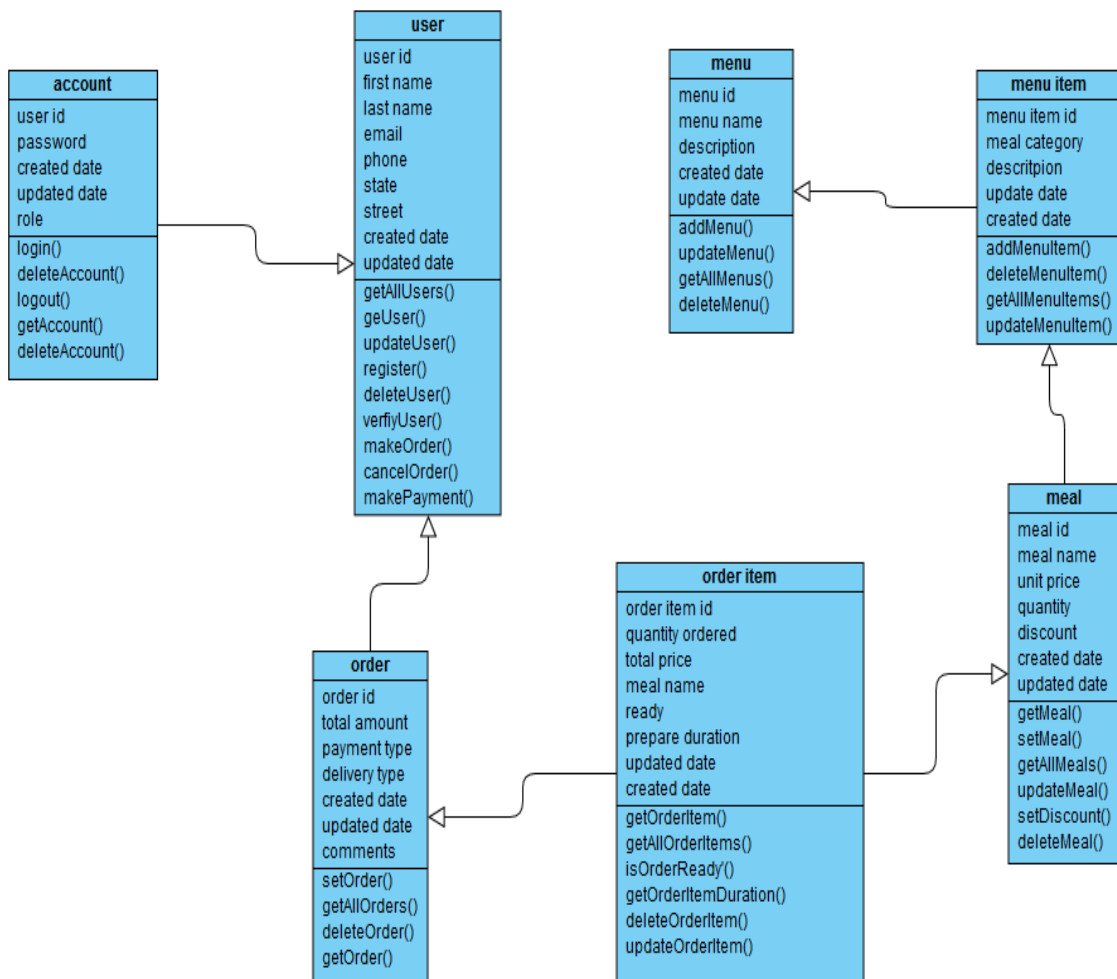
perform a particular flow of events of a use case. They are the primary source of information used to determining class responsibilities and interfaces



