TRIBHUVAN UNIVERSITY
INSTITUTE OF ENGINEERING

Kathmandu Engineering College

Department of Computer Engineering

Minor Project Report

On

Pet Puja

[Code No: CT654]

By

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Salina Karki	(73065)
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Kathmandu, Nepal

2076

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PROJECT REPORT SUBMITTED TO
THE DEPARTMENT OF COMPUTER ENGINEERING
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR
THE BACHELOR OF ENGINEERING

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CERTIFICATE

The undersigned certify that they have read and recommended to the Department of Computer Engineering, a minor project work entitled "PetPuja" submitted by Ojaswi Kafle – KAT073BCT049, Salina Karki – KAT073BCT065, Shreya Baidya – KAT073BCT074 in partial fulfillment of the requirements for the degree of Bachelor of Engineering.

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ABSTRACT

A web application is a program that is stored on a remote server and sent over the internet through browser interface. The usage of web applications usage is growing day by day, so familiarization with this topic is a must. **"Pet Puja"** is a web application, more particularly, an online food ordering system that provides convenience for the customers. This system enhances the speed and standardization of food delivery process by overcoming the traditional queuing system. In addition to this, we can also locate the nearby restaurants. This system notes the user's details, has the menus set up allowing us to track the orders, maintain customers' database and improve our delivery system. The user's details are surely confidential as for every user it maintains a separate account by providing an id and a password. The customers are only a click away from ordering their food.

Keywords: Web applications, Customer, Food deliver, Database, Menu

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LIST OF ABBREVIATIONS

API : Application Programming Interface

CSS : Cascading Style Sheet

DFD : Data Flow Diagram

F&B : Food and Beverage

HTML: Hyper Text Markup Language

JS : Java Script

UI : User Interface

CHAPTER 1: INTRODUCTION

1.1. BACKGROUND THEORY

Computers have become part of the life for accessing almost any kind of information. Life in the 21st century is full of technological advancement and in this technological age it is very difficult for any organization to survive without utilizing technology.

Nowadays, people prefer to frequently dine in at restaurants for their meal. In today's age of fast food and take-out, many restaurants have chosen to focus on quick preparation and speedy delivery of orders rather than offering a rich dining experience. The traditional food order system is not very efficient due to following reasons:

- For placing any orders customers must visit hotels or restaurants to know about food items and then place order and pay. In this method, time and manual work is required.
- While placing an order over the phone, customer lacks the physical copy of the menu item, lack of visual confirmation that the order was placed correctly.
- Every restaurant needs certain employees to take the order over phone or inperson, to offer a rich dining experience and process the payment. In today's market, labor rates are increasing day by day making it difficult to find employees when needed.

Hence, our food order web application eliminates the limitation of traditional food order system. The main advantage of this application is that it simplifies the ordering process for both the customer and the restaurant. When the customer visits the application, they are presented with an interactive and up-to-date menu, complete with all available options. After selecting, the item is then added to their order, which the customer can review the details of at any time before checking out. This provides instant visual confirmation of what was selected and ensures that items in the order are, in fact, what was intended. The user can simply login using his/her e-mail address and corresponding password and then order foods to be delivered to his/her specific location. They can also book reservation in any restaurant. This system also greatly lightens the load on

the restaurant's end, as the entire process of taking orders is automated. Once an order is placed, it is entered in the database and then retrieved, in pretty much real-time. Within this application, all items in the order are displayed, along with their corresponding options and delivery details, in a concise and easy to read manner.

1.2. PROBLEM STATEMENT

The online food ordering system sets up a food menu online and customers can easily place the order as per they like. Also, the online customers can easily track their orders. The basic problem in the food service industry is that restaurants are not realizing efficiencies that would result from better applications of technology in their daily operations, also, the traditional queuing system for the customers is disabled. The main objective of this project is to develop a web application to make people's life easier by reducing the time consumed while searching for restaurants, waiting for food, basically, while food hunt.

1.3. OBJECTIVES

The objectives of this project are:

- To book tables at any restaurant as per user's choice.
- To enable us with the advantage of online home delivery service.

1.4. SCOPE OF THE PROJECT

- To simplify and improve the efficiency of the ordering process for both customer and restaurant.
- To minimize manual data entry and security during order placement process.

1.5. APPLICATION

The pet puja app can be applicable in following ways:

- To order food from any restaurant.
- To reserve your seat at any restaurant.
- It can also be used to view the location of a restaurant.

- Food menus will be handled by the user by their own gadget.

CHAPTER 2: LITERATURE REVIEW

The web has had a significant impact on all aspects of our society. As our society relies more and more on the web, the dependability of web applications has become increasingly important. In the past decades, the rapid growing of network and technology did a great impact for how people communicate with each other remotely. At the same time, this technology also leads different kind industries to change their entire management aspect. F&B industry is one of the industries in the market that apply these technologies into their business processes that assist them to be much more convenience and efficient. In this project the research work aims to automate the food ordering process in restaurant and also improve the dining experience of customers. Design implementation of food ordering system for restaurants were discuss in this paper. This system, implements wireless data access to servers. The web application on user's interface will have all the menu details. These order details are updated in the central database.

Online Food Ordering System is a system that integrated both concept of intranet and technology (Khairunnisa, K. and Ayob, J., 2009). The first online food order was a pizza from Pizza Hut in 1994 [1]. The first online food ordering service, World Wide Waiter (now known as Waiter.com), was founded in 1995 [2]. The site originally serviced only northern California, later expanding to several additional cities in the United States. With increased smartphone penetration, and the growth of both Uber and the sharing economy, food delivery startups started to receive more attention. Instacart was founded in 2012[3]. In 2013, Seamless and Grubhub merged [4] By 2015, online ordering began overtaking phone ordering[5].

In the context of Nepal, Foodmandu is one of the popular web applications through which users can order food from a restaurant of the user's choice and have their food delivered at their doorstep. Although, well-established, it lags when it comes to delivery on time and doesn't feature booking and eating at the restaurant itself.

Keeping time management as the most important point, our project will get everyone benefitted [6].

In addition to Foodmandu, Bhoj (previously Bhojdeals), Yellow Nepal is also one of the current leading application in terms of online food ordering system. Bhoj is a one stop mobile app for all the foodies in Nepal where they can search for their favorite restaurants, 5 get food delivered to their office, get awesome deals when they dine in at a restaurant, explore restaurant menus and much more. Yellow Nepal is a locationbased service for restaurants and food lovers listing all the restaurants around Nepal and offering deals and events. The restaurant business in Nepal is worth a surprising $100 million annually [7].

CHAPTER 3: METHODOLOGY

3.1. PROCESS MODEL

To implement our project, we decided to use iterative method for software development. In this SDLC model, software development is divided into smaller segments to make the work easier. It focuses on initial, simplified implementation which becomes more complex after each iteration and features are added until the final product is deployed. Iterative method is also associated with incremental model, so an early prototype is delivered to the client to see whether he/she want some changes or not. Thus, after each iteration a better version of the product is delivered. We are a group of three members, so we have chosen this model as it is easier to divide the work among us. A working software is generated quickly such that less time is spent on documentation and more time is given for designing. We can detect errors at early stages and correct it. Therefore, this model will be better for our project.

