THE SUPERIOR UNIVERSITY LAHORE

Faculty of Computer Science & IT

Final Year Project

PROJECT REPORT

Restaurant Expenses Teller & Order booking

Project ID: **[FYP-MCSM-S21-010]**

Project Team

Student Name	Student ID	Program	Contact Number	Email Address
Junaid Munir(L)	Mcsm-f19-140	Mcs	03061446360	mcsm-f19-140@superior.edu.pk
Mohsin Altaf	Mcsm-f19-134	Mcs	03486002692	mcsm-f19-134@superior.edu.pk
Aliya Hanif	Mcse-s20-007	Mcs	03207716977	mcsm-s20-007@superior.edu.pk

Mr.Muhammad Fiaz
(Lecturer)

Project Report

Restaurant Expanses Teller & Order booking

Author(s)	Version	Date	Notes	Supervisor's Signature
Junaid Munir Mohsin Altaf Aliya Hanif	1.0			

APPROVAL

PROJECT SUPERVISOR

Comments: _____

_____

Name:_____

Date:_____ Signature:_____

PROJECT MANAGER

Comments: _____

_____

Date:_____ Signature:_____

HEAD OF THE DEPARTMENT

Comments: _____

_____

Date:_____ Signature:_____

Dedication

Dedicated to our beloved parents and to all those, whose prayers always pave to the success for us.

Acknowledgement

ALLAH THE ALMIGHTY, who gave us the strength to work to complete this project on time and with the best possible quality and our family and friends who supported us in every step of life and mostly the past four years of university life.

We would like to thank and sincerely acknowledge the help of our supervisor Mr.Muhammad Fiaz whose complete guidance, support and encouragement gave us a real motivation in doing this project. We would like to thank all the volunteers who helped us out while testing of this application.

Executive Summary

Virtual foodstuff distribution system is a very well-known matter in present-day. With the speedy growth of up-to-date society, many restaurants have exploded up which unusual now providing online food delivery as well as serving the customers on time. The service providing enterprises have single extensions to keep the method of foodstuff distribution. There have been several issues regarding this matter and quick changes are occurring regularly for these things. So, this report includes some ways how the fundamental foodstuff distribution system is managed and how they could be developing in upcoming

Table of Contents

List of Figures

Chapter 1

Introduction

Chapter 1: Introduction

The **"Restaurant Expanses teller and Order booking"** is related to Restaurant. The domain of the project resides in the whole circle of restaurant in the city. It will cover all the restaurants of the city. The Application of this project will help the user to get all information related to meal; they will book the order using this new technology by sitting at their homes.

1.1. Background

The popularity of restaurants has increased in recent years. The general practice in a restaurant involves the customer making his order and waiting for the ordered meal. However, the complaints received from customers regarding services offered in restaurants have increased too. This feeling of dissatisfaction is caused by many reasons, namely, delay in delivering customer's order. Advancement in communication technologies can be used to resolve these issues. Accordingly, this removing the limitations in the food ordering process, with the help of an integrated and networked system. This application involves the use of mobile phones for undertaking the food ordering process in restaurants.

Restaurant Expanses teller and Order booking is a restaurant business management system. The key point of building this project is to help restaurant manager manage the restaurant business and help customers order online and booking the table.

The project is developing because; many restaurants are very difficult to manage a business such as customer order and booking table. With the use of customized customer layouts it is difficult to wait to maintain the correct customer details and possibly lose customer information. Therefore, an online restaurant management system will be developed to help restaurant manager manage restaurant management and customers set up their online ordering and booking table. Apart from that, the project is to improve the craft system and make the business more accessible and organized.

1.2. Motivations and Challenges

The motivation for designing the Restaurant Expanses teller and Order booking application came because my family is involved in the fast-food business and I do not like

waiting for long in the store or having to call the store to place an order especially during the peak lunch or dinner times.

Furthermore, I value recent learning about the Flutter and dart programming language as well as seeing how commanding and dynamic they are when it comes to web designing and mobile applications. I found them to be exceptionally useful while working on the tools.

1.3. Goals and Objectives

The over-all objectives of the study are to develop a consistent, suitable and accurate Ordering System.

The study has the following particular objectives:

- To develop a system that will surely fulfilled the customer deal.
- To design a system capable to accommodate vast amount of orders at a time.
- To estimate its performance and suitability in terms of safety, user-friendliness, correctness and consistency.
- To improve the communication between the client and the server and minimize the time of ordering.

One of the main objectives of a restaurant to confirm customer fulfillment. Manual listing of orders by the waiters/waitresses may result in to slow response in customer service. Therefore, if the restaurant uses the suggested system, the operation of orders to the customers is so relaxed and fast by just touching on the tablet and selecting the favorite menu.

1.4. Literature Review/Existing Solutions

There are many android apps are used in

1.4.1. Supermeal

Supermeal is a gateway for foodies of Karachi, Hyderabad, Islamabad, Rawalpindi and Lahore to order food online. It has all the common features like menus, special deals and pictures from different restaurants, amounts, distribution/take-away options and locations. And above you can get concessions and get points when you order virtual. You can smooth rate and review the restaurant and food based on your experience. Other than ordering food and paying cash on delivery, you can also understand a list of nearby places that offer take-out orders.

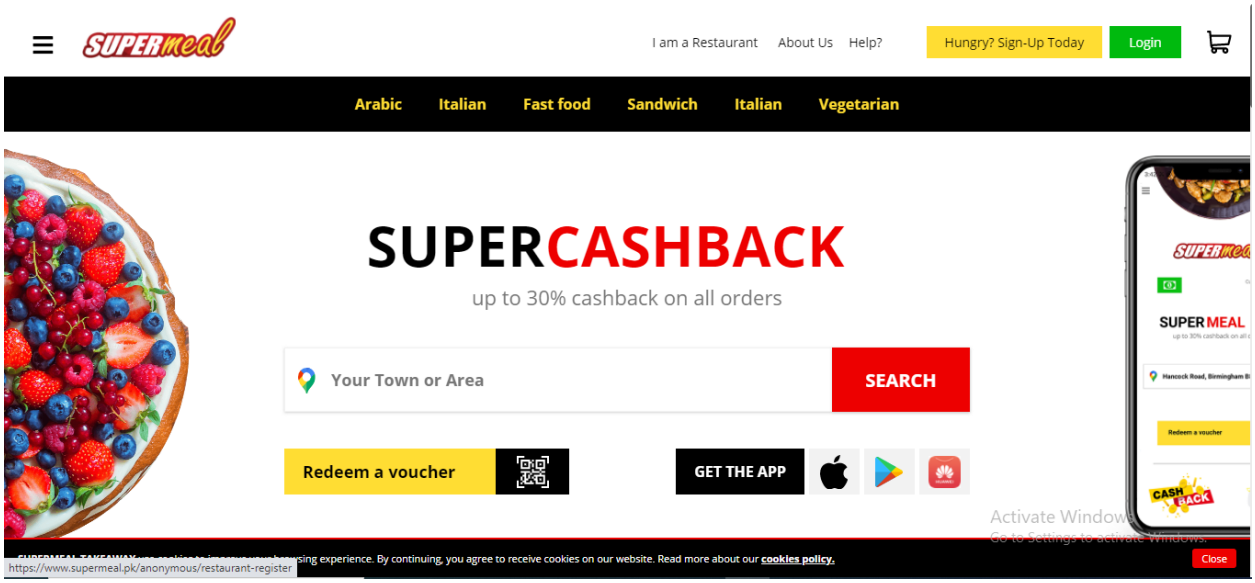

Figure 1

1.4.2. Toss down

It is a fine option to find menus of various different restaurants at one place. The site also features special tips, reviews and photos shared by other foodies. Other than the location and contact details the available facilities, like Wi-Fi and parking, are also mentioned. There's an option of online reservations with exclusive discounts for some restaurants and bakeries (for "Khaba" card holders)

