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TITLE OF THE PROJECT

TRADITIONAL FOOD HOUSE

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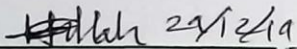
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APPROVAL

This Project titled "Traditional Food House ", Submitted by Md Alauddin, ID No: 182-16-339 to the Department of Computing & Information Systems, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computing & Information Systems and approved as to its style and contents. The presentation has been held on 29-12-2019.

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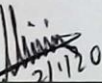
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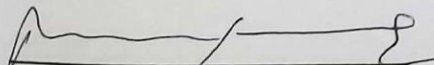
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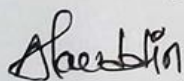
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Dedication

My parents are my inspiration, without them I am nothing in the world. They tried their best so that I can complete the entire course properly. So, I want to dedicate this project to my parents. I think they deserve this honor.

Executive summary

The project is all about traditional foods in Bangladesh. This is an online web platform where customers can buy different types of traditional foods from different places in Bangladesh. Customer can choose product, search product then add to cart product. When customers want to check out from the system customers need to registration for giving payment details. After giving payment details customer can see their order status. Then admin will check the order and will assign a staff for delivery the product. When staff confirms the delivery, customers will see their delivery status as complete. The main aim of the project is to provide actual foods to the customers.

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Chapter 01-Introduction

1.1-Introduction:

In the modern era, people of all over the world are very much conscious about their time. Generally, nowadays People do not want to go outside for buying their goods or products, people are very much interested to buy their goods from their home. That's why people prefer online shopping which is most popular all over the world. Bangladesh is one of the countries which are becoming advance in technology. So Bangladesh people are also becoming interest in online shopping which is increasing significantly.

If we think about Bangladeshi people, most of the Bangladeshi people are food lover. There are different types of food available in Bangladesh. But most of the people are love to eat different types of traditional and popular food item. There are some traditional food items in different area of Bangladesh such as if we talk about Cumilla, Roshmalai is very popular and famous food item. Similarly other district also producing some popular and traditional food item such as Chandpur has Khir item, Hilsha Fish, Rajshahi has mango etc. So Tradition food item is one of the demanding products by the people of Bangladesh. This project will introduce a web platform where, people can buy different types of traditional food items which will save their time and money. More importantly they will find actual food item which they want. People can use this system from anywhere and anytime.

1.2- Documents Contents:

Chapter 1: Introduction

This chapter contains the brief description about the project

Chapter 2: Initial study

In this chapter, project overview, aim and objectives, problem areas and possible solution of the project will be discussed.

Chapter 3: Literature Review

Problem domain, deep critical analysis on existing system and recommendation approach of the system will be discussed in this chapter

Chapter 4: Methodology

In this section, various types of project development methodology will be discussed. And need to identify the best methodology for this project. And provide justification for choosing this methodology.

Chapter 5: Planning

In this chapter, contains project planning which include test plan, project plan, risk management, quality management and change management.

Chapter 6: Feasibility

In this chapter, all types of feasibility and cost benefit analysis of the project will be discussed

Chapter 7: Foundation

In this chapter, problems areas are identified along with Rich picture and other possible solution of the system.

Chapter 8: Exploration

This chapter contains different types of diagrams and requirement catalogue and prototype will be provided

Chapter 9: Engineering

Here how the system is engineered and its activities will be discussed

Chapter 10: Deployment / Development

Project development and steps taken to develop the project will be detail discuss here

Chapter 11 – Testing

This chapter contains different types of system testing such as unit testing, integration system, module testing etc

Chapter 12 – Implementation

Mentioning implementation of the new system will be discuss here

Chapter 13 – Critical Appraisal and Evaluation

Objectives that are met and objectives that are not meet of the system will be discuss here

Chapter 14 – Lessons Learned

A brief discussion what things are learnt throughout the project

Chapter 15 – Conclusion

Summary, goal, success, value of the project will be discuss here

Chapter 2- Initial Study

2.1-Project Proposal

Initial Conception

Brief discussion of the concept: In the era of globalization, most people are doing their daily works through online. People are very much concern about their time and choice. Bangladesh is one of the beautiful country and most of the people of our countries are food lover. Bangladeshi people love to eat different types of traditional and famous foods from different places in Bangladesh. Such as Chandpur district is famous for Hilsha fish, Tangail district is famous for sweets; Cumilla is famous for roshmalai etc. Most of the districts of Bangladesh have different traditional food items. And people are loved to eat those different foods from different places. But there is a problem that, people do not find any kind of online shop which provides various traditional and famous foods from different places in Bangladesh. . Sometimes in local shops we can see that they are selling roshmalai or different products which are unhealthy and not maintain the quality of the products and price is also high.

That's why I have decided to build a system where people can buy different types of traditional foods in Bangladesh. My project aim is to provide quality foods to the customers. Through this project general people will be benefited those people are searching traditional foods with reasonable price. In this system, Customer can search or choose foods according to the district. For example, if I choose Chandpur then I will find products like Hilsha fish. My project main focus is to ensure quality and provide fresh products to the customer. Different types of functionalities and features are included in my system such as searching product according to the district, customer review etc. In this system, customer will find their choice able product with reasonable price which will saves their time and money.

Initial Research

- **Market viability:** In recent time, people of Bangladesh are facing one big problem which is they are not finding pure and actual food most of the time. In

Bangladesh people are very much interested to eat different traditional foods from different places such as most of the people like cumilla's roshmalai, Bogra' curd, Chandpur's Hilsha Fish, Tangail's comcom sweets etc. The demand of those traditional foods is huge. People love to buy these foods with the high price but they do not find trusted platform where they can buy these food easily. Most of the local shops do not sell actual products. Most of the people say, if they find actual product then price is not an issue. So, I believe that, according to the people demand and current market field this idea is suitable and practical.

- **Comparative analysis:** My proposed system will developed based on a new idea. In my proposed system, general people will be benefited whose people are looking for pure traditional and famous food. People will find various kinds of famous and traditional food items from different district in Bangladesh. I believe that, my proposed system will fulfill food lover people demand. On the other hand, it will be helpful for business..

Feasibility Study:

Feasibility study is an analysis and evaluation of a proposed project which will determine the project is economically, technically and legally feasible. Feasibility study is required before investing into a project or business because it will help to identify the pros and cons of a project.

Operational feasibility: Operational feasibility means to fulfill end user expectation and find out possible usability advantages. Through my proposed system customer and seller both will be benefited. In the system, there is an admin panel where admin can manage the daily activities. Admin do not need to registration because admin panel will only be used by the admins. There will be default username and password for admin. Through the default username and password admin can login into the system. On the other hand, customers need to register first for buying product. After register they can buy product effortlessly.

Technical feasibility: My proposed system will be web based system. I have developed the system using PHP language. For design I have used HTML and CSS.

Now a days PHP is one of the most popular web technology and has available free resources. Now it is very easy to manage daily activities effortlessly as all the functionalities are automated. So, this system will easily run and works in all latest web browsers.

Economic feasibility: Economic feasibility means cost analysis of the project. It helps to identify whether the project is economically feasible or not. My proposed system is economically feasible because it is a web based system and is less cost effective than any other device based system. As my proposed system is web based system where we need domain name, hosting and internet cost which is not so high. On the other hand, if we think about equipment we just need one desktop pc, one printer and one server to main our daily work. So this web based system is cost effective as equipment cost is not so high

Project cost is given below:

Component Name	Price	No of Component	Total Cost
Desktop Computer	₳35000	1	₳35000
Domain	₳1500		₳1500
Hosting	₳2500		₳2500
Server	₳45000	1	₳45000
Printer	₳4500	1	₳4500
Others	₳ 1500		₳1500
			= ₳90000

Market research analysis:

Now a day's most of the people are using online platform for buying their daily products. My proposed system traditional food House will provide traditional food according to different areas of Bangladesh. This system is totally new system where customer will find different traditional food by a platform. My proposed system is economically, technically and operationally feasible. The cost of the system is very affordable. So, Traditional food house is new online platform where customer will find different traditional foods such as Cumilla's roshmalai, Tangail's comcom sweets, Bogra's dhoi etc.

Foundations:

Main Goals of the project:

- Online buying system: Register customers can choose their product and can buy products
- Create Admin panel: A admin panel is needed for properly conducting the system
- Managing products: System admin can manage products such as insert. Update, delete product
- Searching options: Customers can search product according to different places or product name
- Reviews: Customers can review about the system's services and their products
- Effortless buying system: Only the registered users can buy the products in an easy way
- Secure home delivery and reduce complexity

Objectives:

- 🚦 Build a web platform so that user can buy product from anywhere
- 🚦 Easily find traditional food items by searching option
- 🚦 Inexperienced people can easily use and visit this site
- 🚦 One of the important objectives is to comfortable online shopping

High-level features/requirements for achieving the goals/objectives of the project:

There are two types of requirements. Those are given below:

- **Functional Requirements:**

Functional requirements identify the features of the system. What a system can do refers to functional requirements.

- **Non-functional requirements:**

It specifies the criteria and behavior of the system

Functional requirement for my proposed system is given below:

- ✓ Customer registration and login
- ✓ Update customer profile
- ✓ Product showcasing
- ✓ Search product
- ✓ Add to cart product
- ✓ View product details
- ✓ Update/ Remove products from the cart
- ✓ Give payment details
- ✓ View available orders
- ✓ Products manage by admin
- ✓ View customer information by admin
- ✓ Order manage by admin
- ✓ Add staff by admin
- ✓ Show product sales report
- ✓ Monthly sales report
- ✓ Delete customers by admin
- ✓ Logout

Non-functional requirements:

- User friendly
- Security

- Validation and verification
- How quickly response the system
- Reliability
- Efficiency
- Testability

Key activities for achieving the goals:

Requirement analysis: In this section, it will be analyzed that what kind of requirements are needed to build the system

Data analysis: In this section, what kind of data should keep in the database are analyzed

User interface design: In this section, how user can easily interact with the system, how the system interface looks is analyzed.

System Development: In this section, system development is analyzed. How system can develop with maintain a standard procedure

Testing: Every part of the system will be tested in this section.

Documentation: In this section, a proper documentation will be prepared for system

Prioritize the features/requirements according to MoSCoW

MoSCoW: MoSCoW prioritization is one of the popular techniques for managing requirements. It helps to understand the priority of the features in a system. MoSCoW stands for four different category of initiatives, those are must have, should have, could have and will not have features in a system.