4.4. Design Class Diagram

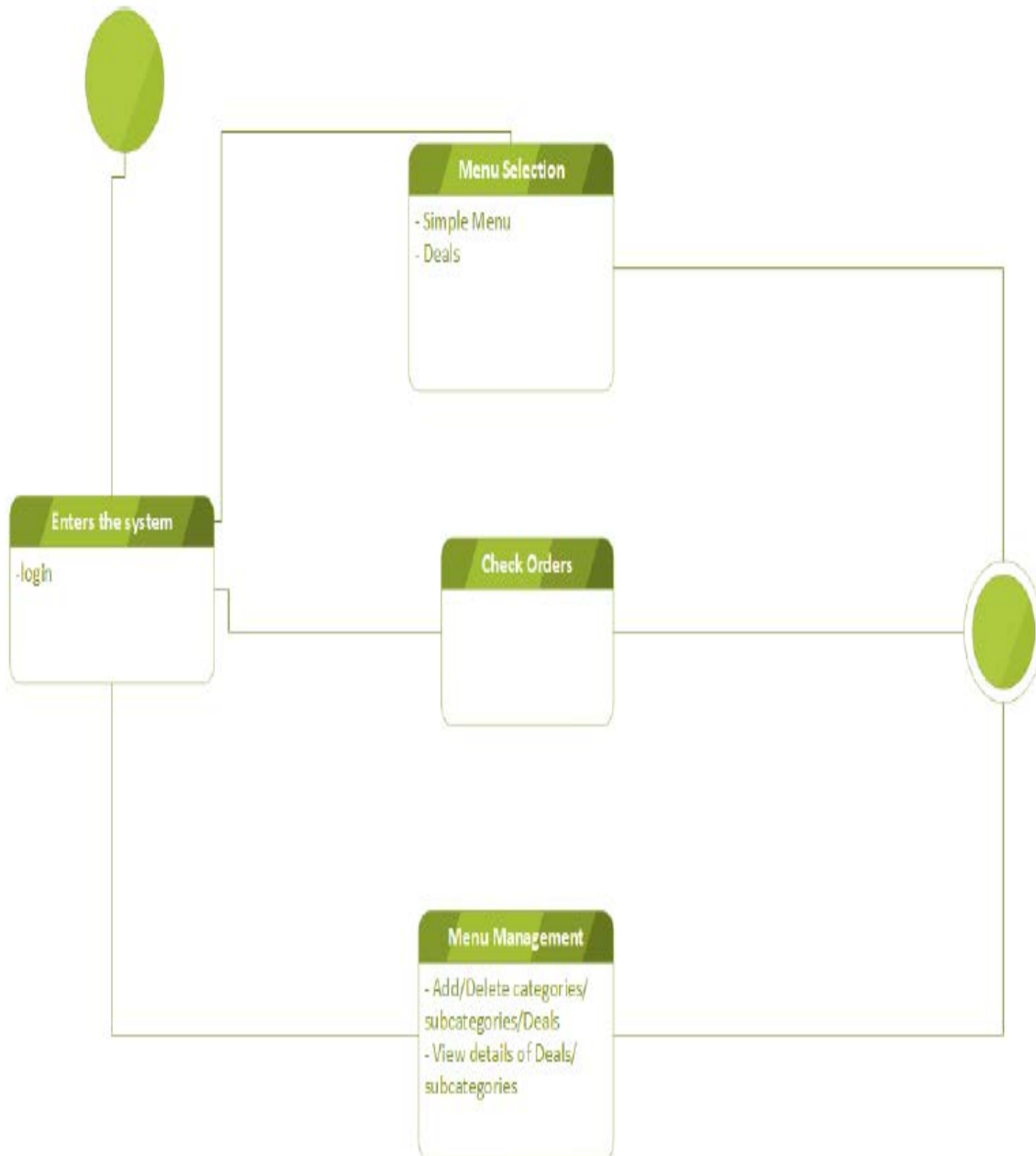
Classes are the work-horses of the design effort—they actually perform the real work of the system. The other design elements—subsystems, packages and collaborations simply describe how classes are grouped or how they interoperate.

Active classes are design classes, which coordinate and drive the behavior of the passive classes - an active class is a class whose instances are active objects, owning their own thread of control.