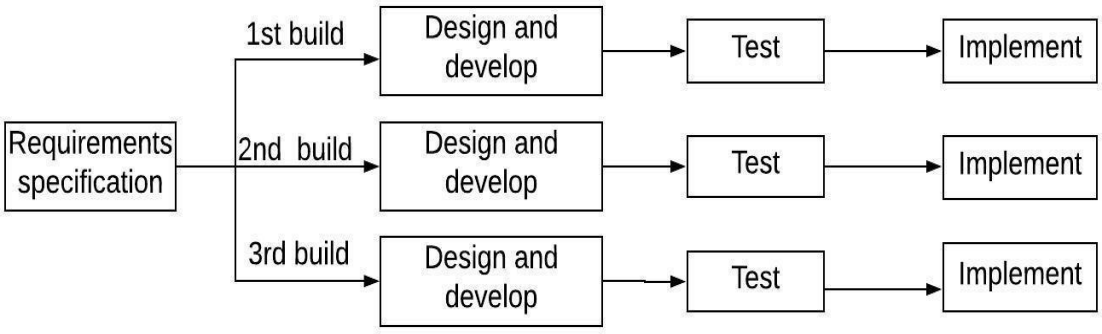


Figure 3.1: Iterative model

3.2. TOOLS USED

3.2.1. HTML

Hypertext Markup Language, a standardized system for tagging text files to achieve font, color, graphic, and hyperlink effects on Worldwide pages. Hypertext Markup Language is the standard markup language for creating web pages and web applications. With cascading Style Sheets and JavaScript, it forms a triad of cornerstone technologies for the World Wide Web. Web browsers receive HTML documents from a web server or from local storage and render the documents into multimedia web pages. HTML documents from a web server or from local storage and render the documents into multimedia web pages. HTML describes the structure of a web page semantically and originally included cues for the appearance of the documents.

3.2.2. Visual Studio

Visual Studio is an integrated development environment from Microsoft. It is used to develop computer programs, as well as websites, web apps, web services and mobile apps. Visual Studio uses Microsoft software development platforms such as Windows API, Windows Forms, Windows Presentation Foundation, Windows Store and Microsoft Silverlight. It can produce both native code and managed code. Visual Studio includes a code editor supporting IntelliSense as well as code refactoring. Visual Studio supports 36 different programming languages and allows the code editor and debugger to support (to varying degrees) nearly any programming language, provided a language-specific service exists. Built-in languages include C, C++, C++/CLI, Visual Basic .NET, C#, F#, JavaScript, Type Script, XML, XSLT, HTML, and CSS. Support for other languages such as Python, Ruby, Node.js, and M among others is available via plug-ins. Java (and J#) were supported in the past.

The most basic edition of Visual Studio, the Community edition, is available free of charge.

3.2.3. CSS

Cascading Style sheets abbreviated as CSS is a style sheet language used for describing the presentation of a document written in a markup language like HTML. CSS is a cornerstone technology of the World Wide Web. Before CSS, nearly all presentational attributes of HTML documents were contained within the HTML markup. All font colors, background styles, element alignments, borders and sizes had to be explicitly described, often repeatedly, within the HTML. CSS lets authors move much of that information to another file, the style sheet, resulting in considerably simpler HTML. CSS allows the separation of presentation from structure. CSS can define color, font, text alignment, size, borders, spacing, layout and many other typographic characteristics, and can do so independently for on-screen and printed views. CSS also defines non-visual styles, such as reading speed and emphasis for aural text readers.

3.2.4. Firebase

Firebase is a mobile and web application development platform developed by Firebase, Inc. in 2011, then acquired by Google in 2014. It has services like Firebase Cloud Messaging (FCM) which is a cross-platform solution for messages and notifications for Android, iOS, and web applications, which as of 2016 can be used at no cost. Firebase Auth is a service that can authenticate users using only client-side code. It supports social login profiles Facebook, GitHub, Twitter and Google (and Google Play Games). Additionally, it includes a user management system whereby developers can enable user authentication with email and password login stored with Firebase. Firebase provides a real time database and backend as a service. The service provides application developers an API that allows application data to be synchronized across clients and stored on Firebase's cloud. The company provides client libraries that enable integration with Android, iOS, JavaScript, Java, Objective-C, Swift and Node.js applications. The database is also accessible through a REST API and bindings for several JavaScript Frameworks such as Angular.js, React, Ember.js and Backbone.js. The REST API uses the Server-Sent events protocol, which is an API for creating

HTTP connections for notifications from a server. Developers using the real time database can secure their data by using the company's server-side-enforced security rules.

3.2.5. jQuery

jQuery is a JavaScript library designed to simplify HTML DOM tree traversal and manipulation, as well as event handling, CSS animation, and Ajax. It is free, opensource software using the permissive MIT license. WEB analysis (from 2017) indicates that it is the most widely deployed JavaScript library by a large margin. It includes DOM element selections using the multi-browser open source selector engine Sizzle, a spin-off of the jQuery project. It also includes DOM manipulation based on CSS selectors that uses elements' names and attributes, such as id and class, as criteria to select nodes in the DOM. jQuery provides two kinds of functions, static utility functions and jQuery object methods. The jQuery library provides simple syntax for adding event handlers to the DOM using JavaScript, rather than adding HTML event attributes to call JavaScript functions. Thus, it encourages developers to separate JavaScript code from HTML markup.

3.2.6. JavaScript (JS)

JavaScript often abbreviated as JS, is a high level interpreted programming language that conforms to the ECMA Script specification. JavaScript has curly-bracket syntax, dynamic typing, prototype-based object-orientation, and first class functions JavaScript code can run locally in a user's browser (rather than on a remote server), increasing the application's overall responsiveness to user actions. JavaScript code can also detect user actions that HTML alone cannot, such as individual keystrokes. Applications such as Gmail take advantage of this: much of the user-interface logic is written in JavaScript, and JavaScript dispatches requests for information (such as the content of an e-mail message) to the server. The wider trend of Ajax programming similarly exploits this strength. A Web browser is the most common host environment for JavaScript. However, a web-browsers does not have to execute JavaScript code. (For example, text-based browsers have no JavaScript engines; and users of other browsers may

disable scripts through a preference or extension.) A Web browser typically creates "host objects" to represent the DOM in JavaScript. The Web Server is another common host environment. A JavaScript Web server would typically expose host objects representing HTTP request and response objects, which a JavaScript program could then interrogate and manipulate to dynamically generate Web pages.