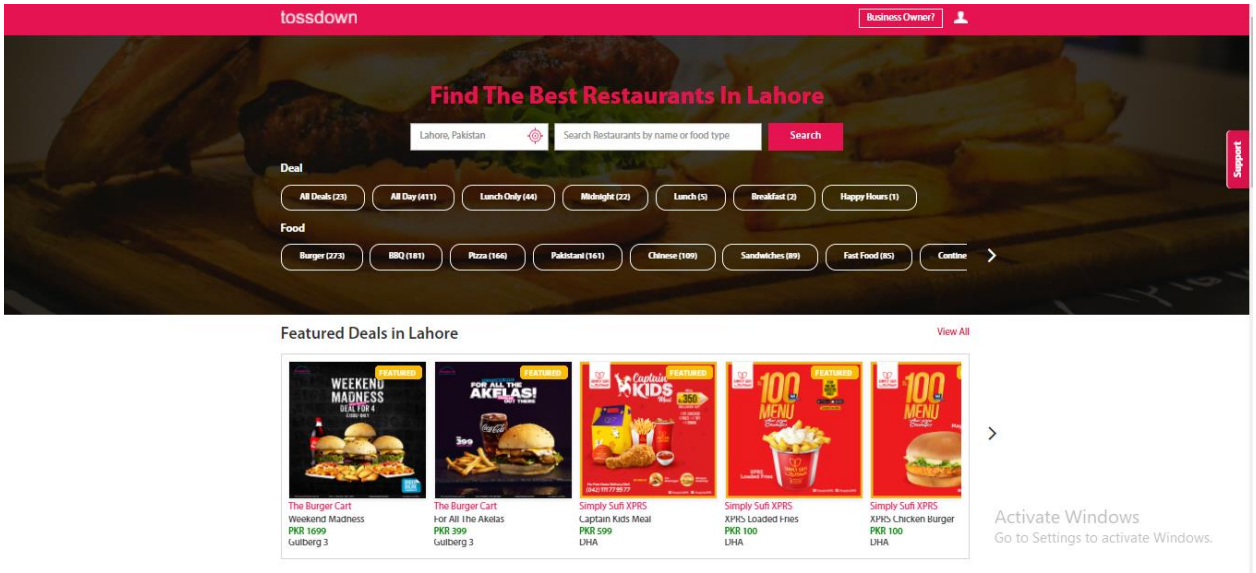

Figure 2

1.4.3. Food panda

The process is simple; browse (nearby restaurants and their menus), order, get it delivered to your home, office or any place from the delivery locations offered. While searching through the cafés and restaurants the results can be filtered by cuisines, prices and a few other options. As with all the online food deliveries, it'll spare you the hassle of placing an order by phone and having to talk to the restaurant staff explaining to them what you want.

The app also mentions the minimum order amount for delivery from each restaurant, delivery fees (if any), estimated delivery times as well as users reviews about the restaurants.

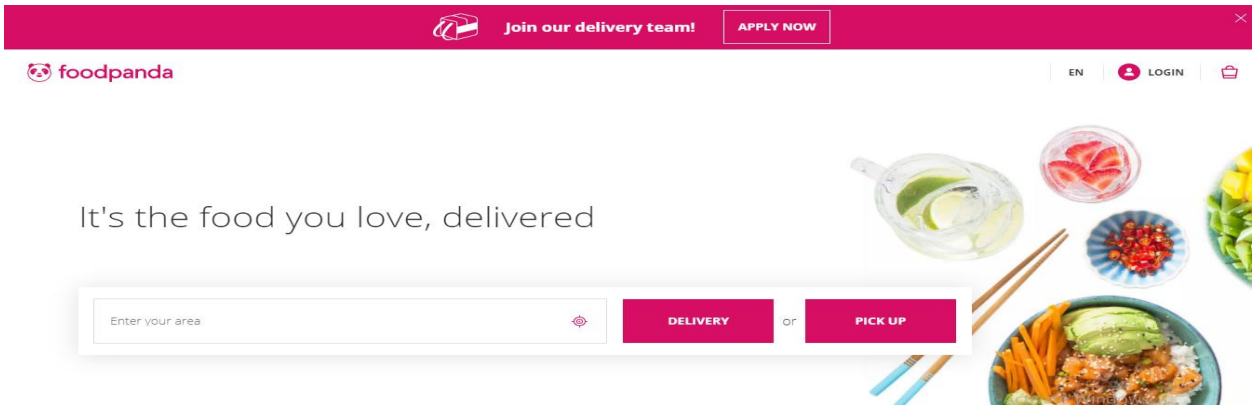

Figure 3

Gap Analysis

Restaurant expanses teller and Order booking is going to be developed to overcome the issues that are missed before like calculate the expenses before order or reserve the table check the location of restaurants, reserve the table and order the meal. Restaurant expanses teller and Order booking will recommend the user according to their choices. Another website and apps provide some of these facilities with the bounding of the room. Our app will provide the facility to search in their range and place order while they are sitting at home or other remote places. The user will have to pay first before order a booking. Our system will also provide the facility to the user that the user can enter his/her amount and the no. of persons to eat the meal after the user enters information the system will recommend the restaurants and the dishes that they can afford. Another phase of the app recommends on behalf of the interests of the user. The user entered his interests and the system will recommend according to the interests of the user. The restaurant is a major part of this system. Restaurant managers can upload/offer their services and deals. They also registered as a service provider of any restaurant

1.5. Proposed Solution

In daily life, we go to Restaurants on different occasions like ceremonies, etc. Sometimes we go out of range/budget according to money. Sometimes without Information, we go to a costly restaurant and we have to pay a large amount that we are not willing to pay. Sometimes we are not satisfied with the serving facilities and the environment of the restaurant. We may have no idea about the restaurant's location in our region. The following are the other problems that people face.

- Much of the time is wasted in waiting for the dish.
- Time is wasted in searching for Restaurants.

This system is suggested to resolve all these issues

1.6. Project Plan

This is our project plan that tells about how our Android Application operates by and with following responsibility matrix, WBS and Gantt chart.