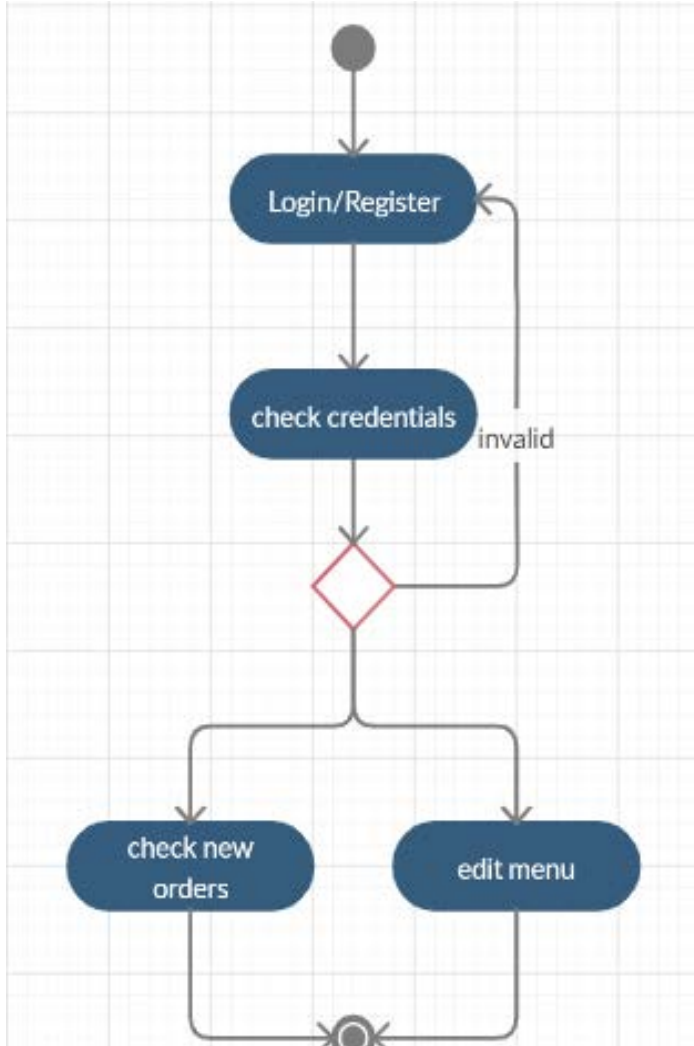
4.5. State Chart Diagram

For some operations, the behavior of the operation depends upon the state the receiver object is in. A state machine is a tool for describing the states the object can assume and the events that cause the object to move from one state to another. State machines are most useful for describing active classes. The use of state machines is particularly important for defining the behavior.