3.3. BLOCK DIAGRAM

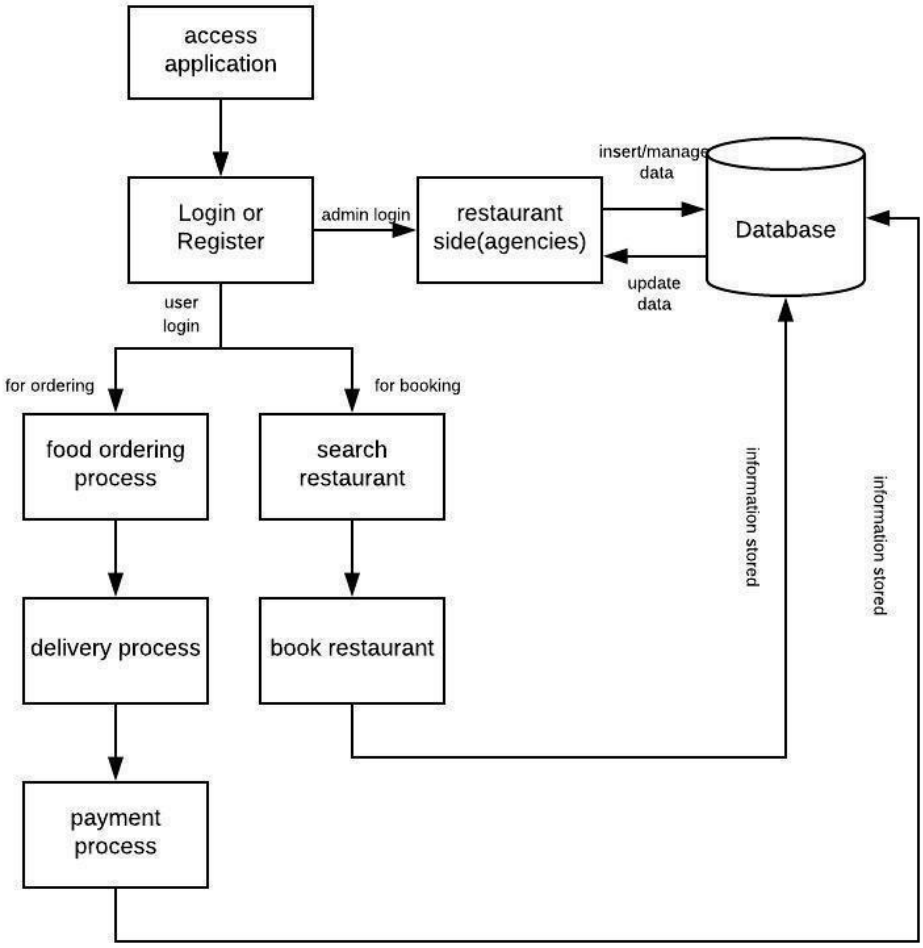


Figure 3.2: Block Diagram

Initially, the web app is accessed, the person accessing the app may be user or administrator (restaurant manager). Customers and admin have their own portal for login. The user accesses the application through e-mail address with password. Once their account is validated then only the user is granted access and then they can choose to either order in or book restaurant accordingly. All the information is stored in the database. In the admin side, after the admin logs into the account he/she can view the data as well as manage and update it.

3.4. ALGORITHM

Step 1: Start

Step 2: Visit the web application

Step 3: Allow the user to login

Step 4: Save the address details of the user

Step 5: Search for restaurants based on the user's location or manually

Step 6: Select any restaurant

Step 7: Choose from the options: order in or book tables at restaurant desired by user