MoSCoW prioritization of my proposed system is given below:

Status	Requirements name
	<ul style="list-style-type: none"> • Customer registration and login facilities • Admin login • Product showcasing

Must have	<ul style="list-style-type: none"> • Add to Cart product • Update cart • View order details • Give payment details • Manage products by admin • Manage category by admin • Manage order by admin • Admin can manage staff • Add employee by admin • View order details • Customer logout • Admin Logout
Should Have	<ul style="list-style-type: none"> • Show sales/monthly report • Customer can search product • Customer review and feedback • Password recovery • Manages customer profile
Could have	<ul style="list-style-type: none"> • User can save product • Confirmation/ feedback mail to the customer • An option to contact with admin
Not have	<ul style="list-style-type: none"> • Live chat option • User can compare one product with another product • Customer can share product to social media

Exploration & Engineering/ Evolutionary Development:

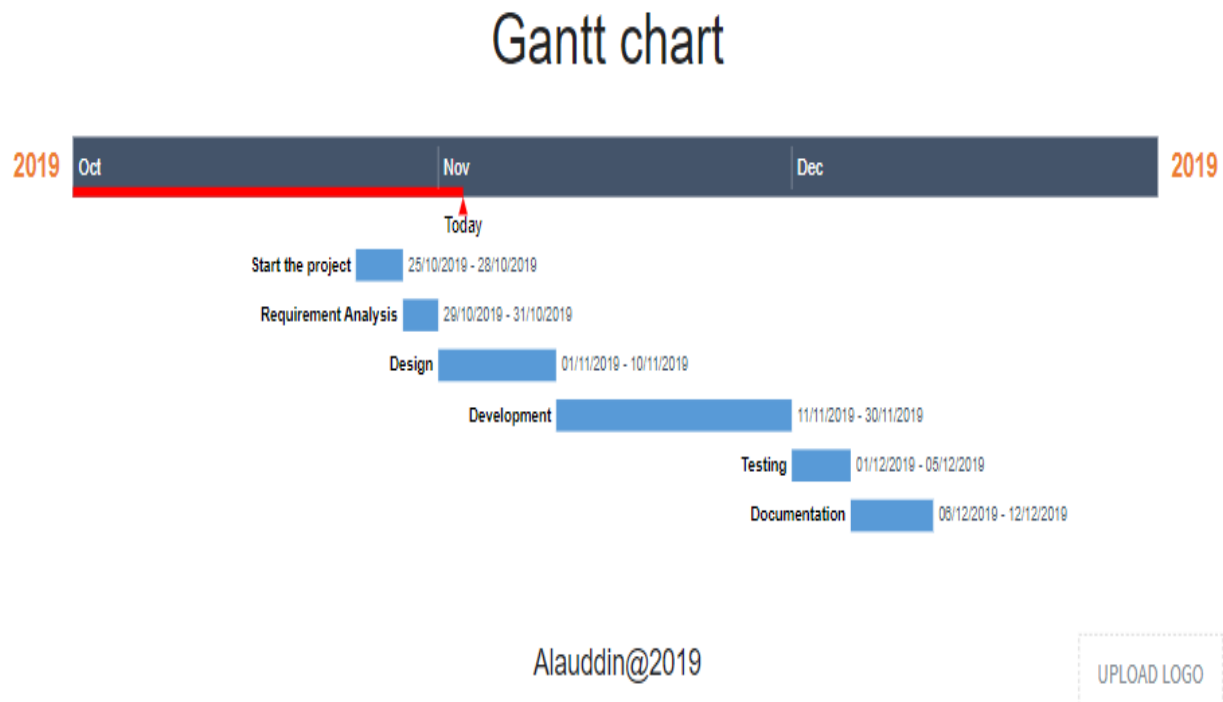
Iterative development features:

- Payment method
- Sales statistics according to monthly, yearly

➤ Real time chat system

Time boxes:

No	Task	Start Time	End Time	Duration
1.	Start the project	25-10-2019	28-10-2019	4 Days
	<ul style="list-style-type: none"> • Searching for the product and collecting requirements • Research about the product • Identify advantages and disadvantages of product 			
2.	Requirement Analysis	29-10-2019	31-10-2019	3 Days
3.	Design part	1-11-2019	10-11-2019	10 Days
	<ul style="list-style-type: none"> • Database design • Different diagrams • User Interface design 			
4.	System Development	11-11-2019	30-11-2019	20 Days
5.	Testing	01-12-2019	05-12-2019	5 Days
6.	Documentation	06-12-2019	12-12-2019	7 Days
Total		=49 Days		

Gantt chart:**Figure:** Gantt chart

Development: Proposed system will be web based system. In this system, user can view product, view product details etc, but when user wish to buy the product, user need to be register first. After the registration user will be able to buy product and see the payment option. For developing the system, I have used PHP, JavaScript, jQuery and MySQL for database. I have chosen web based platform because now a day's web based is the popular online platform. Most of the people are used to in web based system that's why I have chosen this.

Finally the system will introduce with user so that the user known that new system has been developed by adding new features. For this, need to advertise through social media, boot camp, seminar etc. As a result, user visits this web site to buy product.

2.2 Background of the project:

Bangladesh's most of the people are food lover. And Bangladesh has there are many traditional food items. But there was one problem that, people could not buy all

traditional food items from one platform. In manual system, people went to shops and buy their products which were time consuming and shop owner also faced various problems such as product sales report, monthly report was also bit difficult to keep. And when multiple customers went shops at time that time customer services fails to satisfy customers.

So using the latest technology, old system is going to convert into automated system where user can buy product through online. This will create an opportunity to do error free and efficiency business where both customer and shop owner will be benefited.

In my proposed system, customer can see different types of traditional and seasonal food items ,they can add to cart product, can change the quantity of product, they can search item according to different districts in Bangladesh. When they want to check out that time they must need to register in the system. After registration they can payment through bKash. After completing the payment they can see their order details. Various report will be generates such as product sales report, monthly sales report etc.

2.3 Problem area:

Most of the Bangladeshi food items are raw materials which is not easy to store. In this system, customers will buy various traditional food items there most of items are raw materials such as sweets, curd etc. So if all the items are not stored according then customers satisfaction will not be fulfilled. Nowadays, most of the ecommerce sites allow card payment. But initially in my proposed system, there is no option for online payment. So customer cannot pay through card. As in recent time number of ecommerce site is increasing hugely and some of the sites are fake and they do not provide actual product which users want. So, customer trusted issue is one of the vital problems.

2.4 Possible Solution:

After analyzing those problems, I have come up with possible solutions. First of all, need to collect the food items carefully and store them using freezing and under proper temperate. Another solution may be, collect seasonal foods as there is no problem for freezing issue. Such as in winter we can collect more raw materials food items such as sweets, curd etc. In summer we can collect fruits like Rajshahi mango etc.

Now system is in initial stage, so there is no online payment. But a popular offline payment may be implemented for payment option such as bKash. And in future card payment should be available for the system. Another problem is trusted issue, by providing quality product item and service can gain trust from the customer. Management must be loyal to their customers.

Chapter 3 – Literature Review

3.1 Introduction

A literature review is a critical analysis of published sources, or literature, on a particular topic. It is an assessment of the literature and provides a summary, classification, comparison and evaluation. Literature review has four objectives those are survey, critical analysis, synthesizes and presents. It surveys the literature in a specific topic of study. It synthesizes the information in that literature into a summary. It critical analyses identifying limitation in present knowledge and present literature in a embody way. (www.rlf.org.uk, 2019)

3.2 Discussion on problem domain:

Ecommerce means electronic commerce. Ecommerce website means buying or selling products or services through online. Nowadays without ecommerce we cannot think to do our daily activities. Almost 40 years ago ecommerce site started, after that continues to grow with latest technologies, and then huge amount of businesses entering into online market every year. In 1970 ecommerce was used for data interchange. With the help of WWW (World Wide Web) ecommerce was opened for general public in 1990 where people started to buying and selling products through online. Ecommerce site was first started in United States (US) and Amazon is one of the oldest and famous ecommerce sites in the world. (Miva, 2011)

But in Bangladesh it was started late ninety's and in 2009 it was becoming more popular when Bangladesh's government allowed online payment. There were ups and downs in commerce business from 2000 to 2008 in Bangladesh. After 2010 ecommerce site was getting popular in Bangladesh. Number of ecommerce site is increasing rapidly and they are earning huge amount of money. Bangladesh ecommerce market made a quantum jump in 2017. In 2016 ecommerce sector earning was 65-75 million USD. But in 2017 it was increase about 70% and the earning about 110-115 million USD (around 900 crore) against 133,571 crores total retails market. In end of 2020, e-CAB expecting that it will increase and reach 20 billion. (brainstation-23.com, 2019)

As ecommerce introduced lately in Bangladesh, so still there is some problems in this sectors. Those are given below:

- Online payment is going under improvement process
- Delivery system is not fully up to date
- Online fraud
- Local and government policy

There are four types of popular ecommerce in Bangladesh. Those are given below:

- Business to Business (B2B)
- Business to Customer (B2C)
- Consumer to Consumer (C2C)
- Consumer to Business (C2B)

Business to Business (B2B):

In this model, all types of electronic transaction of products and sales that are dealing between two organizations. Here, sometimes buyer is the end users but sellers are buying for business objective. Such as manufacturer to wholesaler transactions.



Figure: 1: Business to Business Model (B2B)

Business to consumer (B2C): This model refers to online purchasing between a consumer and a business. It means selling products directly to the consumers including shopping to stores. For example buying necessary goods from ecommerce website, this is called Business to consumer transactions.

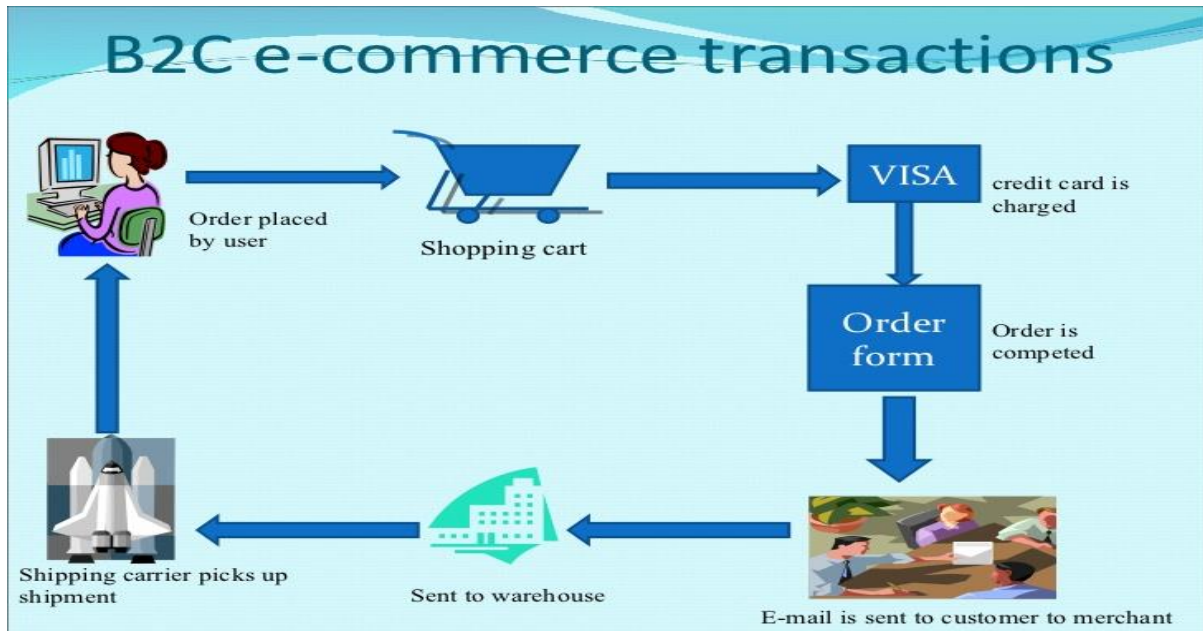


Figure 2: Business to consumer models (B2C) (www.slideshare.net, 2019)

Consumer to consumer (C2C): It is the simple ecommerce between private individuals or consumers where one customer can sell their products to other consumers via internet or computer network. For example, Me selling a bike to my neighbor.