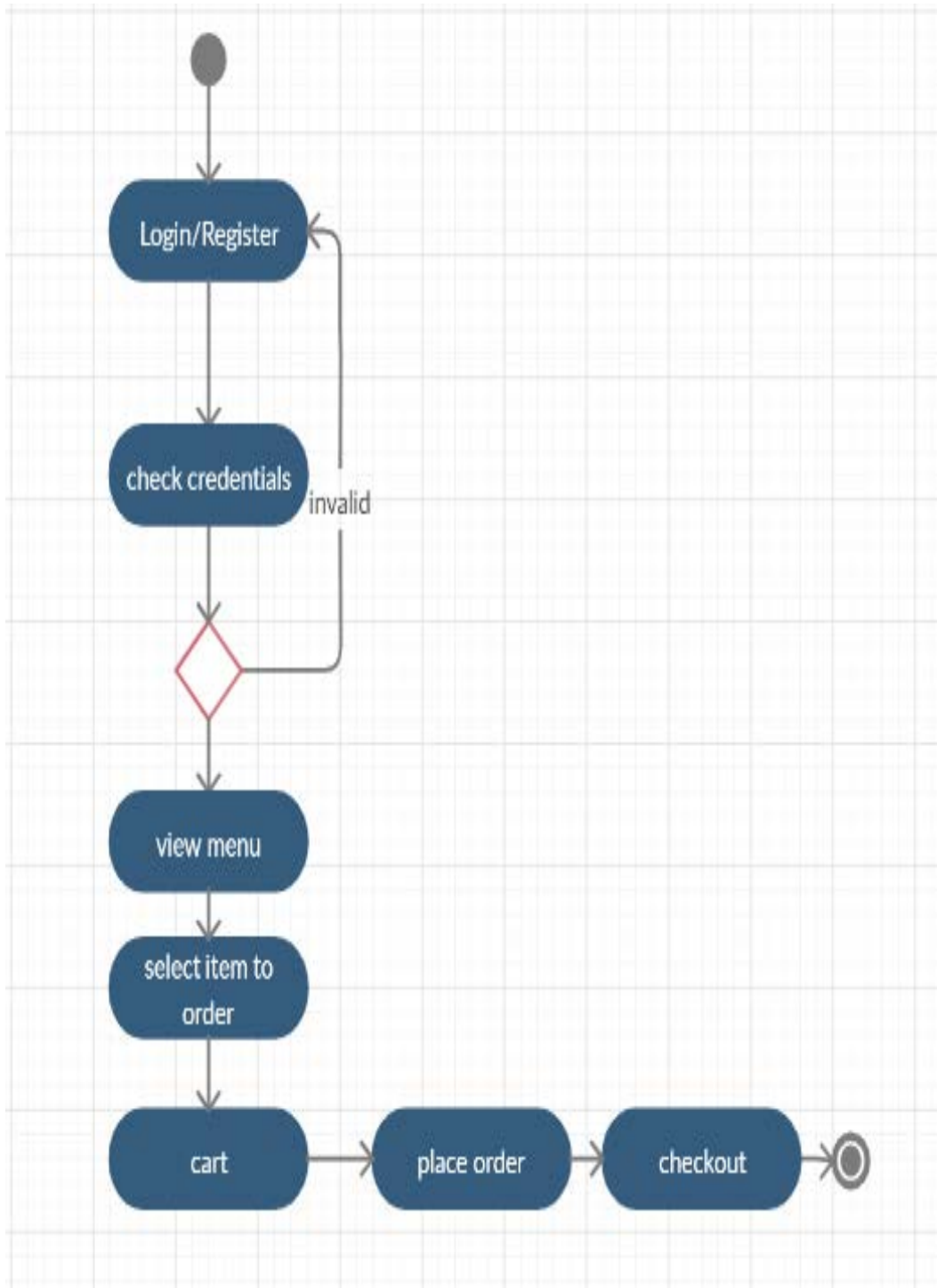


4.6. Activity Diagram

Admin/manager



Customer



Chapter 5: 4th Deliverable (User Interface Design)

5.1. Introduction

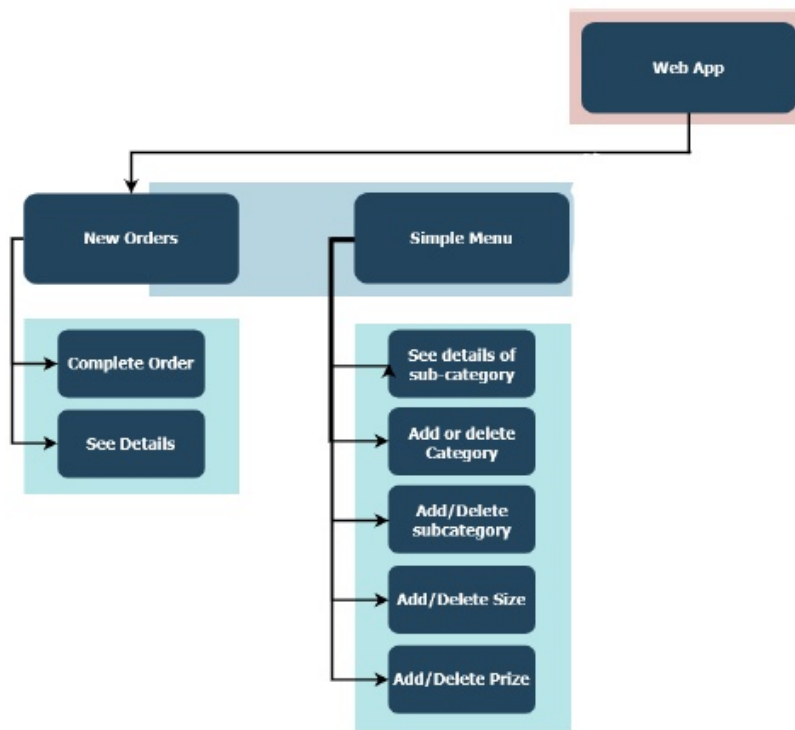
A user interface design consists of three main parts:

Page elements should be visualized on paper before building them in the computer. Just as you draw a site map to plan the site, use cartoons and storyboards to begin blocking out the site's appearance and navigational scheme.