Step 7.1: If the user chooses to order

7.1.1: Select food and beverages

7.1.2: Confirm order details

7.1.3: Display order successful message

7.1.4: Notify the authority for food preparation

7.1.5: Arrange the food to be delivered

7.1.6: Payment method

Step 7.2: If the user chooses to book tables

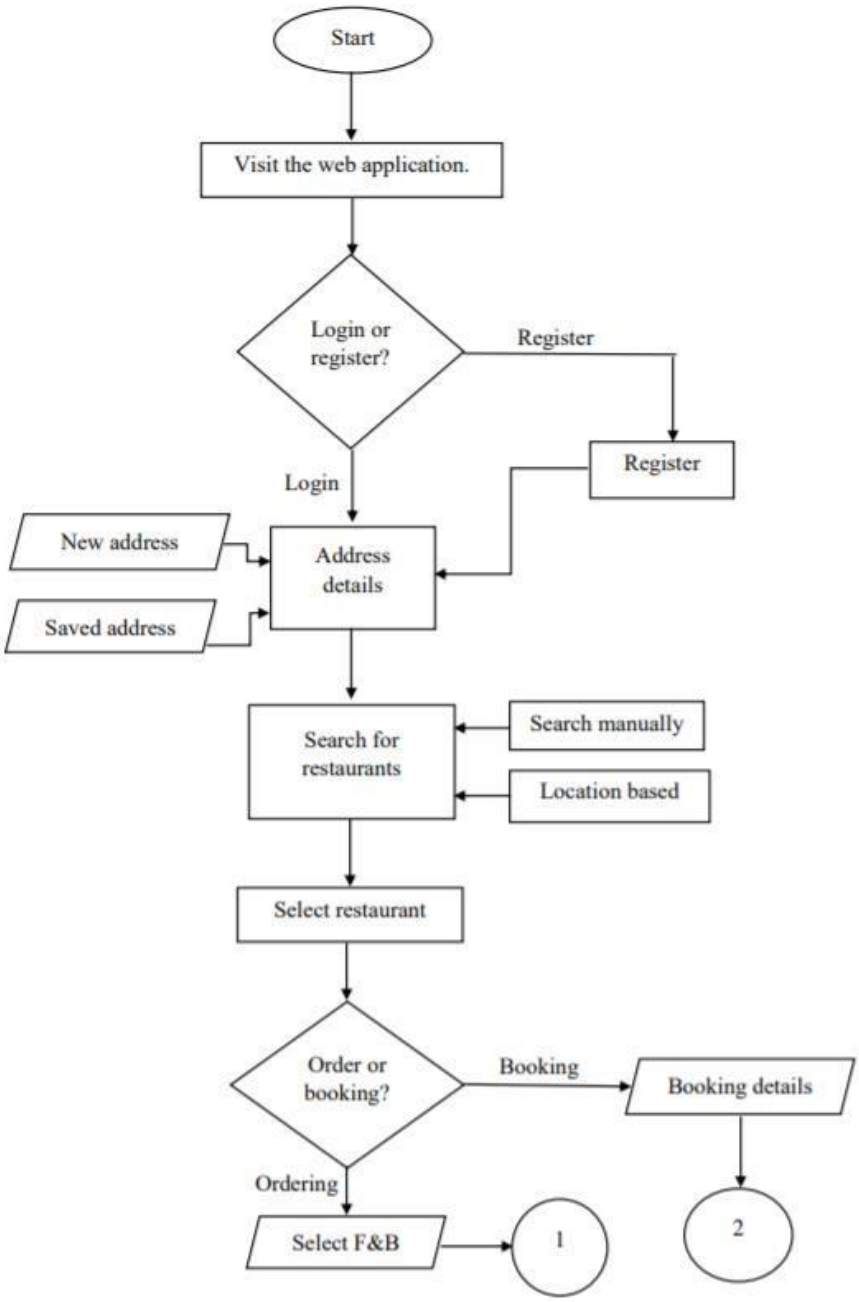
7.2.1: Select the booking details

7.2.2: confirm booking details

7.2.3: Display booking successful message

Step 8: Stop

3.5. FLOWCHART



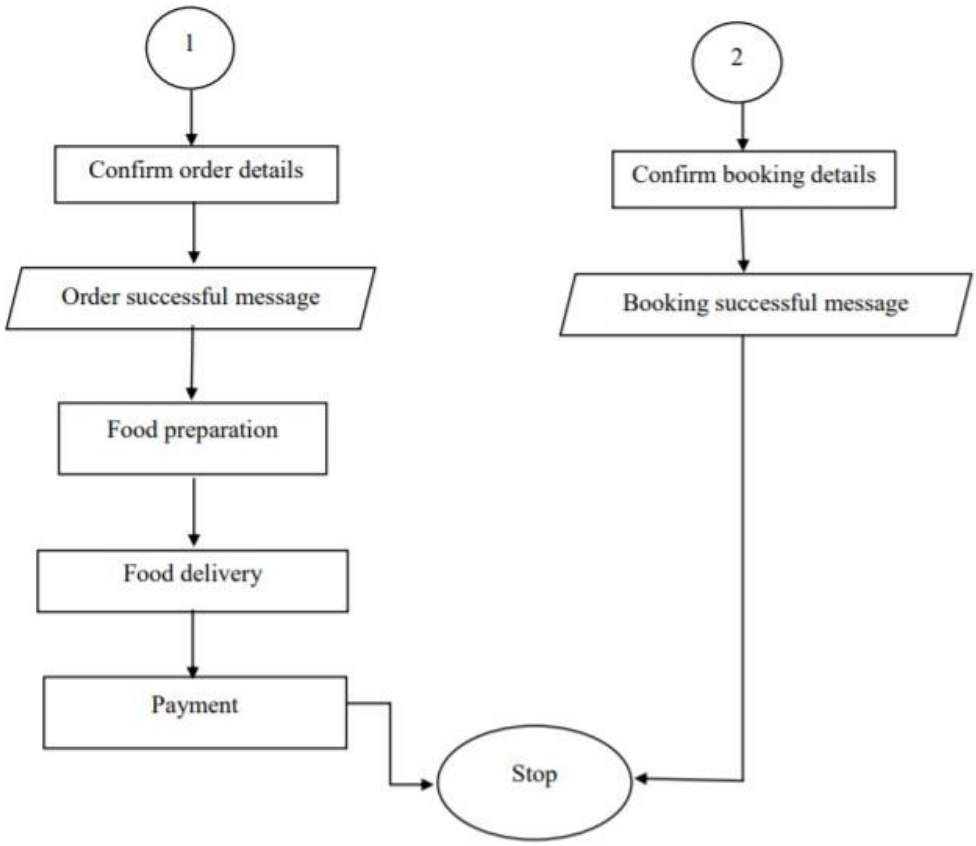