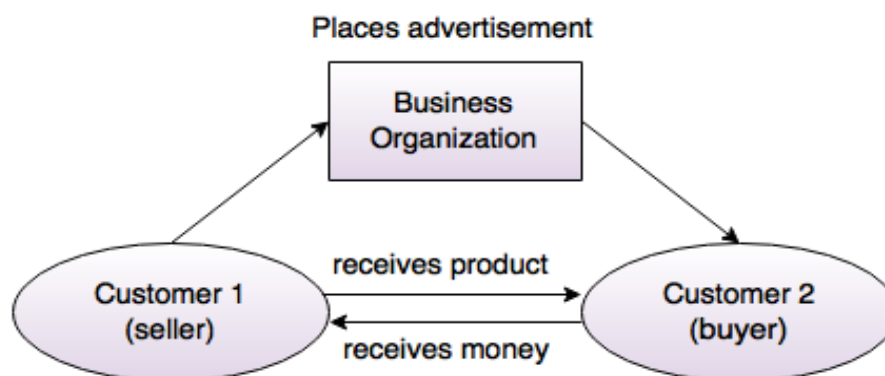


Figure: C2C Model

Figure 3: Consumer to consumer Model (C2C) (www.slideshare.net, 2019)

Consumer to Business (C2B): In this model, there is a transaction that is conducted between consumers and business organization. In this type of transactions, the consumer decides the particular product price rather than the supplier. For example, www.monster.com is a website where a consumer can post his bio data for the service he/she can offer.

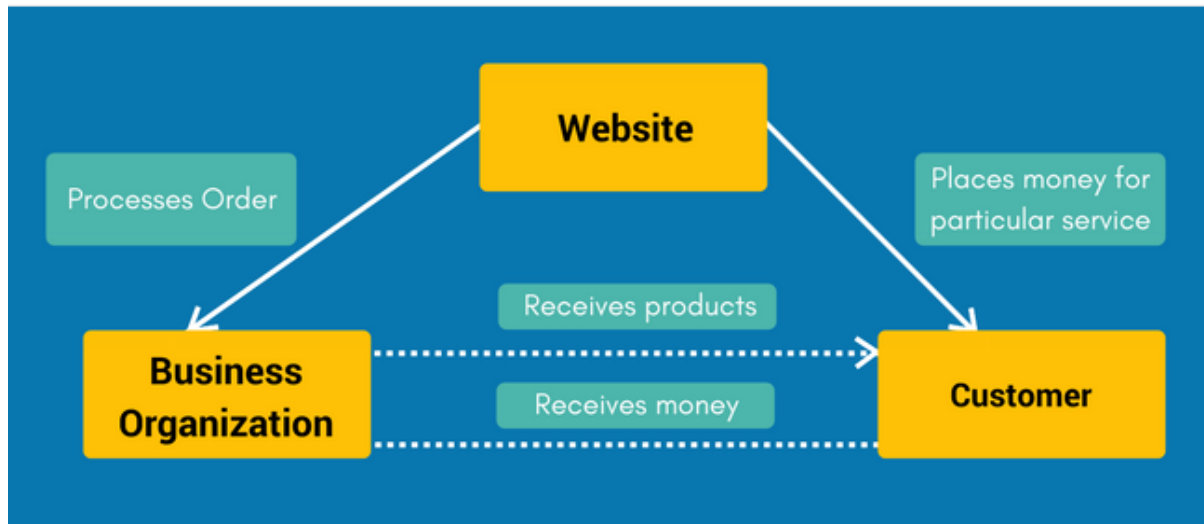


Figure 4: Customer to business (C2B) Model (vivian, 2017)

For my proposed system, we will focus Business to business (B2B) and Business to consumer models because Traditional Food House is an organization base business.

3.2 Discussion on problem solution:

Nowadays ecommerce is one of popular business form. People are earning huge amount of money through ecommerce website. Billion dollars are coming from ecommerce industry every year. But entrepreneurs are facing some problems in ecommerce business. Some of the problems and possible solutions of ecommerce are given below:

Trust: Trustworthy is one of the big issued in ecommerce business. One of the research found out that, customers are worry about their information which they are giving into ecommerce site. They think that information can be used improperly by

the ecommerce authority. So it is a big challenge for the business owners to gain customers believes.

Solution: To gain trust to the customers the whole process need to be transparent. They should clearly show the delivery progress of the product. They can use latest shopping cart encrypted technology and ecommerce owner should keep secure customer data and information.

Product quality: Most common problem which customer faced by ecommerce is the quality of product. Sometimes customer does not get actual product what they wanted. They can only see product images; they cannot see the product physically. As huge number of ecommerce is increasing day by day, so number of fraud seller is also increasing. So, ensuring product quality is a challenge.

Solution: Product should sustain a usability test where products are evaluated for their effectiveness and usefulness. In this process, management should be fully loyal.

Delivery issue: So many times, delivery stated is not clearly mention in order process. Most often time customers do not know when they will get product. Often it takes longer time than customer expected time. So, delivery issue can create customer dissatisfaction.

Solution: Send message to the customers when the product is shipped and inform customer when they can get the product as they can prepare to receive it.

Absence of online identity verification: Most of the visitors are ecommerce don't use their original information. Sometime they use fake email address, so it is quite difficult to identify their real identity. Sometimes during the cash on delivery system, we can see that the addresses are fake and business fall in loss.

Solution: There are many solutions for this problem such as during sign up system can send a verification code to identify valid email. Phone number verification, face recognition can also solve this problem.

Huge number of ads in the system: In recent time, we can see that many systems provides huge amount of ads in the interface. And customer feels boring about these

ads. Sometimes products are under cover because of ads, this is very annoying situation for customers.

Solution: It is better to avoid big numbers of ads in the system so that customers feel comfortable when using the system.

3.3 Comparison between three popular food ecommerce sites:

Day by day , technology is becoming advance. So with the help of technology similar kinds of websites,products and appliations are created to accomplish same tasks in a different way. Every site has some has some unique features which makes them different from other sites. Here i am going to discuss about three popular food ecommerce site. I will discuss about each site best features and limitations. After finding out best features and limitations I will try to find out perfect solutions for a food ecommerce site.

Three leading food ecommerce is giving below:

- <https://www.foodpanda.com.bd/> (Bangladesh)
- <https://khaasfood.com/> (Bangladesh)
- <https://wellfoodbd.com/> (Bangladesh)

Here, I have selected three popular Bangladeshi food ecommerce sites. Now I will describe the strength and weakness of those sites.

Foodpanda:

Overview: It is one of the fast growing food ecommerce sites in Bangladesh. They provide food to its customer. They provides various type of food items for launch, dinner etc. They have different branches in different division in Bangladesh.

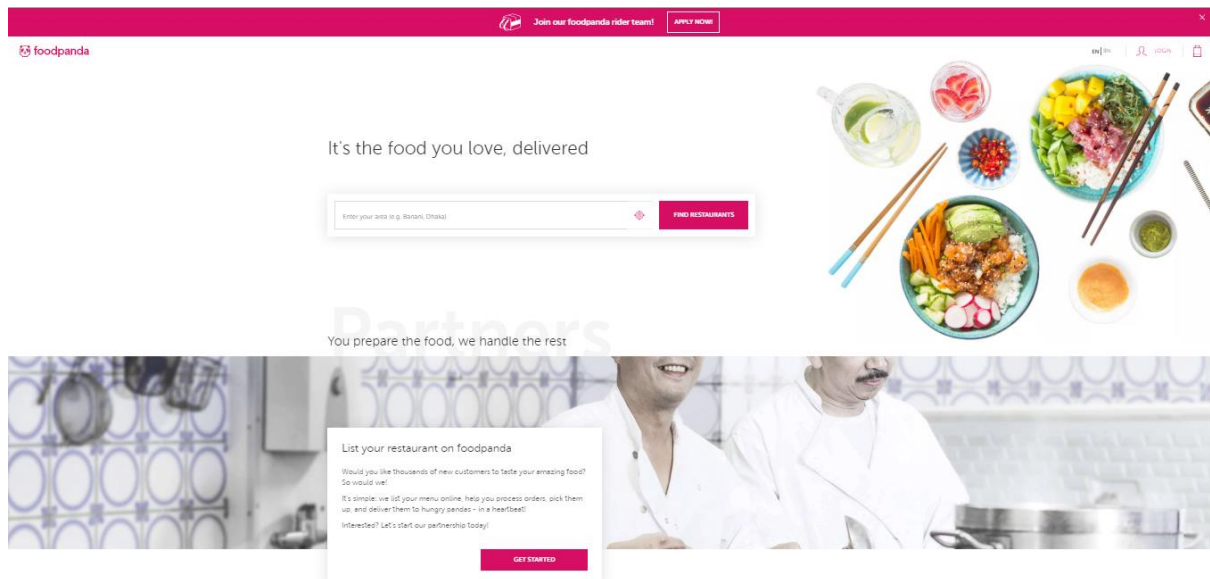


Figure 5: Home page of Foodpanda

Best features:

- Registration process is easy and simple. Where need a valid email address or customer can easily sign up with Facebook. Password recovery option is available here.

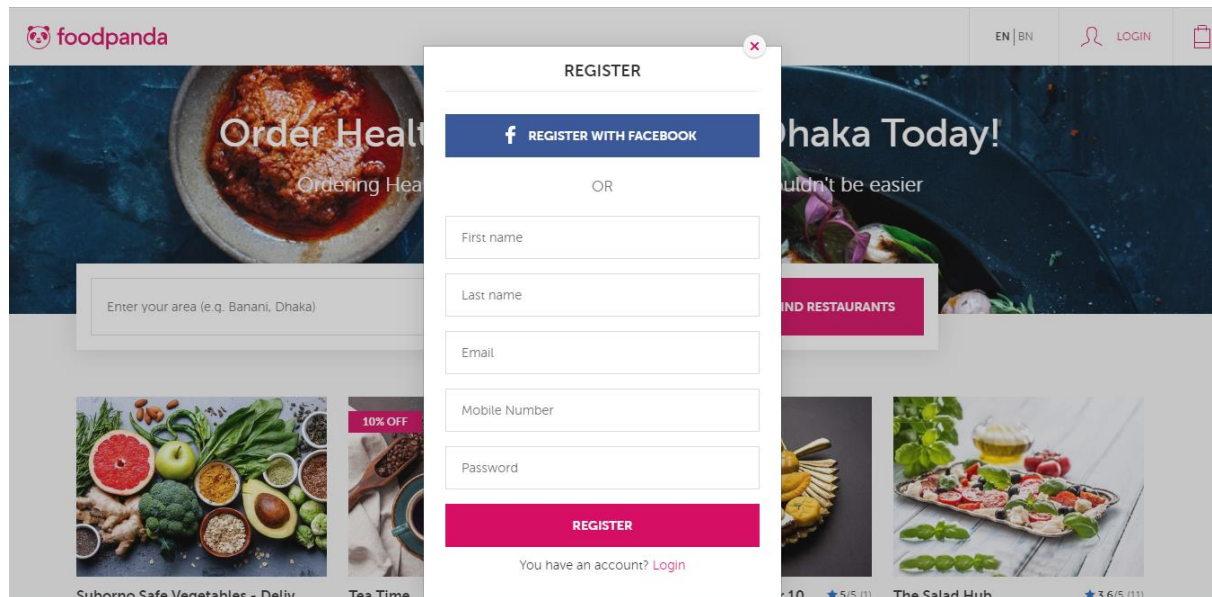


Figure 6: Foodpanda registration process

- Flexible for local users those who do not know English, they can use website in Bengali.