1. Site maps
2. Web App UI
3. Database Design

5.2. Site Maps

A site map's main benefit is to give users an overview of the site's areas in a single glance by dedicating an entire page to a visualization of the information architecture. If designed well, this overview can include several levels of hierarchy, and yet not be so big that users lose their ability to grasp the map as a whole.





5.3. Web App UI


5.3.1. Login


FOOD CLUB Home Menu About Contact Us Sign In

SIGN IN

Username Enter username 

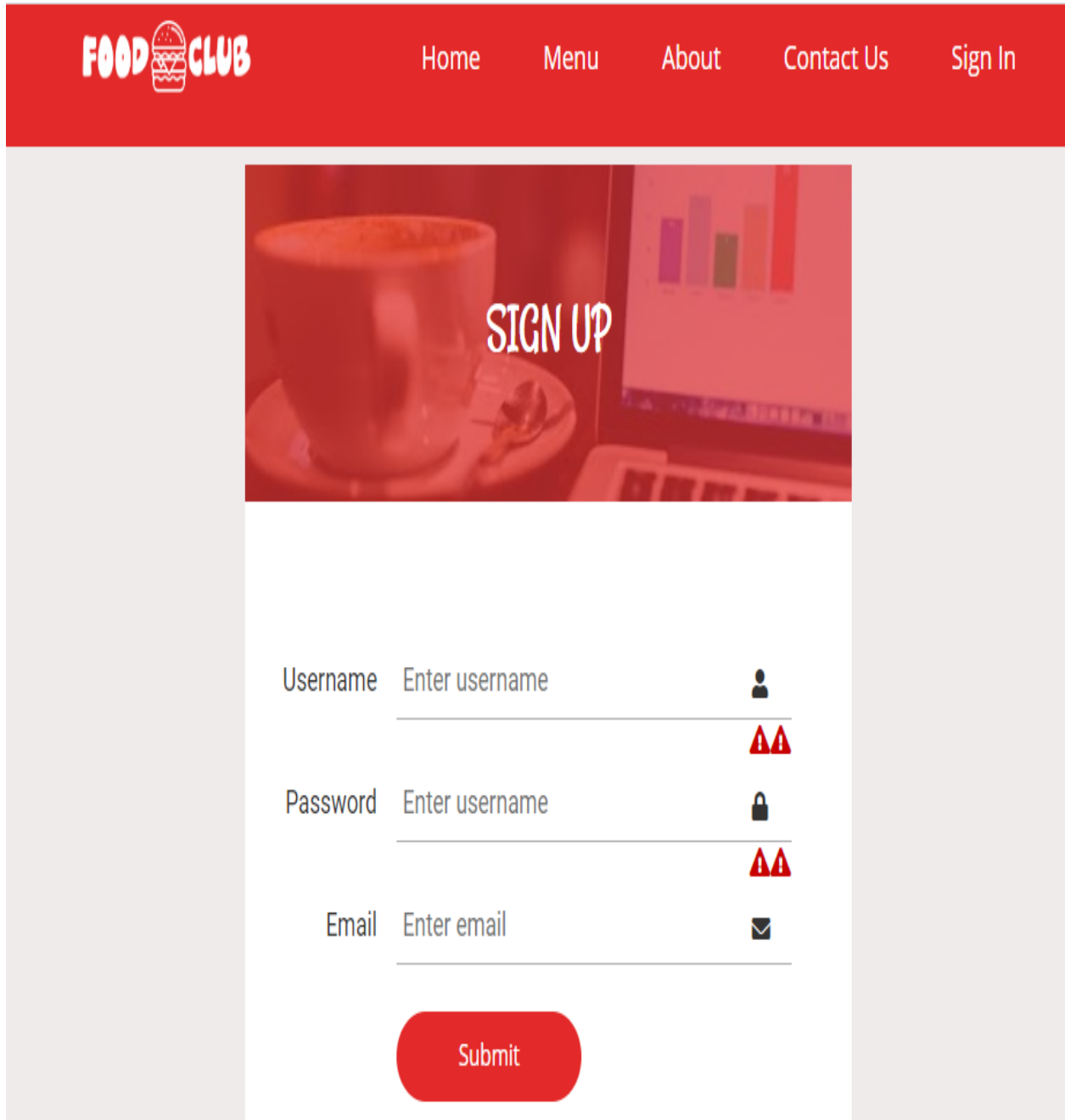


Password Enter password 



Login


5.3.2. Register





The screenshot shows a web registration form for 'FOOD CLUB'. The header is red with the logo and navigation links: Home, Menu, About, Contact Us, and Sign In. The main content area features a red-tinted image of a coffee cup and a laptop with the text 'SIGN UP' overlaid. Below the image are three input fields: Username, Password, and Email. Each field has a placeholder text 'Enter username' or 'Enter email' and a corresponding icon (person, lock, and envelope). The Password field has two red warning triangles below it. A red 'Submit' button is at the bottom.


FOOD CLUB Home Menu About Contact Us Sign In


SIGN UP

Username Enter username 



Password Enter username 




Email Enter email 

Submit

5.3.3. New Orders (for managers)

Orders					
Username	Street	Meal	Quantity	Price	Order Time
asma	hamza street new sadiq colony	california-style	1	200	2020-04-20T19:00:00Z[UTC]
asma	hamza street new sadiq colony	neapolitan-pizza	2	20	2020-04-21T19:00:00Z[UTC]
asmat		california-style	2	220	2020-04-20T19:00:00Z[UTC]
asmat		chicago-pizza	1	220	2020-04-21T19:00:00Z[UTC]

5.3.4. Simple Menu




All
Burgers
Pizza
Drinks

View Cart 0


Clear Cart

HOT




PIZZA
CALIFORNIA-STYLE
best pizza ever
\$200.00

HOT



PIZZA
CHICAGO-PIZZA
best pizza ever

HOT



PIZZA
DETROIT-PIZZA