1.6.3. Work Breakdown Structure

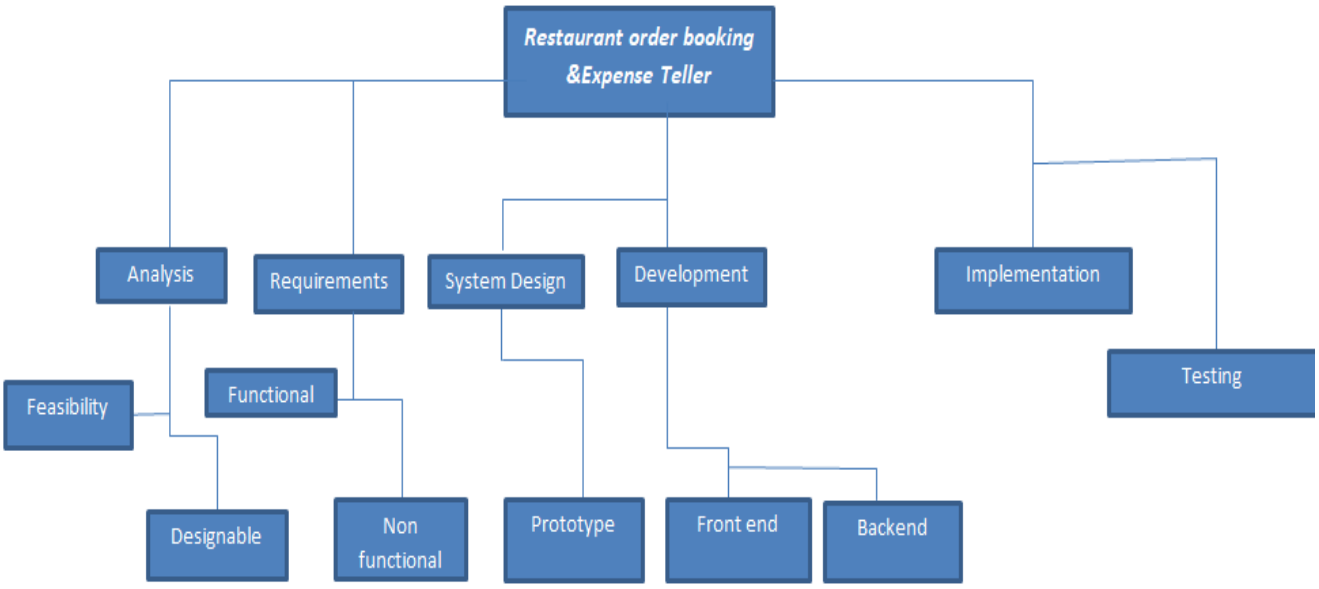

Figure 4

1.6.4. Roles & Responsibility Matrix

WBS #	WBS Deliverable	Activity #	Activity to Complete the Deliverable	Duration (# of Days)	Responsible Team Member(s) & Role(s)
1	Project Planning	1 2 3 4	Create Vision Document Setting Task b/w the team members Creating WBS & Gantt Chart Documentation project Proposal	10	Junaid Munir Mohsin Altaf Aliya Hanif
2	Research	1 2	Research Existing online restaurants Application Research the scope	7	Junaid Munir Mohsin Altaf Aliya Hanif

3	Implementation	1 2 3 4 5	Prototyping Coding and documentation Testing and Documentation Final Outcome Last check and Documentation	55	Junaid Munir Mohsin Altaf Aliya Hanif
4	Evaluation	1 2 3	Evaluating the management skills Evaluating the idea Evaluating the whole project	10	Junaid Munir Mohsin Altaf Aliya Hanif
5	Documentation	1	Formalizing the documentation	10	Junaid Munir Mohsin Altaf Aliya Hanif

1.7. Report Outline

2. The Requirement was gathered in about 15 Days.
3. • The Documentation will be made in a 4 months.
4. • The coding and data were implanted in almost 4 months.
5. • The Test were made, and errors were debugged after and through the coding period.
6. • Validation and finalization in added golden days.

Chapter 2

Software Requirement Specifications

Chapter 2: Software Requirement Specifications

2.1. Introduction

2.1.1. Purpose

These document offerings complete details of the points, structures, user interface and application of Restaurant expense teller and order booking in real life. It will also define how the system will implement and under which it must control. In this document it will be also shown user interface. Together the participants and the makers of the system can benefit from this document.

2.1.2. Document Conventions

1. We use the Italic Calibri font to write the Dedication and the Acknowledgment at the start of the document
2. We use the Calibri font family with the 12pt font size to write all the details of the document.
3. We use the Calibri font family with the 14pt font size to and bold to write all the headings in the document.
4. We use the Calibri font family with the 11pt font size to write all the description of the figures and tables of the document.

2.1.3. Intended Audience and Reading Suggestions

An existence system has a number of problems in the working procedure for the organization and customers. These problems are

- It may be difficult to the users to access the data on his android device.
- The customers may not get the important information of his android device when he wants.
- The contact between the admin and customer may be difficult.

2.1.4. Product Scope

In the present age, the restaurant has become an interesting field. So there should be a good and easy platform for the people so that they can enjoy it without any

worries. With this Project person as a user will be able to enjoy an easy meal. By using this project user will be able to insert his/her requirements he is expecting from the restaurant and the system will recommend him accordingly. Also, the user will enter his money range and persons the system will recommend the user-related things to his Money range. The most Important our order placement will allow the user to place an order for some sort of dishes they are interested in when he reached restaurant the food will be prepared already. Users will place the order while sitting at home or other distant places from the specified restaurant. The user will be facilitated by the location service of the Restaurant.

2.1.5. References

IEEE standard document for software requirement specification.

2.2. Overall Description

2.2.1. Product Perspective

The software described in this SRS is the software for a complete RMOS system. The system merges various hardware and software elements and further interfaces with external systems. Thus, while the software covers the majority of the system's functionality, it relies on a number of external interfaces for persistence and UN handled tasks, as well as physically *interfacing with* humans.

2.2.2. Product Functions

- Food order via app
- Calculate expenses
- Check menu
- Review
- payment

2.2.3. User Classes and Characteristics

There is the following user of our system

Administrators:

- The administrators have complete control over all the activities that can be performed.

- They verify the user after he/she registers.
- They must provide rules for the Login.
- They must maintain the website and update the same making necessary changes at time.
- They must take care of the security issues involved in the login.
- They must inform the users about their login status and keep them updated about the progress through emails.

Customer

- They are the register member

2.2.4. Operating Environment

This system will operate on Android Smart Phone.

•Minimum Android Version 7.0 (lollipop) required.

•The processor should be core 2 duo or above.

•The processor's speed should be 2.8 GHz or greater.

•Ram should be or greater than 512 MB.

2.2.5. Design and Implementation Constraints

There are the following design and implementation constraints that we should keep in our mind during developing of the application.

• This system is working for single server

• Real Time Data Transfer protocol.

• Sketch or proto.io for prototyping the system

• **FIREBASE** used for manage the database specification

• Operating system required for this application is **Android Version 7.0 (lollipop)** or any other higher version.

2.2.6. User Documentation

There will be no user manuals, online helps or tutorials as it is made as simple as android beginners can also use it easily with best functionality. It will have user friendly interface so that it could easily manage and can be handled by all the actors

2.2.7. Assumptions and Dependencies

There are assumptions and dependencies that should be fulfilled for use of this application:

•User should have basic knowledge of English language and computer and smart phone usage.

•Admin monitoring the use of Website/application.

•Users have basic understanding on how to operate Android and Android Software.

2.3. External Interface Requirements

There are many types of interfaces as such supported by this software system namely: User interface software interface and Hardware Interface

2.3.1. User Interfaces

The User will interact with the graphical user interface (GUI). Formal standards will be followed to build our GUI. Mouse and keyboard will be required for the user input in our system. Android application will be interactive and will suggest hotels and dishes. The system must provide

- Theme of every interface is same
- Button styling and colors are same on every page
- Constraints on form filling and textbox should be applied

2.3.2. Hardware Interfaces

There shall be logical address of the system in IPV6

2.3.3. Software Interfaces

- **External machine interfaces**
- External Machine interface is not required since computation will be done on Windows OS and Android OS.
- **External system interfaces**
- This will only include the Firebase database for the products.
- **Human interface**
- The software will use a Graphical User Interface coded in XML.

2.3.4. Communications Interfaces

The Mobile Monitoring system shall use the HTTP protocol for communication over the internet and for the intranet communication will be through TCP/IP protocol suite.

2.4. System Features

The system is going to consist of multiple modules, each separately developed with their own features.

2.4.1. Register Account

Description and Priority

If customer/user wants to buy the product then he/she must be registered, unregistered user can't able to use our auto generate LMS. For this purpose, user/customer will register to the system.

Stimulus/Response Sequences

- User first clicks on the button or link to initiate registration process.
- System prompts the user to fill out his/her first name, last name, address, email address, and their password.
- User enters fields.
- System validates the user's information.
- System creates a new account for the user.

2.4.1.1. Description and Priority

This feature used by the user to login into system. A user must login with his user name and password to the system after registration. If they are invalid, the user not allowed entering the system

2.4.1.2. Stimulus/Response Sequences

1. User clicks on the button or link to initiate the login process.
2. System prompts the user for his/her email and password.
3. System verifies the information.
4. System displays account home page to the user.
5. User clicks the button or link in order to initiate logout process.