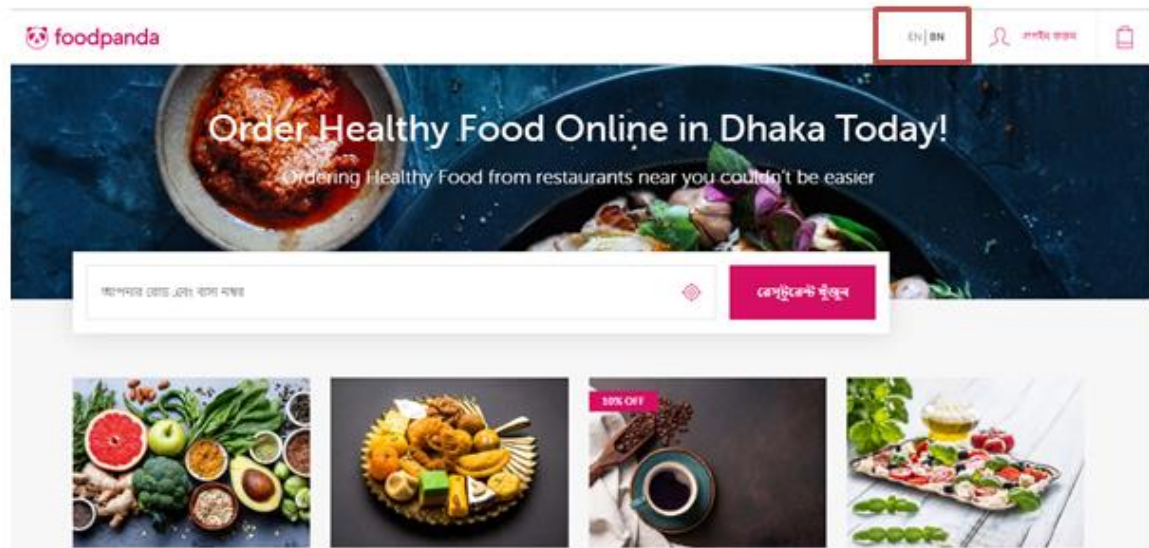


Figure 7: User can change language in food panda

- Flexible searching option where user can search any kind of restaurant. Also user can see available places where they provide services.

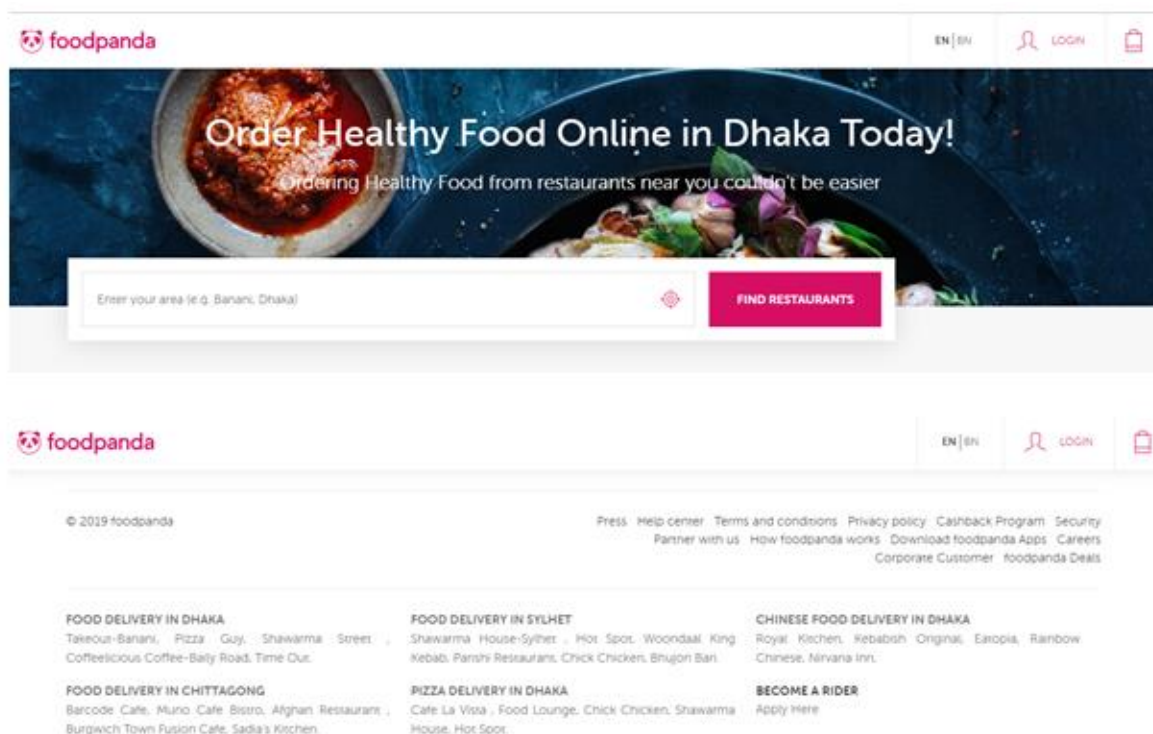


Figure 8: Flexible searching option with available places

- Quality food showcasing
- Product images and information is clear and understandable

Limitations:

- Overall system outlook is not good enough
- There is no live chat option
- User will hardly find anything with the navigation bar

Khaasfood

Overview:

Khaasfood is an online grocery shop in Bangladesh. Khaasfood provides various types of grocery items. And their aim is to provide pure food item to their customers.

Best features:

- User interface is looking good and clean

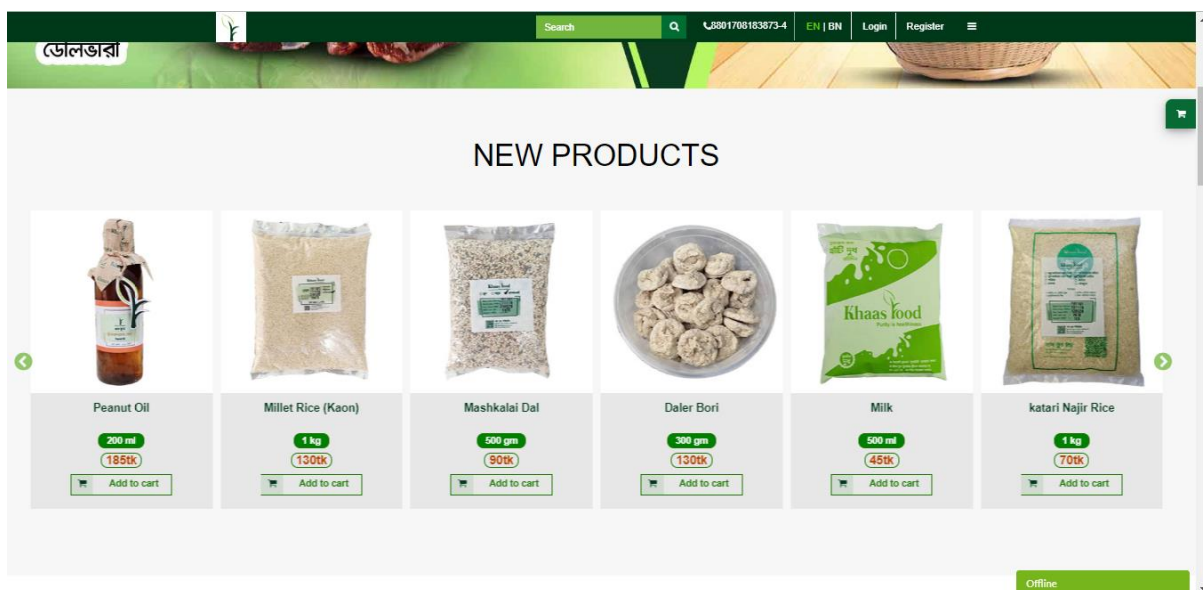


Figure 9: Khaasfood home page

- Search option of Khaasfood is good.
- Online and offline chat option is available in the system

- Product collection is good and various types of necessary product is available in the system
- Product details is fully described
- Easy and smooth registration process

Limitations:

- Category could have been well organized
- There is less color combination and icon used
- There is no online payment
- There is no refund policy

Wellfoodbd

Overview:

Wellfoodbd is a growing food ecommerce site in Bangladesh. They provide various types of cakes and sweets item in only Dhaka city.

Best features:

- Collection of good food items with clear images

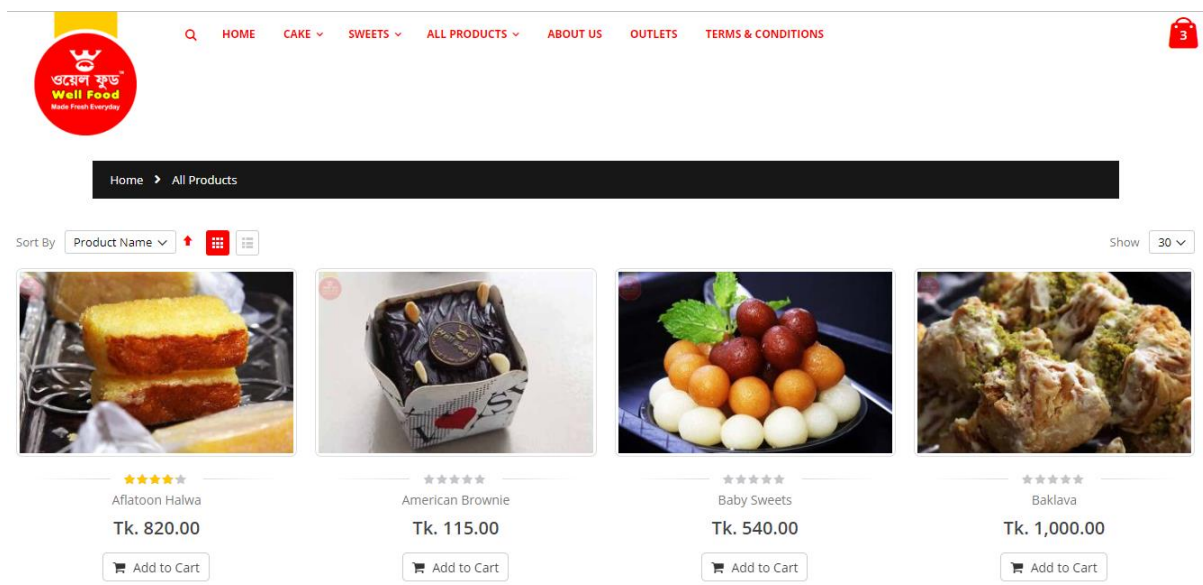


Figure 10: Wellfoodbd home page

- Registration process is easy and simple
- 100% money back guarantee
- Customer support is good

Limitations:

- Navigation bar, color combination of the system is not so attractive

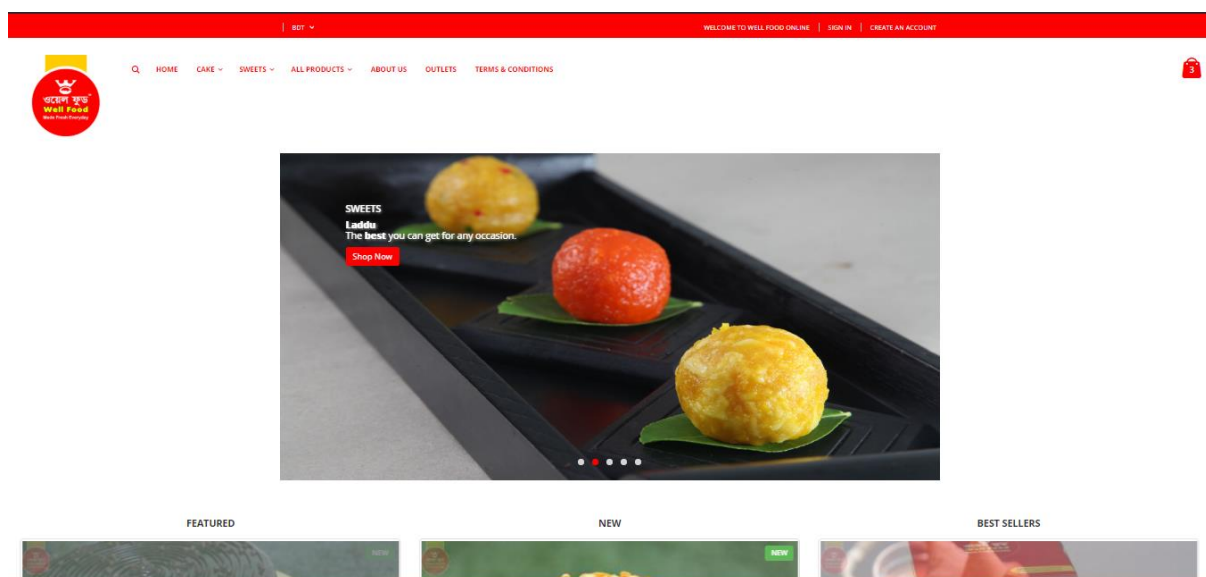


Figure 11: Wellfoodbd navigation bar was not attractive

- There is no live chat option
- Product details in not fully descried
- Product category is not well organized
- Less icon used in the system

3.4 Recommendation approach:

After analyzing this three leading food ecommerce in Bangladesh I have found some good and bad things. So now it is very clear to me that which kinds of functionality

should be in my proposed system which will make the system user friendly. The following things should be include in my proposed system:

- Good looking user interface
- Good use of color combination and icons
- Navigation bar must be attractive
- Category should be well organized
- Product showcasing must be good and product image should be good
- Define product description clearly
- Only register user will be able to buy products
- Guest user can able to browse product
- Purchase and notification mail should be available for user
- Integration of various payment method
- Chat option available for users
- Quality customer support must be provided

Chapter 4 – Methodology

Introduction:

In software engineering, software development methodology is a framework that is used for planning, structure and controls the processes of developing an information system. (en.wikibooks.org, 2019)

4.1 What to use

Methodology is an important part during software development. There are numbers of methodology for software development. So it is very important to find out the right methodology for a project. For designing, planning and control a system choosing right methodology is very important. Initially, now I will describe about three software development methodology and I will also describe advantages and limitations of those methodologies.

Three software development methodologies are given below:

Waterfall Model methodology:

In software engineering waterfall model is a sequential model where software development is divided into different phases. It is a sequential and linear approach in software development life cycle. Here, each phase has specific task to perform. In this approach, completing one step it can move to next step but if it moves to next steps once it cannot go back to previous stage. (www.tutorialspoint.com, 2019)

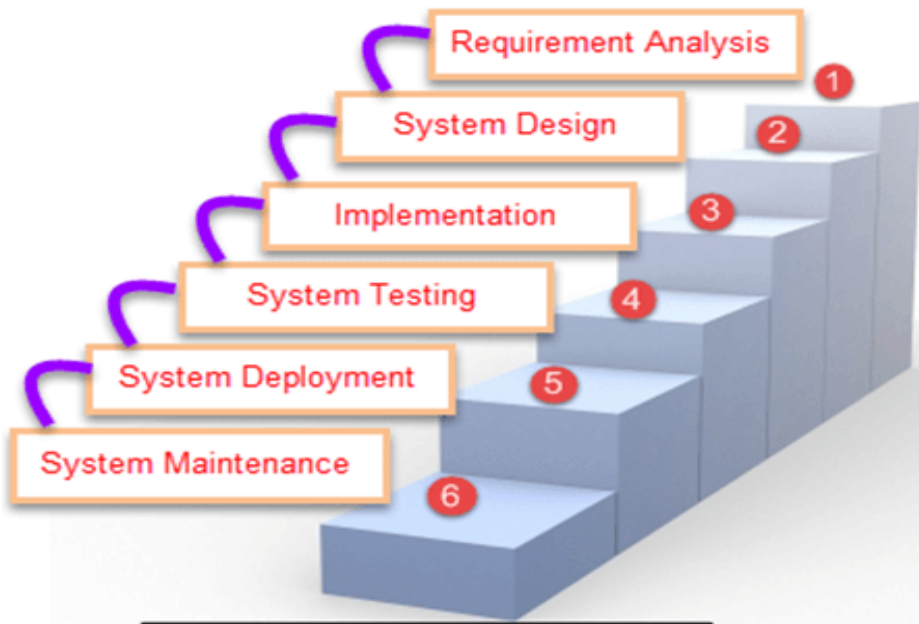


Figure 12: Waterfall model

Advantages:

- This model is easy to understand
- Go on to the next phase of development, it must complete the previous phase
- Before completing each stage, they should perform quality assurance test
- Analyzing and testing are easy and simple (www.tutorialspoint.com, 2019)

Disadvantages:

- Not good for large/complex project
- There is no chance to go back to the previous steps if it complete once
- No facilities to increase or decrease requirements as requirements are pre-defined
- Difficult to measure progress within the project

(www.tutorialspoint.com, 2019)

Rapid application development methodology:

This is a development model which priorities quick and rapid development of software. In this approach developers can multiple iterations and update to a

software quickly. This model can rapidly provide something to the customers as they can see and use and can give feedback concerning the delivery and their requirements. (Kissflow, 2018)

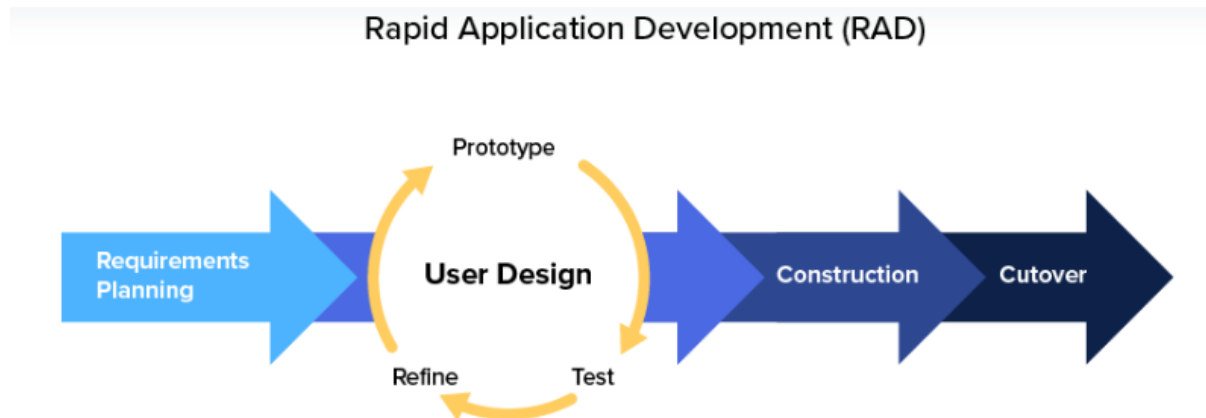


Figure 13: Rapid application development

Advantages:

- Easily requirement can be change anytime
- Fewer people can provide more productivity
- Priorities and encourage user feedback
- Quick reviews

Disadvantages:

- Team collaboration must be strong
 - Expert person needed for development
 - Compared to other model it is complex to manage
 - Project is not applicable for small budget
- (Kissflow, 2018)

Dynamic system development methodology (DSDM):

This is an agile development framework that aims and target is to deliver a system within time and budget. This is iterative and incremental approach based on user

involvement. The philosophy this method follows that is 'nothing can be making perfect at first attempt'. It is mainly based on Rapid application development (RAD).

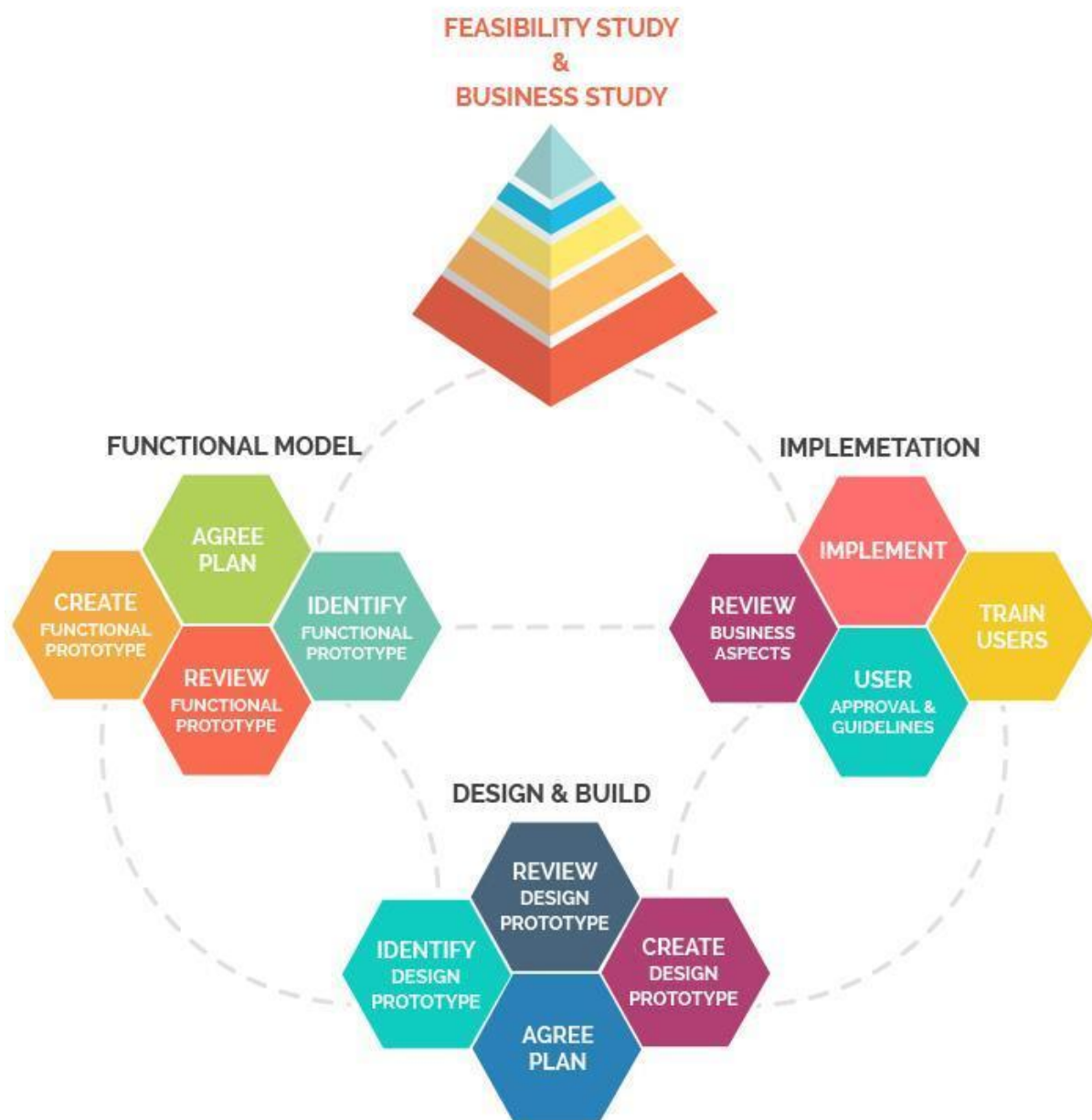


Figure 14: Dynamic system development methodology (Chowdhury, 2019)

Advantages:

- Aim to complete task within time and budget
- Provide flexibility in terms of requirement evolution
- Easily user involvement while developing

- Basic functionality is deliver quickly
- Less documentation is needed

Disadvantages:

- DSDM is costly to implement
- Not easy and common to understand
- Need skilled development team in both technical and business areas
- It is not suitable for small business
- As it focus on RAD which can decrease code robustness

(www.ukessays.com, 2019)

Choosing methodology: As it is academic project, so it is very difficult to choose any specific methodology. With any specific methodology all requirements will not meet. First of all, I need to gather requirements about the system after that I need to develop the system. Now there are no clients in the project and no team members for developing or helping. So any specific methodology will not going to match with this type of project. So, for this type of project hybrid methodology will be appropriate that is mainly combined with waterfall model and Dynamic software development methodology (DSDM). Waterfall model will be helpful for requirements gathering and DSDM will be good choice for iterative development process.