Fig. 3.3 Flowchart

3.6. NECESSARY UML DIAGRAMS

3.6.1. Entity-Relationship Diagram (ER Diagram)

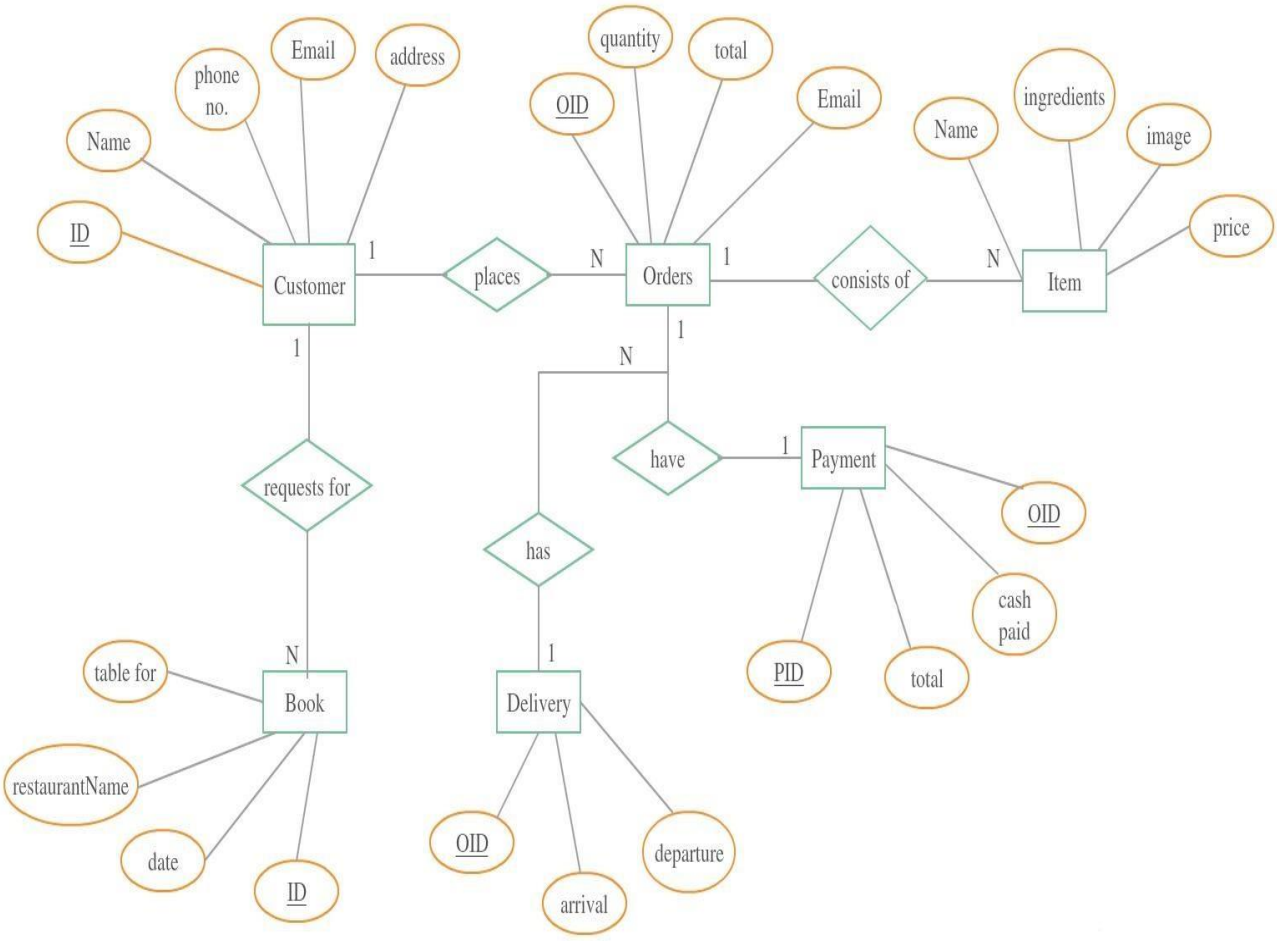


Fig. 3.4: Entity relationship diagram

3.6.2. Use Case Diagram

Fig. 3.5: Use case diagram

3.6.3. Class Diagram

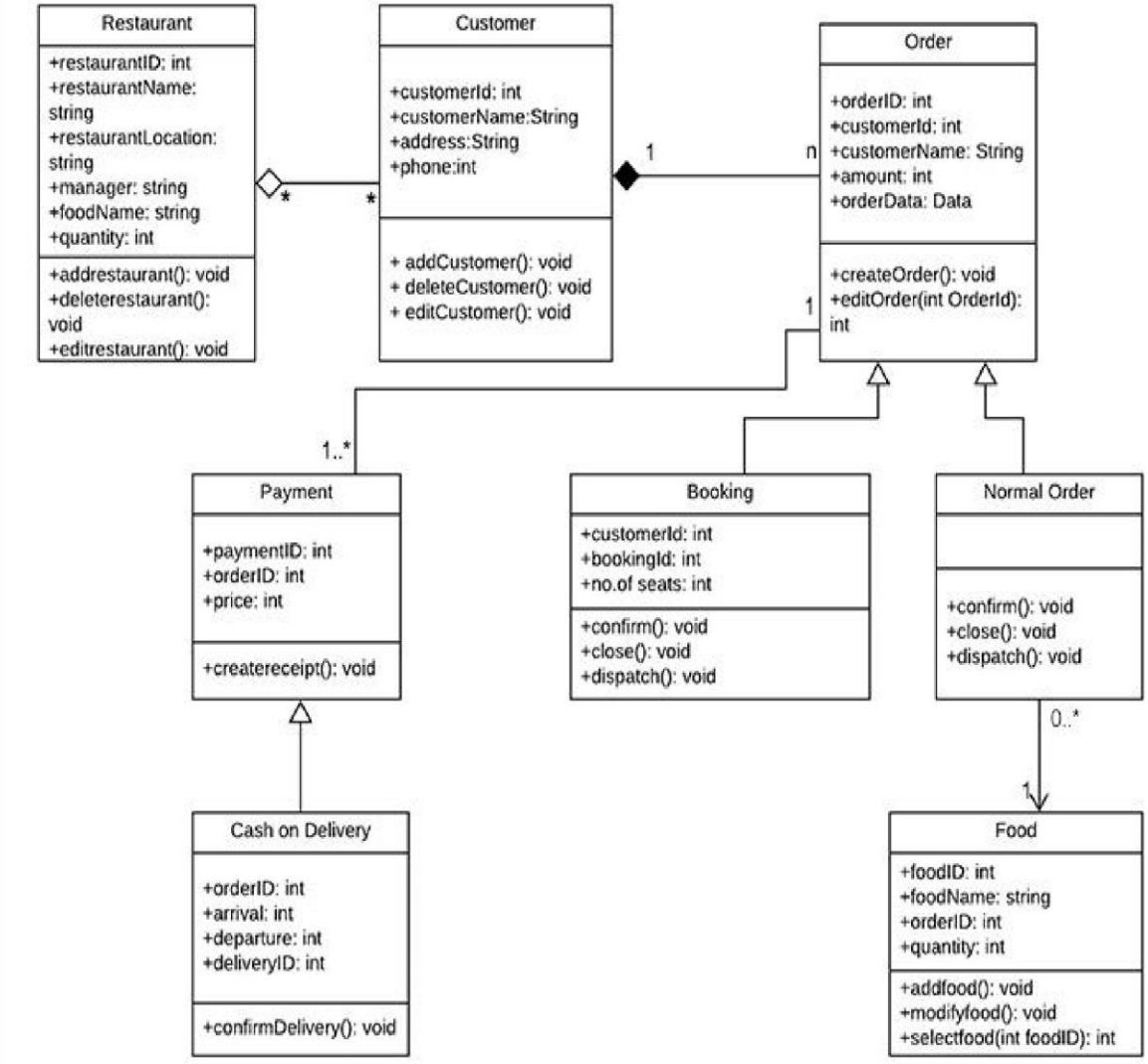


Fig. 3.6: Class Diagram

3.6.4. Data Flow Diagram (DFD)

LEVEL 0 DFD

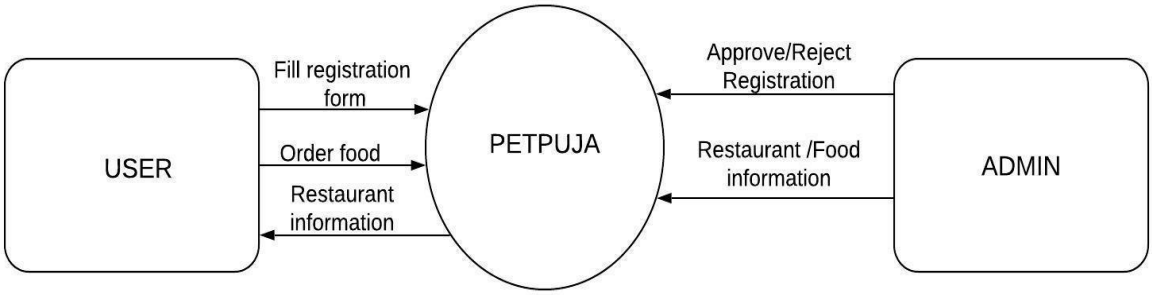


Fig. 3.7.1 Level 0 DFD

LEVEL 1 DFD

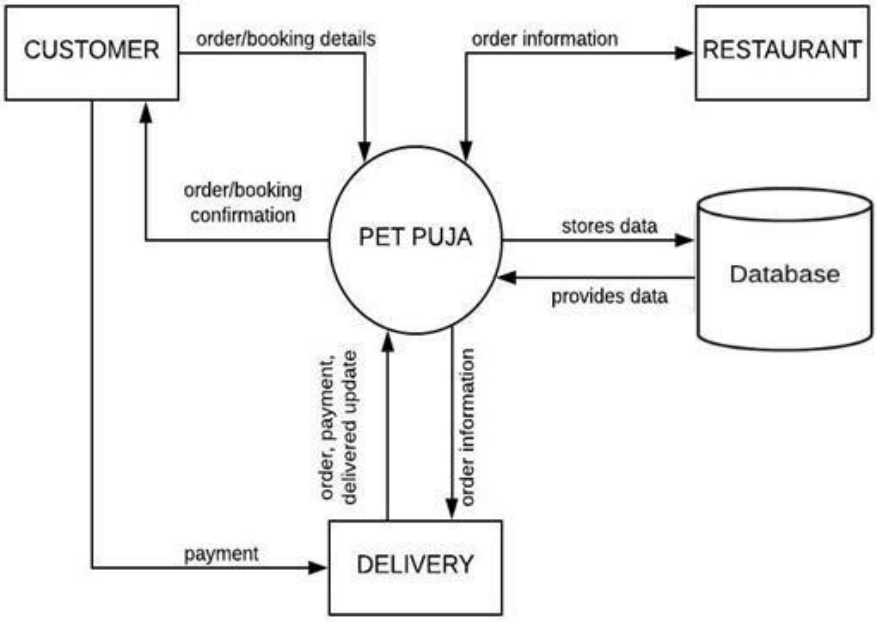


Fig. 3.7.2 1 level DFD

LEVEL 2 DFD

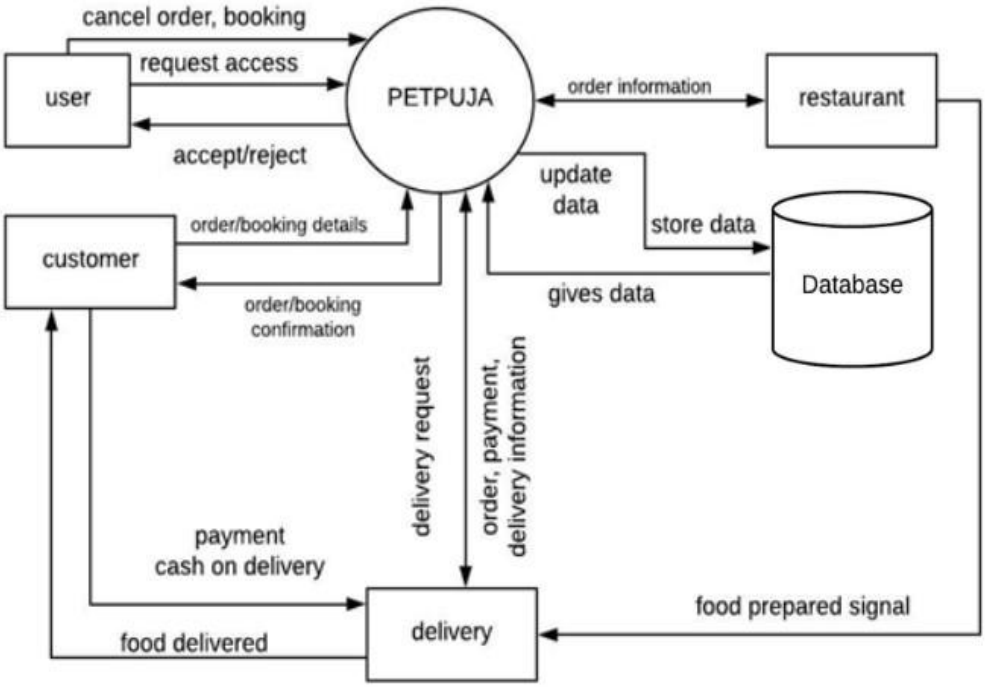