Functional Requirements

- ***User Login***

- User must provide his Information to be logged in, to use the services. The user must enter his.
- Username
- Password
- ***User Register***
- Users have to provide basic information to get his username and password to use the services. The user must give following information.
- Full Name
- Contact number
- E-Mail
- Set username
- Set password
- Payment method
- ***Order Booking***
- Order booking must guide the users accordingly. The user must insure payment online when He/ She places order online. The payment must be delivered online to get order booked.
- ***User Database***
- User's Database must be developed in order to save records of the user and. Because the user data must be required Suggestions. The database may have the following tables
- User Info table
- User Choices table
- User Requirements table
- ***Hotel Database***
- Hotel Database is required for Hotel Suggestions and Dishes Suggestions. The following tables may be include in database
- Restaurant Info
- Restaurant Location
- Dishes
- ***Application Interface***

User Interface on Android App must facilitate the user and should provide user friendly facilities. It must provide the user Facility of calculate expenses.

- ***GPS***

GPS Facility will provide the services of **Location** to the User of the application. So the App user found the address of the restaurant.

- ***Search Restaurant***

The System should also provide the facility to search hotels at their choice, and according to their need.

- ***Payments***

The payment system should be online because user will book order remotely. So for the security the payment should be online at the time of order booking.

- ***SMS Notifications***

The system will notify the user about his requirements and Choices he made. The system will also notify user about updates and changes in the system.

Other Nonfunctional Requirements

Performance Requirements

Usability

The system interface shall be easy to use. The system should be user friendly, so that the user can use it easily.

Reliability

The system shall be reliable and available 24/7 for use. System must be reliable, accurate and simple. So the individual can easily understand the interface. The interface of the system is developed keeping in mind that it should be good looking, attractive and easy to understand. The system should be self-Explanatory.

Integrity

The system must be error free, secure and should be quick in response. The system should show error message whenever a user violates the rules and regulations of the system.

Performance

The system must perform accurately and swiftly. The response-Time should not be more than 3-5 seconds.

Safety Requirements

- Once administrator erase record or client account the information of that client can't be recover. To deal with this difficult framework gives cautioning before erase the record.
- Safety disclaimers will be given for the two understudies and educators.
- On the off chance that any client has some issue while utilizing the webpage, so he can contact by means of mail to site maintainer

Security Requirements

- Security is one of the significant worries of nowadays. Our framework depends on following security boundaries which are given beneath:
- This product keeps the data of understudies and educators safe.
- User will be enrolled after confirmation of client information.
- Secure login and logout. In the event that leaseholder fails to remember his record accreditation than he needs to get new qualification through his sign-up email.
- Admin zone will be made sure about.

Chapter 3

Use Case Analysis

Chapter 3: System Analysis

This chapter describe about system use cases and how the different actors are interacting with the system. This system is all about use case of system and role we assign and categorize the user of solution. We describe the all terms about the use case model and use case diagram of every role. At the end we make a proper dressed use case model of our project

3.1. Use Case Model

The most convenient use case diagram is a representation of the user's communication with a system that shows the relationship between the user and the various operating conditions in which the user is involved. The use case diagram can identify different types of program users and different application cases and will often be associated with other types of drawings. Use cases are represented by circles or ellipses.

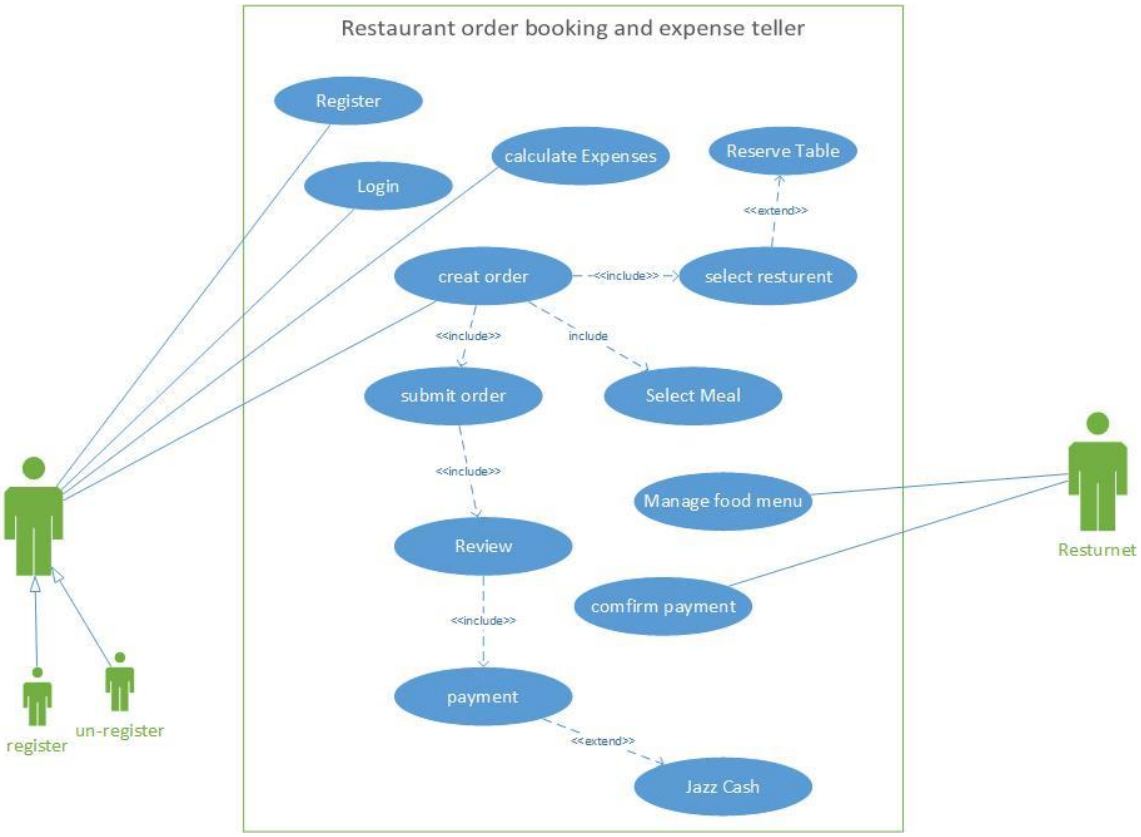

Figure 5

3.2. Fully Dressed Use Cases

USE CASE (FULLY DRESSED)

3.2.1 Searching criteria

Use case name	Enter money and person
Use case id	001
Description	The user will enter money and person for searching deal in their criteria.
Actor	Users
Pre-condition	Showing searching box
Basic flow	User enter their amount and money The system searches suitable deal in their criteria
Alternative flow	User closes form
Post condition	The user selects their deal.

Table3.1 Searching fully dressed use case

3.2.2 Facilities

Use case name	Enter facilities
Use case id	002
Description	The user will be also facilitated with their choice of searching.
Actor	Users
Precondition	Everything between their criteria.
Basic flow	User select their require filter for selecting meal
Alternative flow	User closes form
Post condition	The user selects their deal.

Table3.3: Facilities fully dressed use case

3.2.3 Login

Use case name	**Login**
Use case id	003
Description	The user will login in their accounts by providing their user name and password
Actor	Admin, Restaurant, users
Precondition	Showing login interface
Basic flow	1. User selects their respective option 2. user enter their id and password 3. user is logged in the system 4.if user first time visit so save the username, password and other information in database for later login
Alternative flow	User closes form
Post condition	The user is logged in the system

Table3.3: Login fully dressed use case

3.2.4 CREATE PROFILE:

User case name	**Sign up**
Use case id	004
Description	User and Restaurant will add their record
Actor	Admin,User and Restaurant
Precondition	Show signup form
Basic flow	User enter essential information. User verify their identity by different means.
Alternative flow	User will close form
Post condition	User will be added

Table 3.4 sign up fully dressed use case

3.2.5 Order:

User case name	**Order**
Use case id	005
Description	Register customer will place their order.
Actor	User
Precondition	Show signup or login form
Basic flow	User check for the order
Alternative flow	User will close form
Post condition	User will add item in cart

Table 3.5: Order fully dressed use case

3.2.6 Add item:

User case name	**Add menu**
Use case id	006
Description	Our customer select their item of eating through our site
Actor	User
Precondition	User open order interface
Basic flow	User add their order in cart.
Alternative flow	User will close form
Post condition	User will review their order.