best pizza ever
\$30.00

5.4. Database Design

5.4.1 Accounts

Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

+ Options

		user_name	status	createDateTime	email	password	updateDateTime	role		
<input type="checkbox"/>	Edit	Copy	Delete	asmat	0	2020-07-10 11:15:12	ladla015@gmail.com	asma12	2020-07-10 11:15:12	client
<input type="checkbox"/>	Edit	Copy	Delete	asma	0	2020-07-05 11:12:55	asaa@gmail.com	asmaasma	2020-07-05 11:12:55	admin

Check all | With selected: Edit Copy Delete Export

Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

5.4.2 Meals

```
SELECT * FROM `meal`
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

+ Options

		meal_id	createDateTime	discount	imagePath	meal_name	quantity	price	updateDateTime	menuiten	
<input type="checkbox"/>	Edit	Copy	Delete	1	2020-04-21 00:00:00	10	ressources/images/pizza/california-style.jpg	california-style	3	200	2020-07-10 11:16:05
<input type="checkbox"/>	Edit	Copy	Delete	2	2020-04-22 00:00:00	0	ressources/images/pizza/chicago-pizza.jpg	chicago-pizza	6	20	2020-07-10 11:16:05
<input type="checkbox"/>	Edit	Copy	Delete	3	2020-04-22 00:00:00	0	ressources/images/pizza/detroit-pizza.jpg	detroit-pizza	1	30	2020-05-08 18:58:26
<input type="checkbox"/>	Edit	Copy	Delete	4	2020-04-21 00:00:00	0	ressources/images/pizza/greek-pizza.jpg	greek-pizza	2	20	2020-04-22 00:00:00
<input type="checkbox"/>	Edit	Copy	Delete	5	2020-04-22 00:00:00	0	ressources/images/pizza/neapolitan-pizza.jpg	neapolitan-pizza	2	20	2020-07-10 11:36:18
<input type="checkbox"/>	Edit	Copy	Delete	6	2020-04-22 00:00:00	0	ressources/images/pizza/newyork-pizza.jpg	newyork-pizza	3	100	2020-05-27 12:36:45

Check all | With selected: Edit Copy Delete Export

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<https://phpgurukul.com/food-ordering-system-using-php-and-mysql/>

<https://www.projecttopics.org/design-implementation-online-food-ordering-system.html>