Fig. 3.7.3 2 level DFD

3.6.5. Sequence Diagram

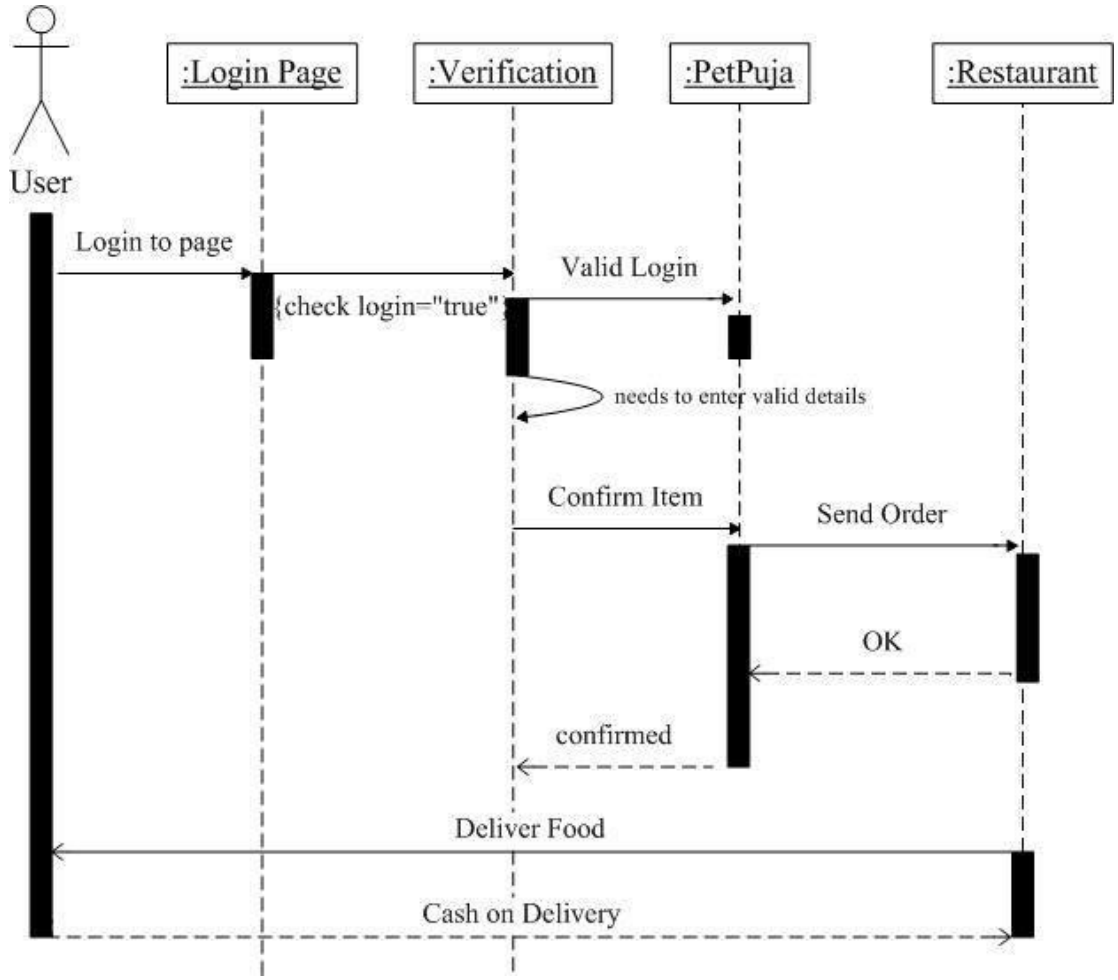


Fig. 3.8: Sequence Diagram

3.7. CLIENT SERVER ARCHITECTURE

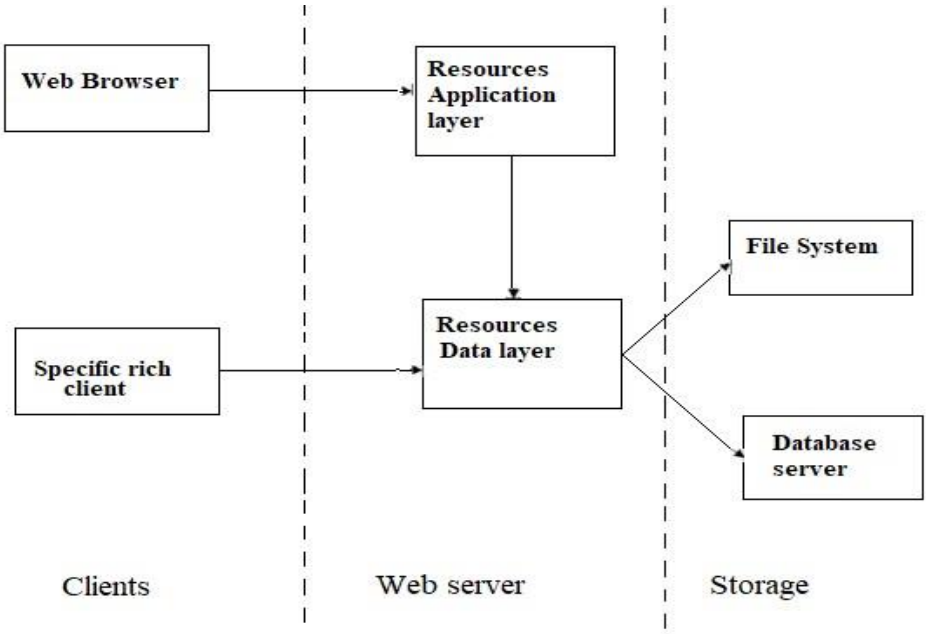


Fig. 3.9: Client Server Architecture

3.8. GANTT CHART

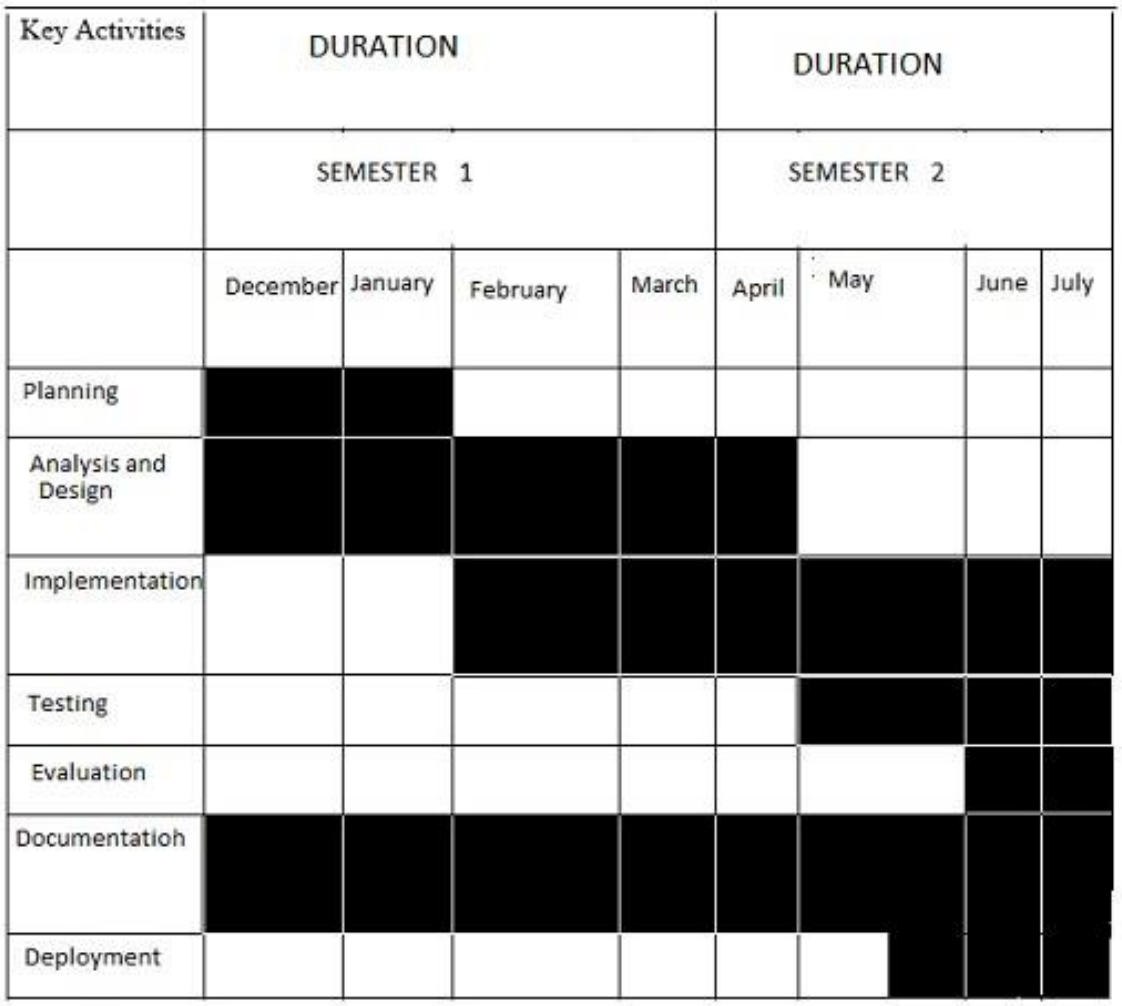


Figure 3.10 Gantt Chart

CHAPTER 4. EPILOGUE

4.1. RESULT AND CONCLUSION

Hence, we concluded that:

- This web application provides food ordering as well as restaurant booking functionality to the users.