Table 3.6: Add item fully dressed use case

3.2.7 Order:

User case name	**Order**
Use case id	007
Description	Here user will check their order is manageable.
Actor	User,Restaurant
Precondition	Order in cart
Basic flow	Check order item one by one
Alternative flow	Remove item
Post condition	User will pay their order payment.

Table 3.7: Order fully dressed use case

3.2.8 Payment:

User case name	**Payment**
Use case id	008
Description	The user pays for their order by using different medium.
Actor	User, Restaurant
Pre-condition	Review order
Basic flow	Check order item one by one and ready for payment
Alternative flow	Not pay
Post condition	Order delivered.

Table 3.8: Payment fully dressed use case

Chapter 4

System Design

Chapter 4: System Design

The Chapter is all about how the software is going to work and how will the processes be executed as we see we have several diagrams that shows how really is the system performing and what will be the requirements to perform the operations required tasks as well as the diagrams and data clearly describes the process and shows a great help in understanding the

4.1. Architecture Diagram

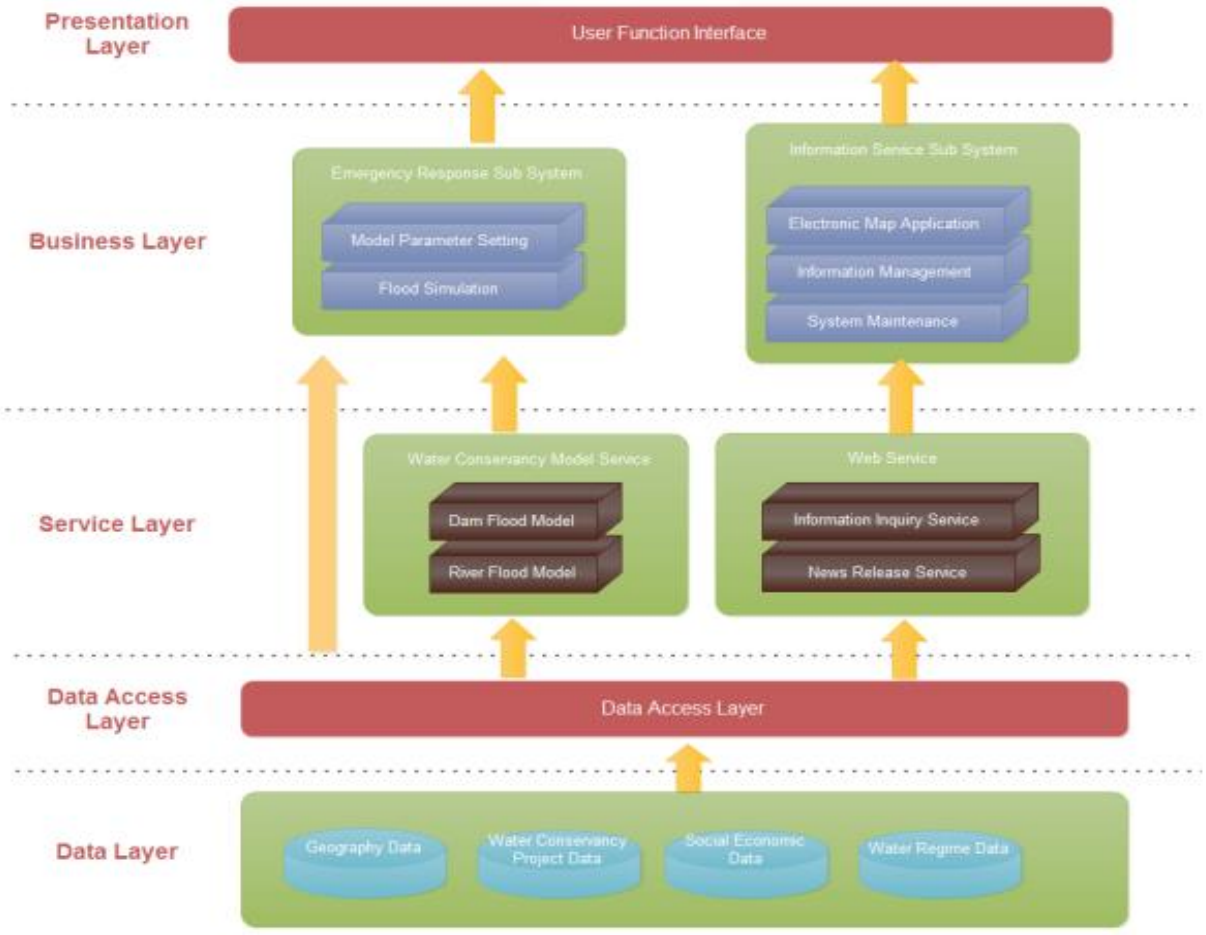

Figure 6

4.2. Entity Relationship Diagram with data dictionary

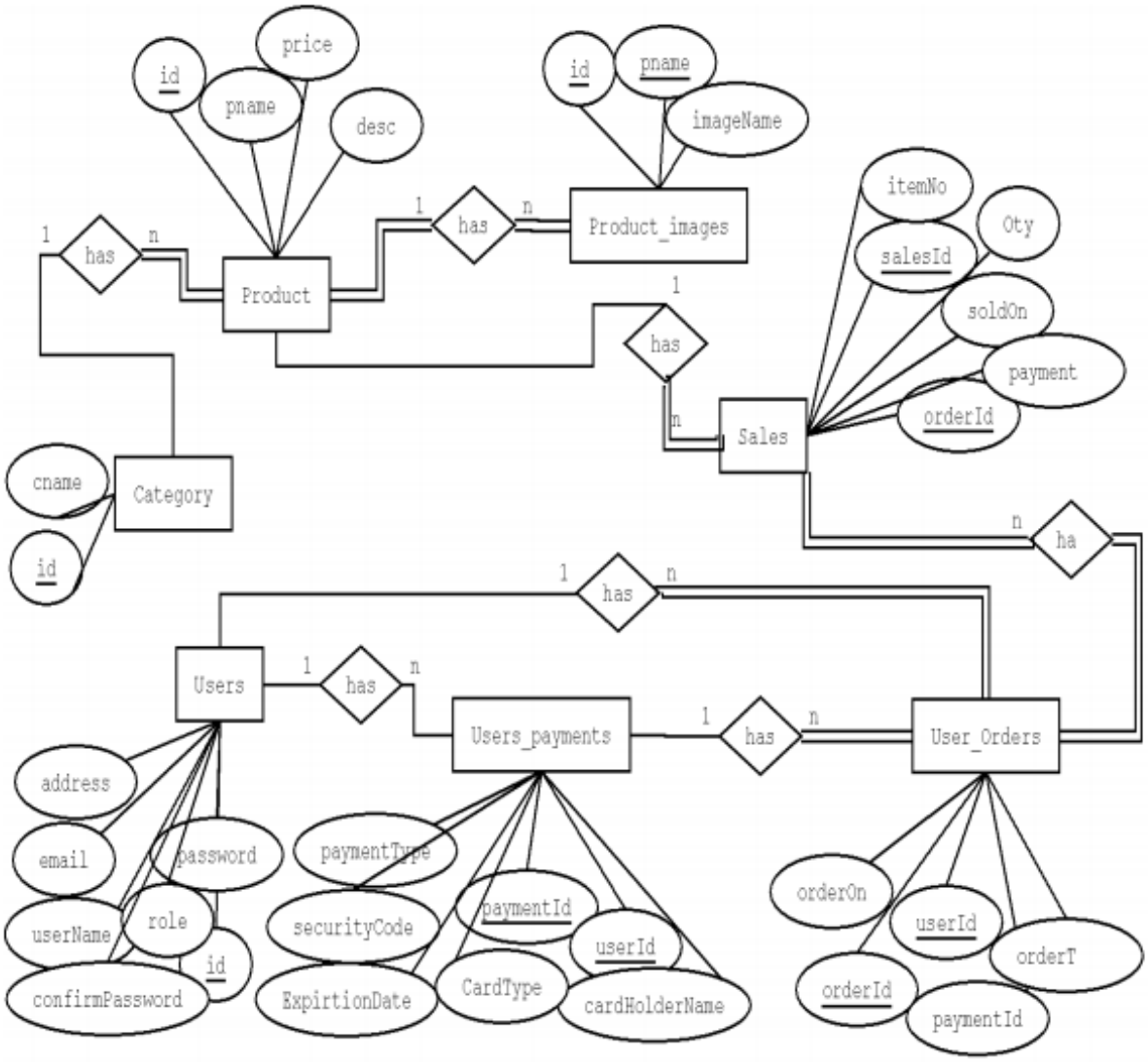

Figure 7

4.3. Class Diagram

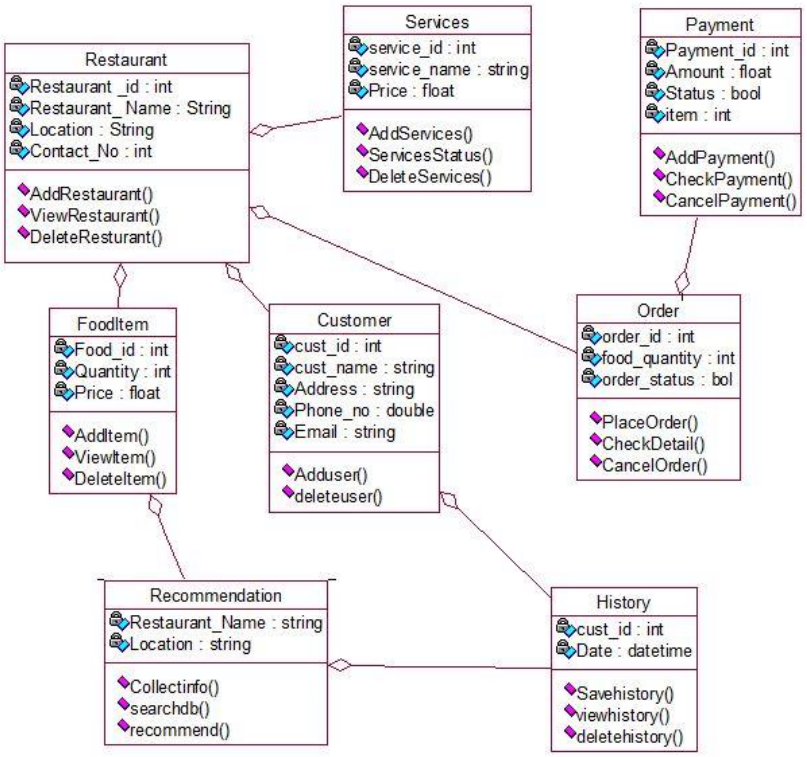

Figure 8

4.4. Sequence / Collaboration Diagram

4.7.1. Sequence diagram for user:

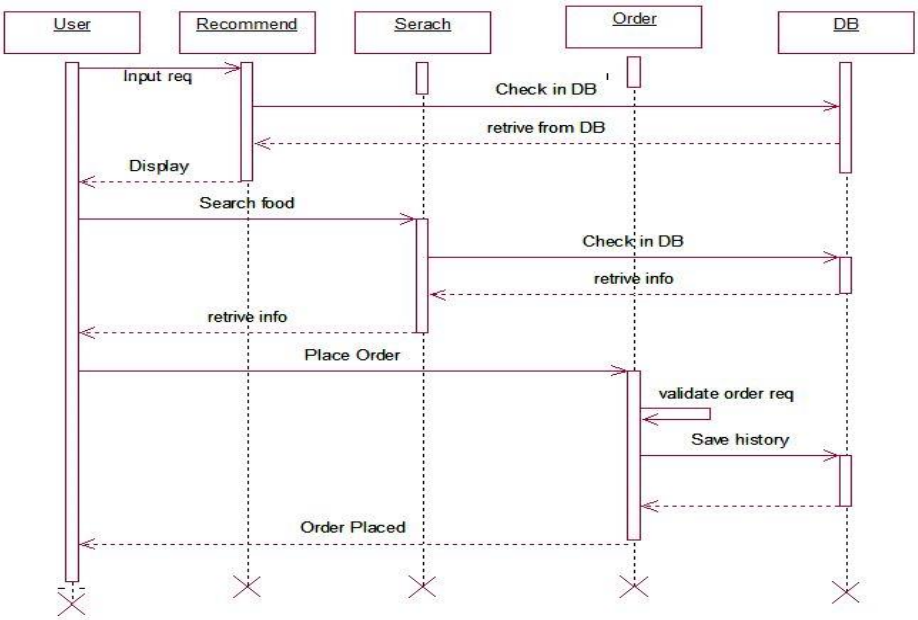

Figure 9

Sequence diagram for user

Sequence diagram for Restaurant:

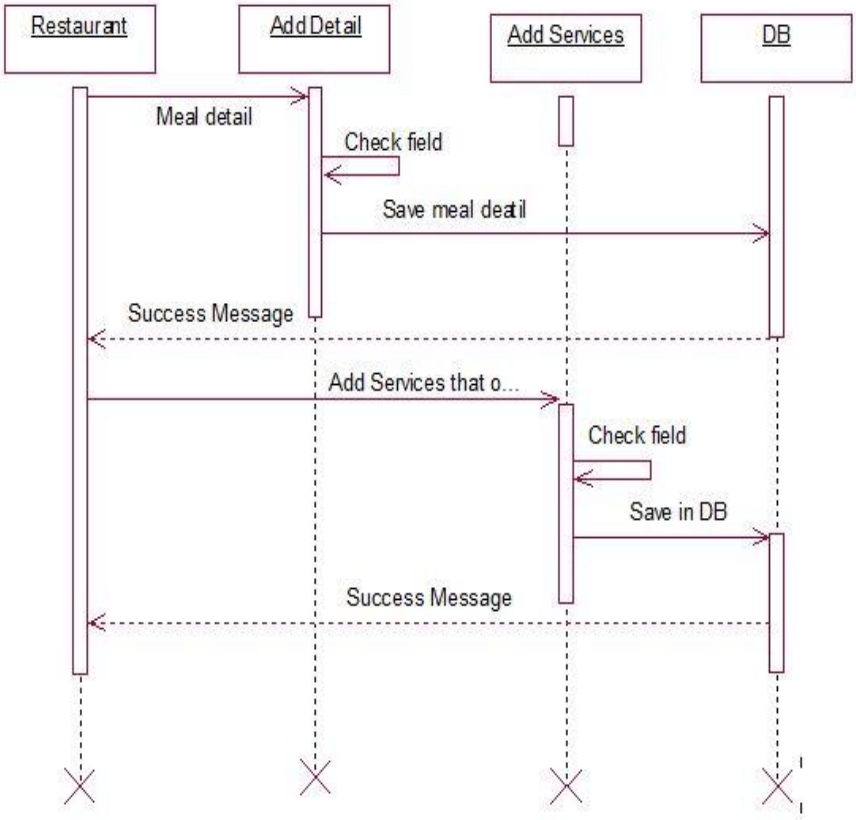

Figure 10

4.8. Activity Diagram

Activity diagram for Register user:

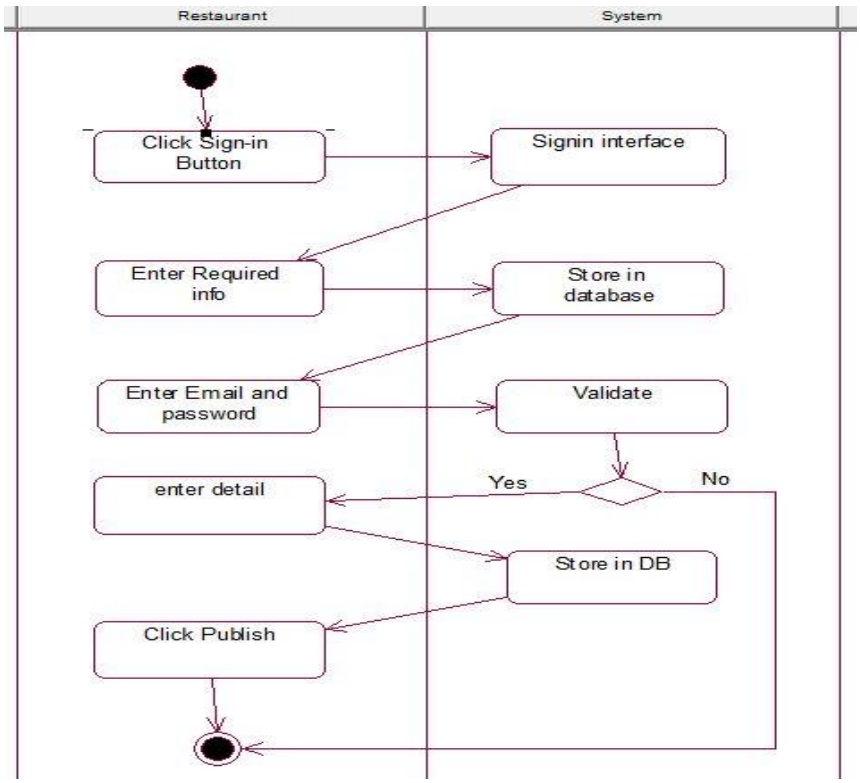

Figure 11

Activity diagram for register use :

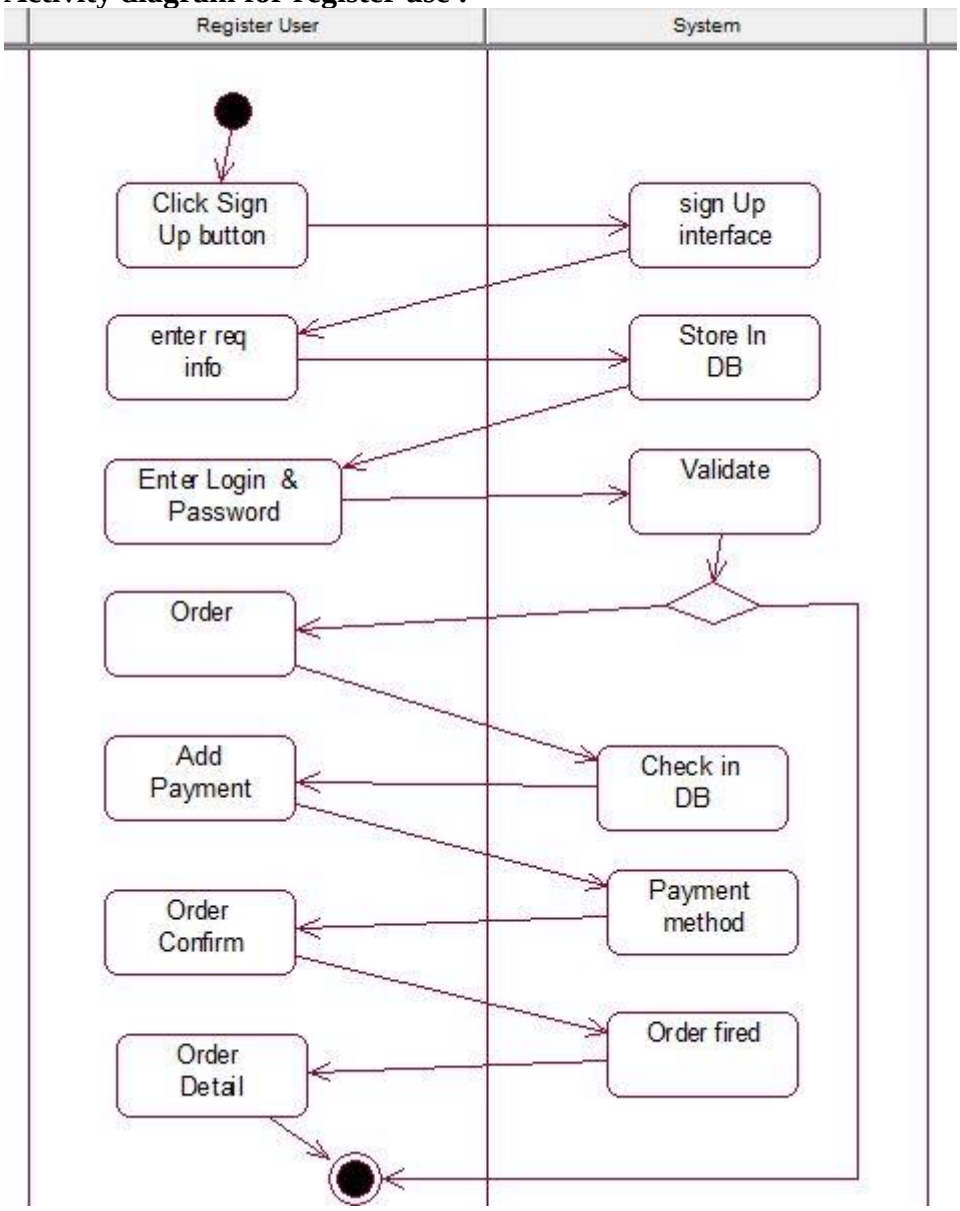

Figure 12

Activity diagram for visitor user:

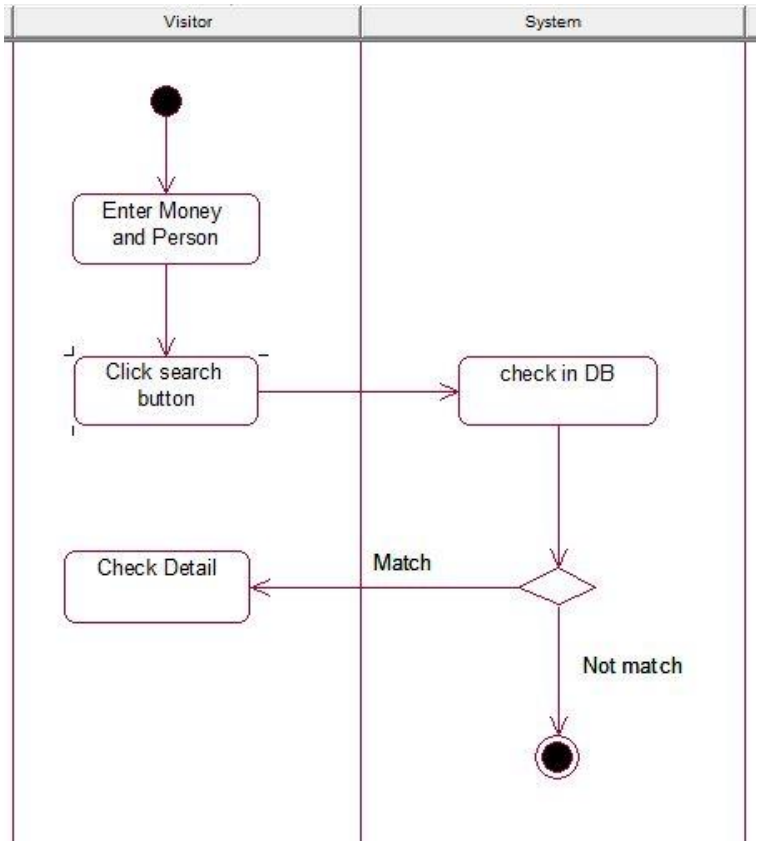

Figure 13

Activity diagram for Admin:

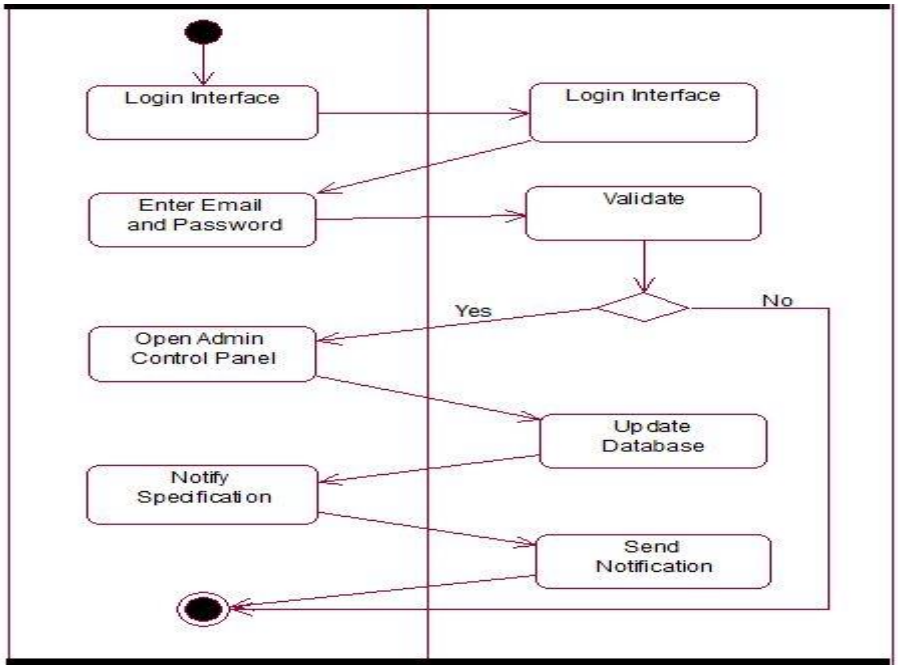

Figure 14

4.9. Component Diagram

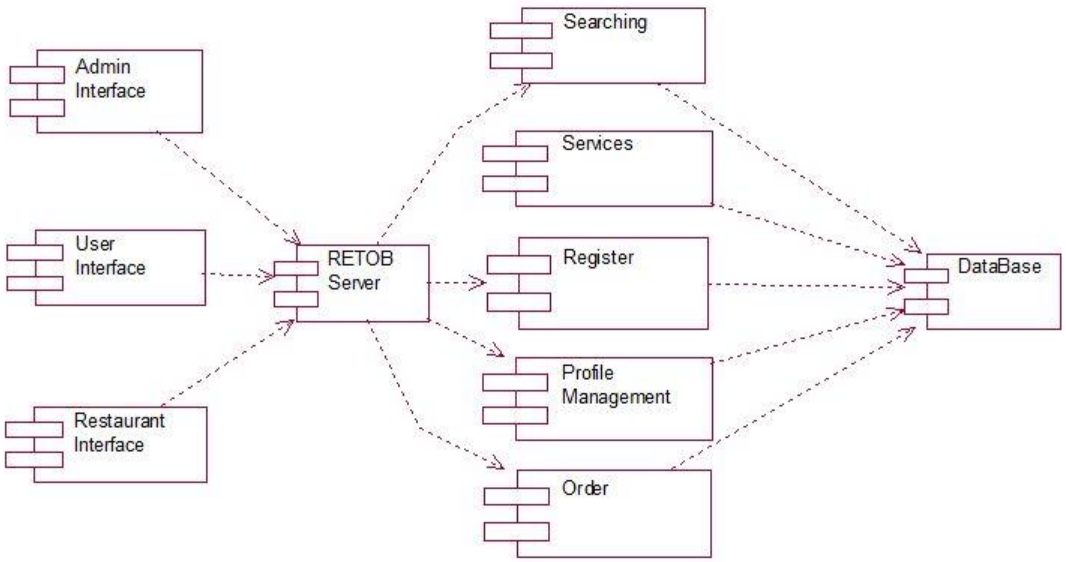

Figure 15

4.10. Deployment Diagram

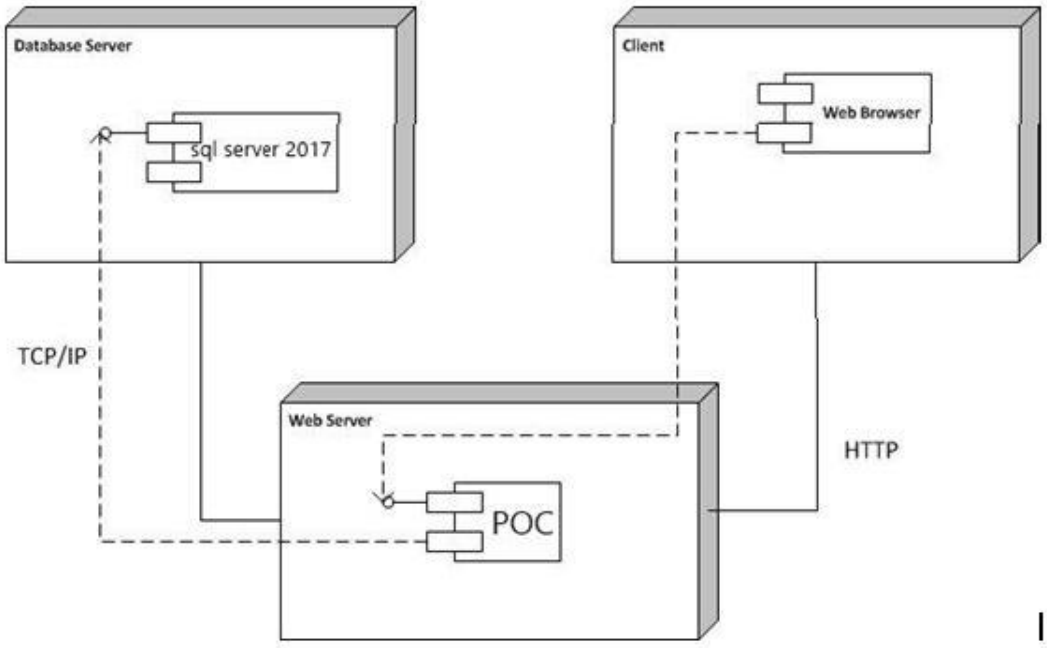

Figure 16

Chapter 5
Implementation

Chapter 5: Implementation

5.1. Components, Libraries, Web Services and stubs

1. Java
2. android
3. The components to be used will be the main components as in:
4. Adobe illustrator
5. Microsoft Visio 2013
6. Firebase

5.2. Deployment Environment

In Deployment environment we work on android studio for build our android based application

5.3. Tools and Techniques

Tool	Android Studio, visual code
Languages	Java,XML
Data base	Firebase

Table 1 : tool and technique

5.4. Best Practices / Coding Standards

- Communication with stakeholders
- No repetition of coding
- Every requirement is documented
- Function and classes are always commented during coding
- Use a detailed work definition document
- WBS (work breakdown structure) should be made to follow plan.
- Ask for feedback
- Agreements should be managed by admin if needed.
- Meetings should be arranged.

5.5. Version Control

Now we just working on version 1 after the passage of time we changed the version. From the start of the project number of versions updated and finalized now version 1.5 mentioned here.