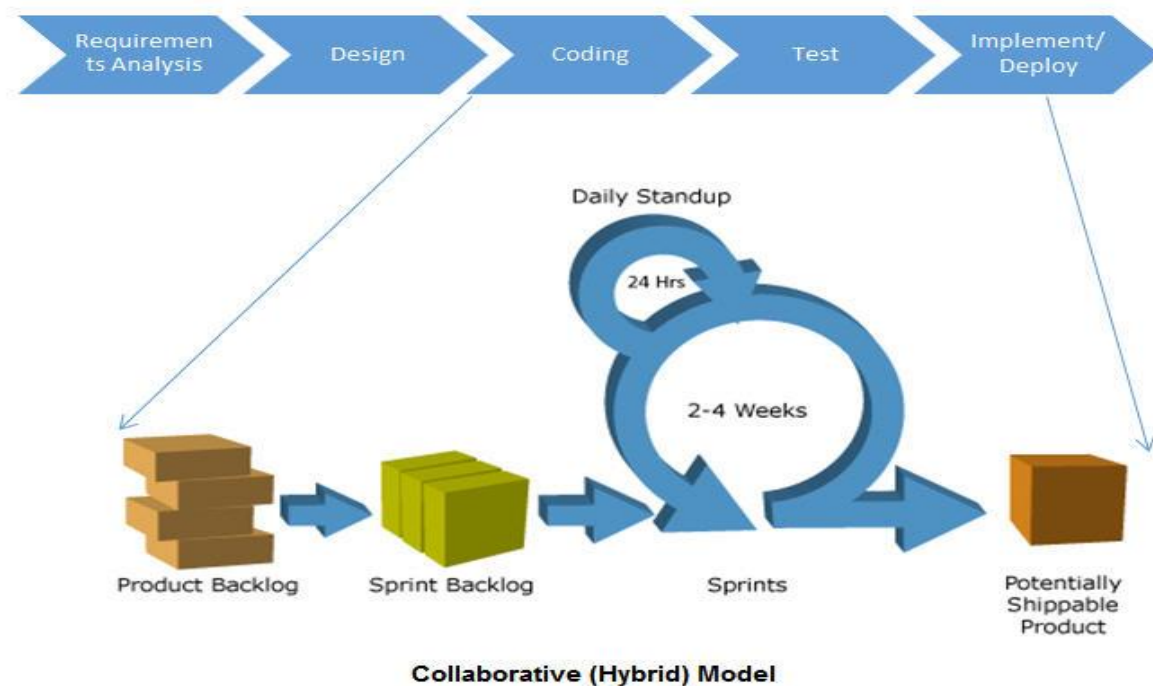


Figure 15: Hybrid methodology

4.2 why to use

A methodology need to be chosen for proposed system which meets the requirements and leads business growth and sustainable development of the system. As it is an academic project, so it is difficult to choose a specific methodology for the project. And the project aim is to user satisfaction. Previously I mentioned that for this type of hybrid methodology is appropriate because this methodology will help me to collecting requirements and iterative development of the project. For this reason, I am going to use hybrid methodology for this project.

4.3 Sections of methodology

Pre-project: Budget and initial requirements of the project are identified in this stage. In this phase, related problems and possible solutions also take into account.

Feasibility study: Feasibility study is an analysis and evaluation of a proposed project which will determine the project is economically, technically and legally

feasible. Feasibility study is required before investing into a project or business because it will help to identify the pros and cons of a project. (KENTON, 2019)

Requirements gathering: This phase is all about gathering requirements about functional and non-functional requirements. There are some ways to gathering requirements such as survey, questionnaire, interviews, focus group etc.

Requirement analysis and prioritization: After gathering all types of requirements and information that need to prioritize the requirements to develop actual system. Some requirements are high priority base and those requirements need to develop first. Project related different kinds of requirements can be come and those requirements should be analyze properly.

Exploration and Engineering: Exploration and engineering phase are iterative stage. Requirements are investigated and examine in exploration stage. Then it sends to engineering stage for further development. If requirements need to any change then it send back to previous stage which is exploration stage.

4.4 Implementation plans

This is the final stage when software is ready to release for their customers. Before final release some steps need to be considered. Those stages are given below:

Testing: After completing the development of the system then it immediately comes to the testing phase. Here a test plan is mandatory. In this phase, all types of testing should perform under test log documentation.

Documentation: Every steps of the development will be documented in this part. So that, new developers can easily understands the development process of the system.

Evaluation: Project will be evaluated in this phase.

Chapter 5 – Planning

5.1- Project plan

Project planning is the beginning stage of a project. Project planning plays a vital role to make a project successful. Proper planning can ensure the quality of the system. Before the system design and development project planning must be completed. In this chapter, the overall project plan will be described as project is being completed. Projects are divided into small parts and those tasks will be completed within a specific time period. Here project planning chapter includes different types of planning related to the project such as test plan, risk management, change management and quality management.

5.1.1 Management Plan / Work Breakdown Structure (WBS):

Work breakdown structure means dividing the project into small parts. It is very important to follow breakdown structure to deliver the project in time. This approach makes the work easier and efficient to complete each task within the time limit. The goal of WBS is to manage large projects easily. WBS provides an assumption about tasks and working time. Proposed system work breakdown structure is given as a chart. The chart is given below:

SL No	Task Name	Start Date	End Date	Duration
1	Introduction	15-10-2019	17-10-2019	2 Days
2	Initial study	18-10--2019	24-10-2019	7 Days
3	Literature review	25-10--2019	28-10--2019	4 Days
4	Methodology	29-10--2019	31-10--2019	3 Days
5	Planning	01-11-2019	05-11-2019	5 Days
6	Feasibility	06-11-2019	07-11-2019	2 Days

7	Foundation	08-11-2019	10-11-2019	3 Days
8	Exploration	11-11-2019	12-11-2019	2 Days
9	Engineering	13-11-2019	16-11-2019	4 Days
10	Deployment	17-11-2019	1-12-2019	15 Days
11	Testing	02-12-2019	06-12-2019	5 Days
12	Implementation	07-12-2019	09-12-2019	3 Days
13	Critical appraisal and evaluation	10-12-12	12-12-2019	3 Days
14	Lesson learned	13-12-2019	13-12-2019	1 Day
15	Conclusion	14-12-2019	14-12-2019	1 Day
Total	= 60 Days			

5.1.2 Resource allocation

Resource allocations mean allocating and managing all resource in a proper and economical way so that system can be completed in a organize way. It is one of the important parts in project planning. It helps to track project milestone, delivery section, schedule, deadline, process progress and outcome in an efficient way. All tasks should be completed with a team but as it is academic project and no team member, so one person need to do different task in different time.

SL No	Task Name	Duration	Resource Name
1	Introduction	2 Days	Analyst
2	Initial study	7 Days	Analyst
3	Literature review	4 Days	Analyst
4	Methodology	3 Days	Analyst
5	Planning	5 Days	Analyst, User
6	Feasibility	2 Days	Analyst, Developer
7	Foundation	3 Days	Analyst, Developer
8	Exploration	2 Days	Analyst, Developer
9	Engineering	4 Days	Analyst, Developer
10	Deployment	15 Days	Developer, Tester
11	Testing	5 Days	Developer, Tester, User
12	Implementation	3 Days	Analyst, Developer, User
13	Critical appraisal and evaluation	3 Days	Analyst
14	Lesson learned	1 Day	Analyst, Developer, Tester
15	Conclusion	1 Day	Analyst
Total	= 60 Days		

Figure 16: Resource Allocation

5.1.3- Time duration/ Time boxing:

Proper time allocation plays a vital role for a project success. Inappropriate time allocation can become the reason of project failure. Setting up appropriate time allocation can make a project successful. As my proposed system will follow DSDM methodology most of the time and development will be follow iterative process. So, here proper time boxing is very important. There are 4 time boxes for this project and which is done by allocated resources.

Time boxing chart is given below:

Time box	Task title	Resource Name
T-1	Introductions	Analyst
	Initial study	Analyst
	Literature review	Analyst
	Methodology	Analyst
T-2	Planning	Analyst, User
	Feasibility	Analyst, Developer
	Foundation	Analyst, Developer
	Exploration	Analyst, Developer
T-3	Engineering	Analyst, Developer
	Deployment	Developer, tester
	Testing	Developer, Tester, User
	Implementation	Analyst, Developer, User
T-4	Critical Appraisal & Evolution	Analyst
	Lessons learned	Analyst, Developer, Tester
	Conclusion	Analyst

Figure 17: Time boxing

5.1.4 Gantt chart:

Gantt chart helps us to break down tasks into small chunks. It shows us the start date and end date of a task. It also shows overall duration of the project and the last date to complete a project. Gantt chart is very useful option to do each task within time limit. My proposed system Gantt chart is given below:

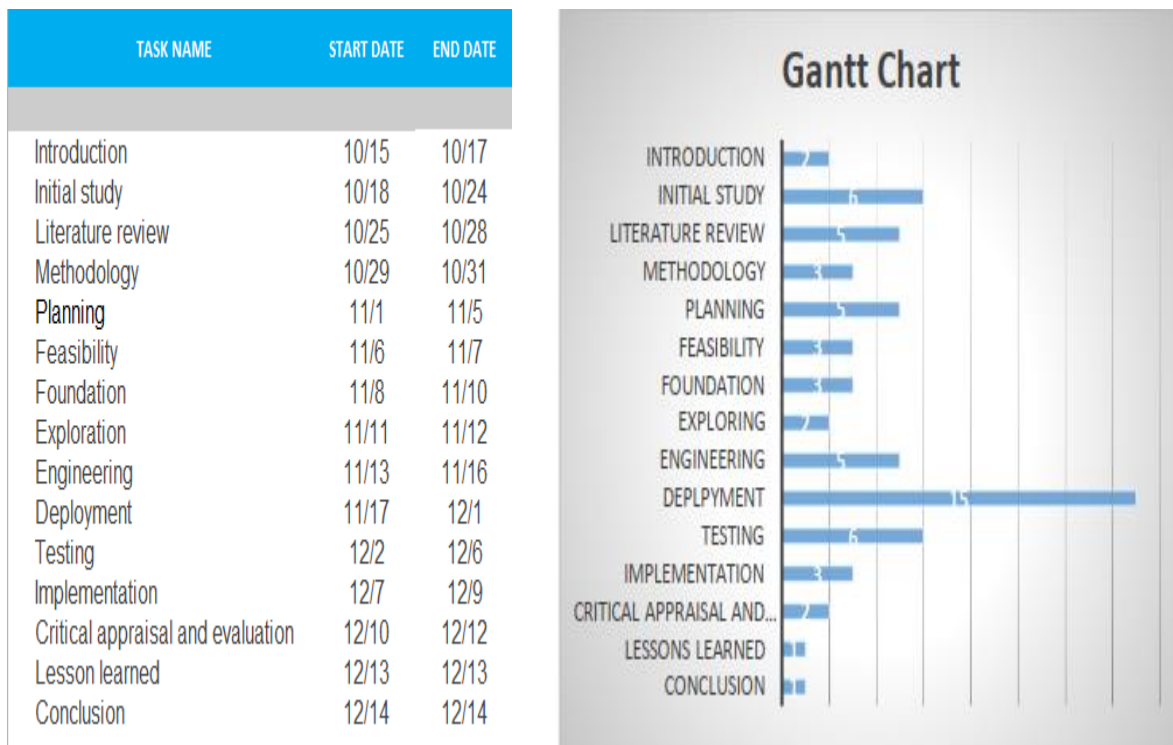


Figure 18: Gantt chart for proposed system

5.2 Test plan:

In software development, testing is an important part. Test means testing different parts of software and matches the actual result with expected result of each part. Proper test plan can help to identify the possible problems and solutions.