- It provides the user with easy login and sign up facilities by using firebase database.

- Users can use real time map to locate the restaurants as well.

4.2. FUTURE ENHANCEMENT

We aim to implement the following enhancements in the future:

- Android, iOS app can be developed.
- Recommendation system can be implemented.
- Send push notifications to the customers about their orders and bookings.

Screenshots

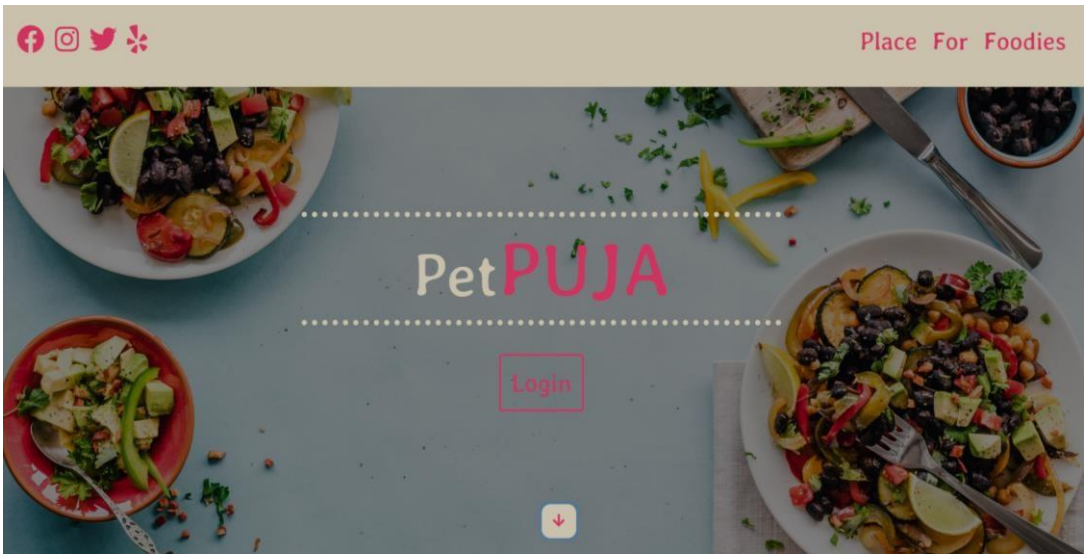


Fig: Home Screen

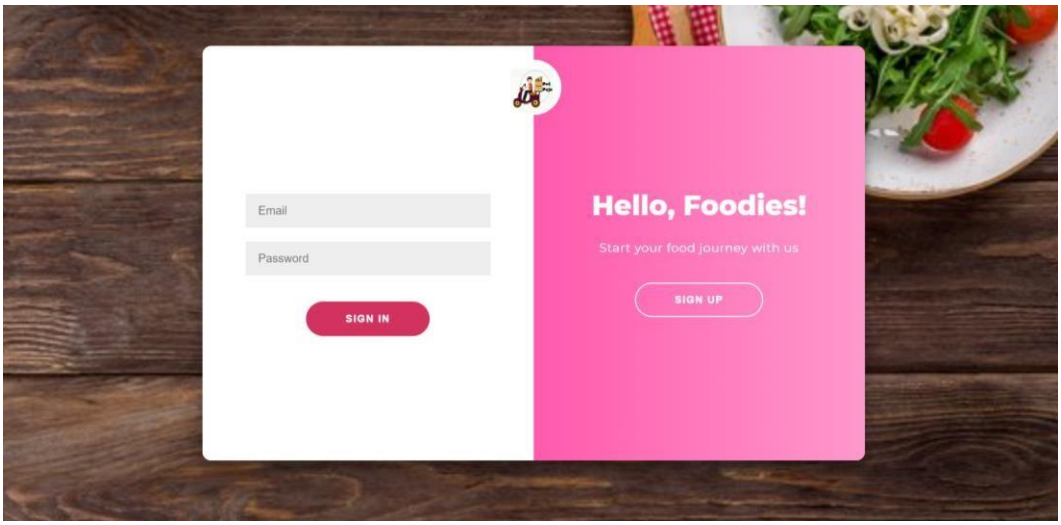
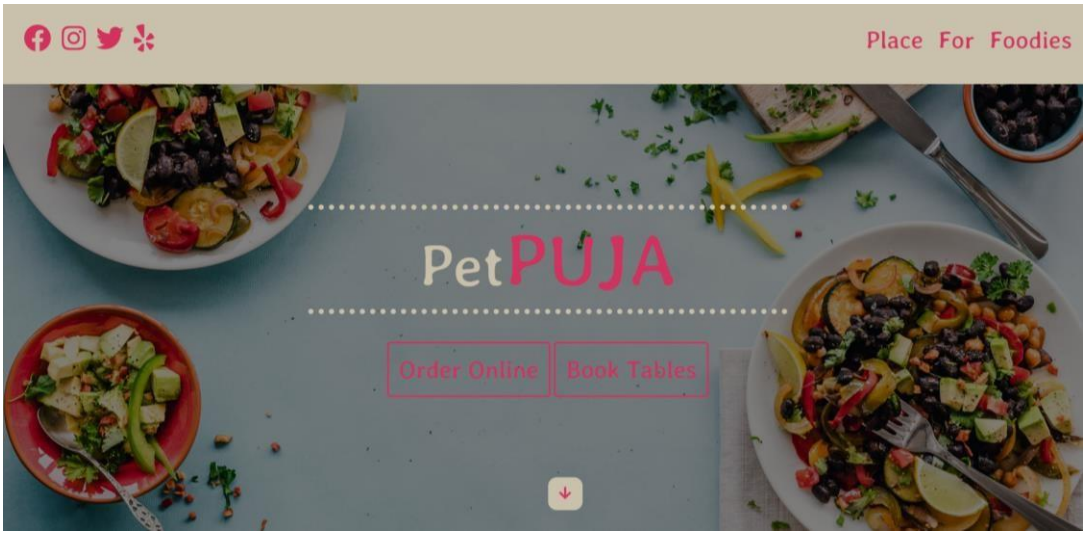