5.2.1 Testing against time boxes

Each of the time boxes has tasks and fixed time. After completing each time box, it is important to test those tasks so that we can get a clear understanding about outcomes. Testing against each time boxes is given below:

User name	Example	Role	Example
Time box ID			
Time box content			

Test type	Test steps	Expected result	Actual results	Comment
Unit test				
Integration test				
System test				
Acceptance test				
Security test				
Usability test				
Reliability test				

5.2.2 Required tests

In software development, there are mainly two types of testing. Those are given below:

- Functional Testing
- Non-functional Testing

Functional Testing:

Unit Testing:

Unit testing is a testing where individual units or components of software are tested. This testing is done at the time of development of the application. Main purpose is to validate that each units is performed according to design In SDLC, it is the first testing done before integration testing. (smartbear.com, 2019)

Integration Testing:

Integration testing is where each of the units is combined and tested as a group. The main purpose of this testing is to identify faults in the interaction

between integrated units. To assist in integration testing test drivers and test stubs are used. (softwaretestingfundamentals.com, 2019)

System Testing:

This testing refers to testing complete and fully integrated software product. This testing means a series of different testing and main purpose is to exercise the full computer based system. (www.guru99.com, 2019)

Acceptance Testing:

This is the last step of functional testing where users are fully involved in this testing. This testing main purpose is to gain the user satisfaction and check that proper business requirements are met. (www.tutorialspoint.com, 2019)

Non-functional testing:

- **Security Testing:**

Security testing is refers to the testing that ensures that application and systems are free from threats, vulnerabilities and risks. The purpose of this testing is to check how much system is secure from internal and external threats. (softwaretestingfundamentals.com, 2019)

- **Usability Testing**

This testing refers that how easy to use the system, how much users are comfortable with the system. It ensures that how easily users are completing an action and their interest in using the system. Example as good looking User Interface (www.experienceux.co.uk, 2019)

- **Reliability Testing:**

Reliability testing is a testing that refers to that system will complete a task without any failure when operations occurred between the systems. Users also involve at the time of system testing. This testing is also used to check whether the application meet user's .reliability. (www.guru99.com, 2019)

5.2.3 Test Case

In software testing, test case is a set of variable or conditions under which a tester will determine whether a system under test satisfies requirements or works properly. Test case is used for different types of software testing. Test case store some data which are Name of the test, Type of the test and what type of consideration are taking into account.

Test case no			
Test Type			
Test Description			
Test Steps	Expected result	Actual result	Comment

5.2.4 User acceptance test plan

In software testing process, User acceptance testing is the final stage of testing. At the time of User acceptance testing, actual users test the system to make sure system meets the user requirements. Before releasing the system in the market, this testing was done in last stage. It is also known as end user test and beta testing.

Test case no			
Test Type			
Test Title			
Pre-condition of testing			
Users Name			
Act as			
Test Steps	Expected result	Actual result	Comment

5.3 Risk Management

In software development process, risk is an unavoidable part; it can arise throughout the development of the project. Risk management plan helps to identify possible risks and weakness that may arise during the development of the system. Risk management means to deal and manages those risks in an efficient and effective manner. Risk management plan is very important to avoid project failure. (www.castsoftware.com, 2019)

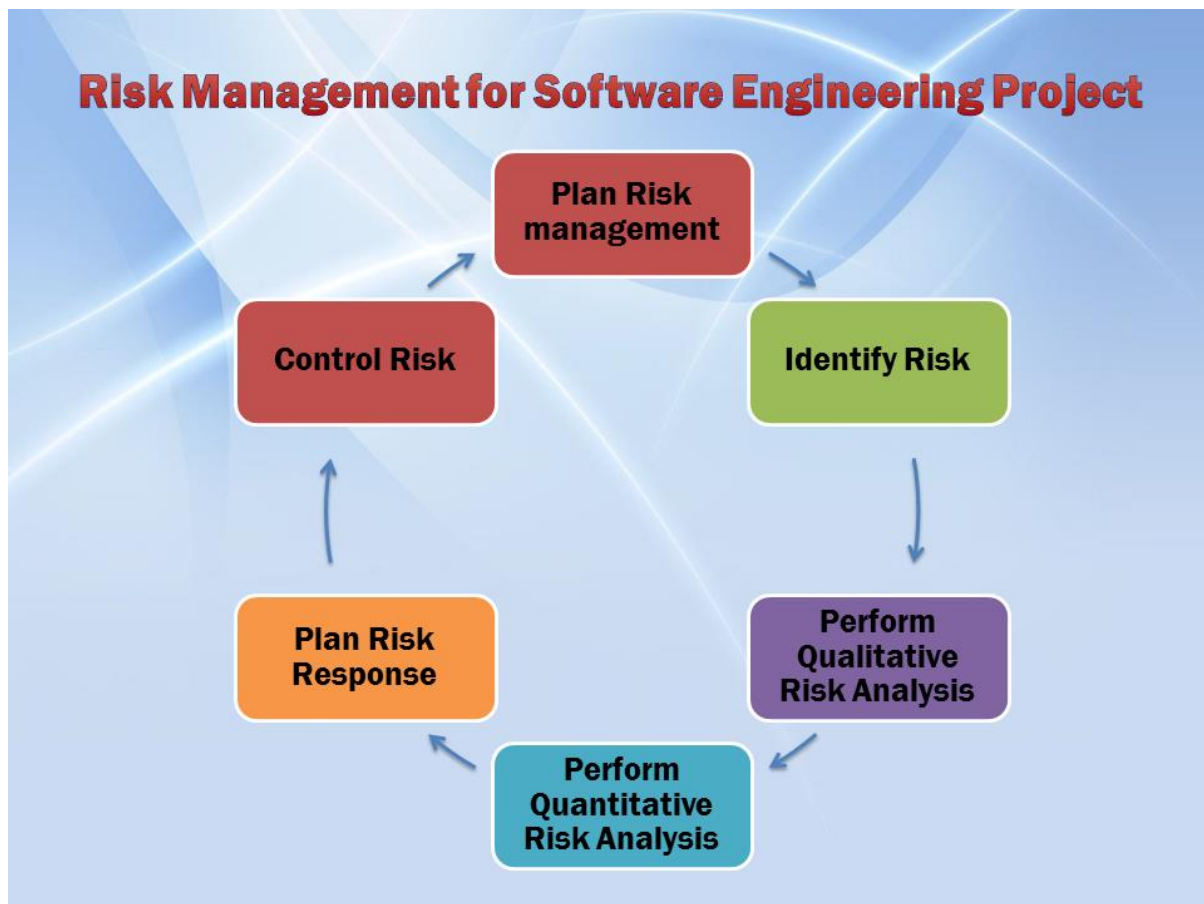


Figure 19: Risk Management plan

There are various ways that risk can occur in a project. Some of them are given below:

- Lightly taking a risk
- Lack of skilled person
- Not taking experience developer
- Lack of management planning for minimize risks
- There is no project experience yet

There are some stages of risk management. Those stages are given below:

- Risk identification
- Analyze the risk
- Evaluate or rank the risk
- Treat the risk

- Monitor and review the risk

(continuingprofessionaldevelopment.org, 2019)






5.3.1 Risk Identification

This is the first stage of risk management. In this stage, risks are uncovered that might affect the project or its outcome. Throughout the development this phase is very important for effective risk management. In development time, there are some common risks that may arise those risks are business risk, technique risk, methodology risk, internal and external risks. After identification of those risks then all things need to be documented properly and will try to find out the reason for arising those risks. To identify those risks some steps need to be followed. Those steps are given below:

- First of all, need to find out the big risk or high risk that can seriously damage to the system
- A proper documentation should be maintained to keep record all those risks and reason for occurring those risks
- Keep record some common risks that arise frequently at the time of development

5.3.2 Risk Assessment

This is the second stage of risk management. In this stage, risks are identified, analyzed and most importantly risks are prioritized and documented. This document will help to identify which risks are high and where should concern and which risk can be avoided. Here, I have identified five criteria of risk assessment. Those are given below:

-  Title of risk
-  Specification of risk
-  Likelihood
-  Impact of risk
-  And frequency

Title of risk: This will show the risk name

Specification of risk: Shortly describe risk pattern

Likelihood: Elaborate the chances of risk happened. Such as likely, unlikely, rare and almost certain

Impact of risk: Assure the chance of risk occurrence

Frequency: It will tell the measurement of the risk occurrence with a year

Title of risk	Specification	Likelihood	Risk Impact	Frequency (each year)
Business Risk	There is no need of existing system or other software	Rare	High	0 to 1
	Strategy is not matching with business need	Unlikely	High	0 to 1
Methodology Risk	Not choosing correct methodology	Likely	Medium	0 to 2
	Custom methodology is used	Unlikely	High	0 to 1
Technical Risk	Requirements are change frequently at the development time	Likely	Medium	3 to 4
	Using backdated technology	Unlikely	High	1 to 2

Internal Risk	Data losses chance from the system	Rare	High	0 to 1
External Risk	May changes of government rules and regulations	Almost certain	High	0 to 1

5.3.2 Risk precaution

For preventing risks that are identified, it needs to set pre action. Some of the pre action plans are describe below:

Title of risk	Specification	Likelihood	Risk Impact	Precaution
Business Risk	There is no need of existing system or other software	Rare	High	User review and properly market analysis can solve this issue.
	Strategy is not matching with business need	Unlikely	High	
Methodology Risk	Not choosing correct methodology	Likely	Medium	Proper analysis with skilled and experience developer and analyst can prevent this risk.
	Customer methodology is used	Unlikely	High	
Technical Risk	Requirements are change frequently at the development time	Likely	Medium	Using latest technology and understanding user requirements

	Using backdated technology	Unlikely	High	properly can solve this issue
Internal Risk	Data losses chance from the system	Rare	High	Backup data and providing strong security on the system can prevent this problem
External Risk	May changes of government rules and regulations	Almost certain	High	System needed to update according to the changes of government policy

5.3.4 –Steps taken for possible risks

Some steps need to be taken for preventing possible risk that may come to proposed system. Those steps are given below:

Title of risk	Specification	Likelihood	Risk Impact	Steps taken
Business Risk	There is no need of existing system or other software	Rare	High	Properly analyze related system and check out the process of existing system
	Strategy is not matching with business need	Unlikely	High	
Methodology Risk	Not choosing correct methodology	Likely	Medium	Analyzing properly then choosing the right methodology then if proper
	Customer	Unlikely	High	

	methodology is used			methodology is not match with the system, after that custom methodology need to use.
Technical Risk	Requirements are change frequently at the development time	Likely	Medium	It is an academic project, and still there is no client. So at the time of analyzing all requirements need to set.
	Using backdated technology	Unlikely	High	
Internal Risk	Data losses chance from the system	Rare	High	Using cloud for daily data backup
External Risk	May changes of government rules and regulations	Almost certain	High	System needed to update according to the changes of government policy

5.4 Change management

During development time, project requirements may change multiple times. Solution developer or project manager need to take steps for changing system according to the clients or system owner.