Fig: Login Page



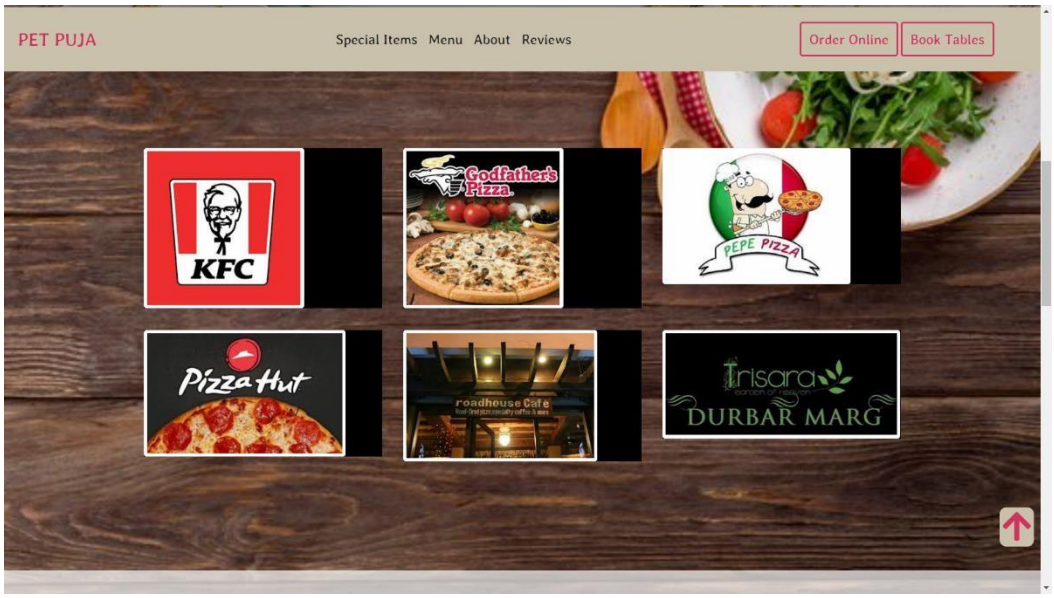


Fig: Main Page

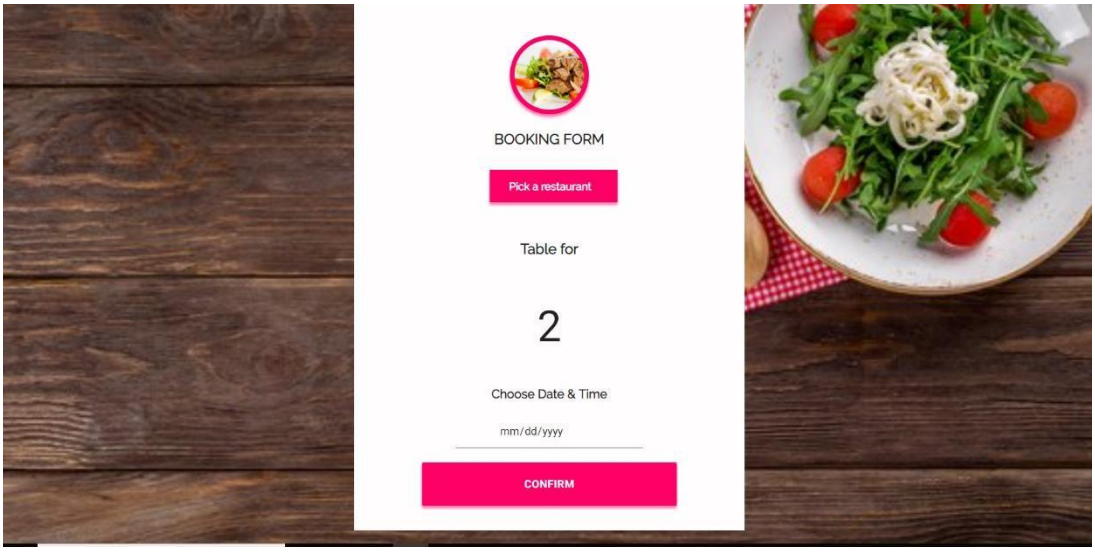


Fig: Booking Form

Fig: Order page

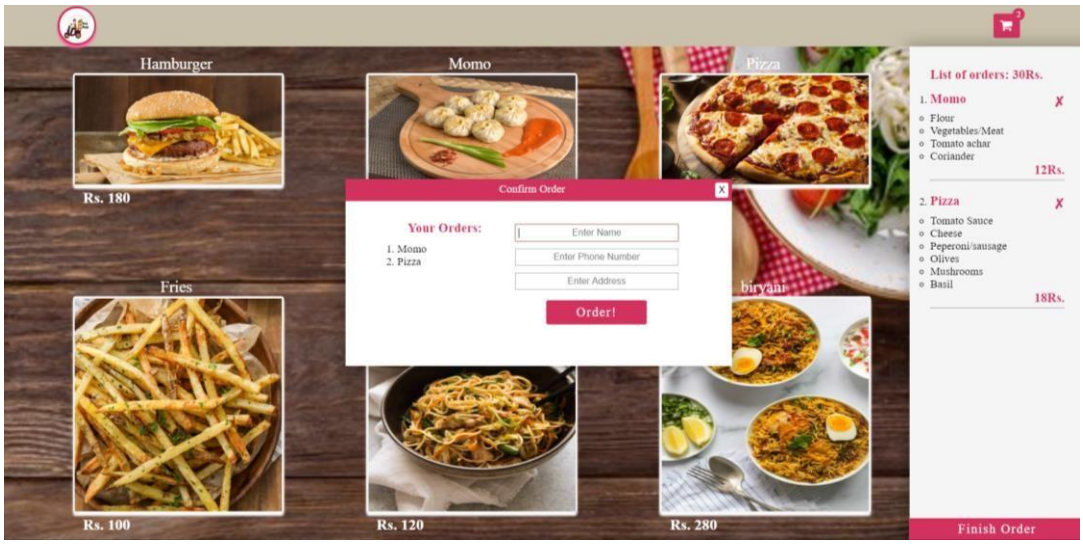


Fig: Cart system and order confirmation

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