5.4.1 Factors that might cause change

As, it is academic project, so one person need to do all the things. One person need to play different roles in different times. After analyzing all things, I found some sectors or functionality that might change. Those are given below:

- User interface change
- Changes in time boxing
- Change in resources
- Some functionality need to change
- Change in requirement list
- Errors and bugs changes

5.4. 2 DSDM atern welcomes change

Changes are always welcome in DSDM atern method. DSDM atern follows iterative process to develop the product and being this iterative process is the main reasons to support changes at development time. In DSDM method, user feedback is taking after completing each step of the project and if there is any fault or issue find out then changes is easily possible until the goal of the project is fulfilled.

5.4.3 Considering business value/priority

In DSDM method, system changes need to organize based on priority. With the MoSCoW prioritization the requirement changes are taking place. First of all, most important requirement are need to change then less important requirement changes one after one. It is also very important to follow time box because if time is limited then high priority base requirements will complete first and low priority base requirements will remain unchanged.

5.4.4 Change Workshop

Change workshop must be conducted to build a communication platform between the users and the developer. This workshop will help to find effective problems and possible solutions. But it is an academic project and I have to do the whole development part .And most importantly, this project not fully followed DSDM methodology that's why for this project change workshop is not possible.

5.4.5 Changes that are allowed

At development time, it is not possible going to apply all the changes. Development of the system will never be finished if all the changes are allowed in development time. In software development project, there are eight common changes are moderate to apply; those are resource, plan, cost, work, scope, risk, schedule and quality. Changes are focusing on organizational and business perspectives. As it is academic project, that's why only system business goal and development purpose need to be in mind to apply the changes.

5.4.6 Key decision takers of change




It is an academic project and there is no team member involve in this project. So one person need to play different roles in different time. One person will act as different roles such as


- Analyst
- Developer
- Tester

If there is any change required then he will take decision according to the role. If there is need to change the requirements **analyst** will take decision. If there is need changes in code, **developer** can do this. And **Tester** will test the whole system and take decision for deliver correct output.

5.5 Quality Management

Software quality management is process that's aim is to develop the product with ensuring best quality and standard that is expected by the customers. Software quality manager need to test the software properly before releasing the product into market. Objectives of the quality management are given below:

-  Ensuring the acceptance of the system
-  Following the proper rules for ensuring the quality level of the system
-  Assuring the system is bugs or defeats free

 Activity to maintaining the quality of the system

5.5.1 Rules applied to maintain quality

Features and functions are varying from system to system. To maintain the quality of the system, there are two rules. Those are given below:

- ❖ **Quality Control:** Quality control should follow because it contains a set of measures or procedures which ensure that the new system is created as per requirements. It evaluates whether the project meets the quality and it also ensures that the system is error free and system development is standard.
- ❖ **Quality assurance:** To maintain quality of the system quality assurance is very important. Quality assurance ensures that the system is developed according to the actual requirements which are pre-defined requirements. It also ensures that system is developed according to the customer expectations.

5.5.2 DSDM atern standard quality measure

DSDM atern follow a principle that is never compromise the quality of the system. DSDM always try to provide best solutions with expected result. DSDM atern obey two rules. Those are given below:

Solution Quality: Solution quality obeys a method that is forwarding a solution based on user satisfaction and by completing business need. Solution quality strongly follows MoSCoW prioritization and time boxing. Maintaining proper quality all the tasks are completed within limit.

Process Quality: Process quality ensures the quality standard of an organization. DSDM atern follow CMMI process to determine organizational level of the solution. DSDM iterative process helps to progress of the process being correct.

5.5.3 Quality plan and measuring meter

Project quality plan refers to a quality management plan which describes standards, activities, processes and tools that are required to achieve quality in the delivery of a system. There are some plans which need to maintain properly in quality plan. Those are given below:

- Required resources need to be describe properly
- Resources, responsibility and authority are allocated correctly
- Every phase should be tested properly
- Proper documentation and guideline need to submitted when need to change any thing
- Implement practices, workflow and guideline properly

Chapter 6 – Feasibility

Introduction

Feasibility study is one of the most important parts in software development. Feasibility study helps to identify whether the project is technically, economically and operationally feasible.

6.1 All possible type of feasibility

There are different types of feasibility study. Those are given below:

- Operational feasibility
- Technical feasibility
- Economically feasibility

Technical Feasibility: My proposed system will be web based system. I have developed the system using PHP language. For design I have used HTML and CSS. Now a days PHP is one of the most popular web technology and has available free resources. Now it is very easy to manage daily activities effortlessly as all the functionalities are automated. So, this system will easily run and works in all latest web browsers.

For the proposed system this type of technical aspects will be used. Those are given below:

Hardware:

- HP Laptop
- Configuration
 - Intel Core i3
 - 4 GB DDR3 RAM
 - HDD 500GB
 - SSD 250GB
- Wi-Fi Router

Software:

- Xampp Server
- Google chrome
- Microsoft Office
- Notepad/ Adobe dream weaver
- Operating system windows-10
- PHP storm

Economic feasibility: Economic feasibility means cost analysis of the project. It helps to identify whether the project is economically feasible or not. My propose system is economically feasible because it is a web based system and is less cost effective than any other device based system. As my proposed system is web based system where we need domain name, hosting and internet cost which is not so high.

(ceopedia.org, 2019)

So this web based system is cost effective as equipment cost is not so high. Cost details are given below:

SL No	Area	Cost (BDT)
01	Hardware	58000
02	Software	49500
03	Hosting	2000
04	Others	18000
Total	=127500	

Details of Hardware cost:

SL No	Name of hardware	Price(BDT)
01	HP Laptop	56000
02	Router	2000
Total	=58000	

Details of software cost:

SL No	Name of software	Licenses (Duration)	Yearly Price	Total price(BDT)
01	Xampp Server	Totally free	0	0
02	Google chrome	free	0	0
03	Microsoft office	1 year	9500	9500
04	Dream weaver	1 year	5000	5000
05	Windows Operating system	1 year	20000	20000
06	PHP storm	1 year	15000	15000
Total	=49500			

Details of hosting cost:

SL No	Name of service	Package Name	Yearly Price (BDT)	Total price(BDT)
01	Domain service	1 year	1300	1300

02	Business Shared hosting	Business Shared hosting	700	700
Total	=2000			

Details of other cost:

SL No	Name of service	Duration	Monthly Price (BDT)	Total price(BDT)
01	Electricity bill	1 year	1000	12000
02	Internet Bill	1 year	500	6000
Total	=18000			

Operational Feasibility: Operational feasibility means to fulfill end user expectation and find out possible usability advantages. Through my proposed system customer and seller both will be benefited. In the system, there is an admin panel where admin can manage the daily activities. Admin do not need to registration because admin panel will only be used the admins. There will be default username and password for admin. Through the default username and password admin can login into the system. On the other hand, customers need to register first for buying product. After register they can see product, search product, add to cart product and can buy product effortlessly.

6.2 Cost benefit analysis

Cost benefit analysis means to find out the assumption of expenditure and earning of the project. For getting the benefits of the project total expenditure and total earning are compared. Cost benefit analysis of the project is given below:

Project total cost:

SN	Expenditure area	1 st year	2 nd year	3 rd year	4 th year	5 th year	Total (BDT)
01	Hardware	58000	-	-	-	-	58000
02	Software	49500	-	-	-	-	49500
03	Domain and hosting	2000	2000	2000	2000	2000	10000
04	Development time cost	4000	-	-	-	-	4000
05	Office expense	20000	20000	20000	20000	20000	100000
06	Salaries expense	40000	40000	40000	40000	40000	200000
07	Additional cost	18000	18000	18000	18000	18000	90000
	Total	191500	80000	80000	80000	80000	511500

Total earning of the project:

SN	Earning area	1 st year	2 nd year	3 rd year	4 th year	5 th year	Total (BDT)
01	Ecommerce earning	80000	100000	140000	180000	200000	700000
02	Personal adds earning	-	10000	40000	80000	120000	250000
03	Google add sense earning	40000	50000	100000	130000	150000	470000
	Total	120000	160000	280000	390000	470000	1420000

Total revenue of the project:

SN	Sector	1 st year	2 nd year	3 rd year	4 th year	5 th year	Total (BDT)
01	Total earning	120000	160000	280000	390000	470000	1420000
02	Total Expenditure	191500	80000	80000	80000	80000	511500
	Total Revenue	-71500	80000	200000	310000	390000	908500

After cost benefit analysis, now it is clear that using this system organization will get big amount of revenue and revenue will increase year by year. After analysis, now we can see that in first five years organization will get revenue approximately 908500. So, the project is very useful for the organization.

6.3 DSDM is good or not for the project:

DSDM is a very popular project development methodology which follows the iterative development process and maintains the rules properly. DSDM aim is to ensure the quality of the system and follow time and budget properly. In DSDM method basic functionalities are develop quickly. End users involvement is very easy is this method. As it is an academic project, so DSDM methodology is important and useful for this project. And my proposed system is matching with DSDM characteristics. So, I think DSDM is useful for the project.

Chapter 7 – Foundation

7.1 Problem area identification

For getting better performance from a system finding out the problems are key solutions. It is not possible to provide a proper solution without finding the main problems. Users can easily find a problem after using the system, so finding out the problems users can help a lot. There are some ways to find out the problems from users. Those ways are given below:

7.1.1 Interview:

Interview is one of the most effective techniques to gather information and to find out the problems from users. By taking interview, we can easily know about the user requirements what kind of requirements user want and what is missing in the existing system and possible solutions for the problems which they are facing. Some questions are set for taking interview from the users for my proposed system to find out the problems. Those questions are given below:

- What type of food customer want to buy through ecommerce
- What type of problem user face when buying a product
- What should be the product testing process
- Which payment method users want to use

7.1.2 Observation:

Observation is another technique to gather requirements and identifying problem areas of a project. Observation helps to find out extra or new requirements which are not possible through interview. Observation technique is used to collect field data for proposed system. Observations main reasons are given below:

- Existing system buying process
- Current system main problems will be noted
- Going to identify business requirements

- Find out the important features which are lacking in current system

7.1.3 Questionnaires:

Questionnaires are one of the very good techniques for collecting information by asking question from users and stakeholders. This technique is very simple and easy. Setting up a list of questions for the users to get answers, it may be short questions or multiple choice questions (MCQ). There is a sample format is given below:

Question For Problem Identification			
Name		Age	
User Type		Hobby	
Quesiton-01	What kinds of food do you want in ecommerce site?		
Answer			
Quesiton-02	What should be the refund and payment system?		
Answer			
Quesiton-03	Which features do you like most?		

7.2 Rich Picture:

Rich picture is a diagrammatical representation which helps to explore, acknowledge and define a situation. It helps to identify potential stakeholders and their activities in

the system. It also shows the conflict between stakeholders and how the overall process is going into a system.

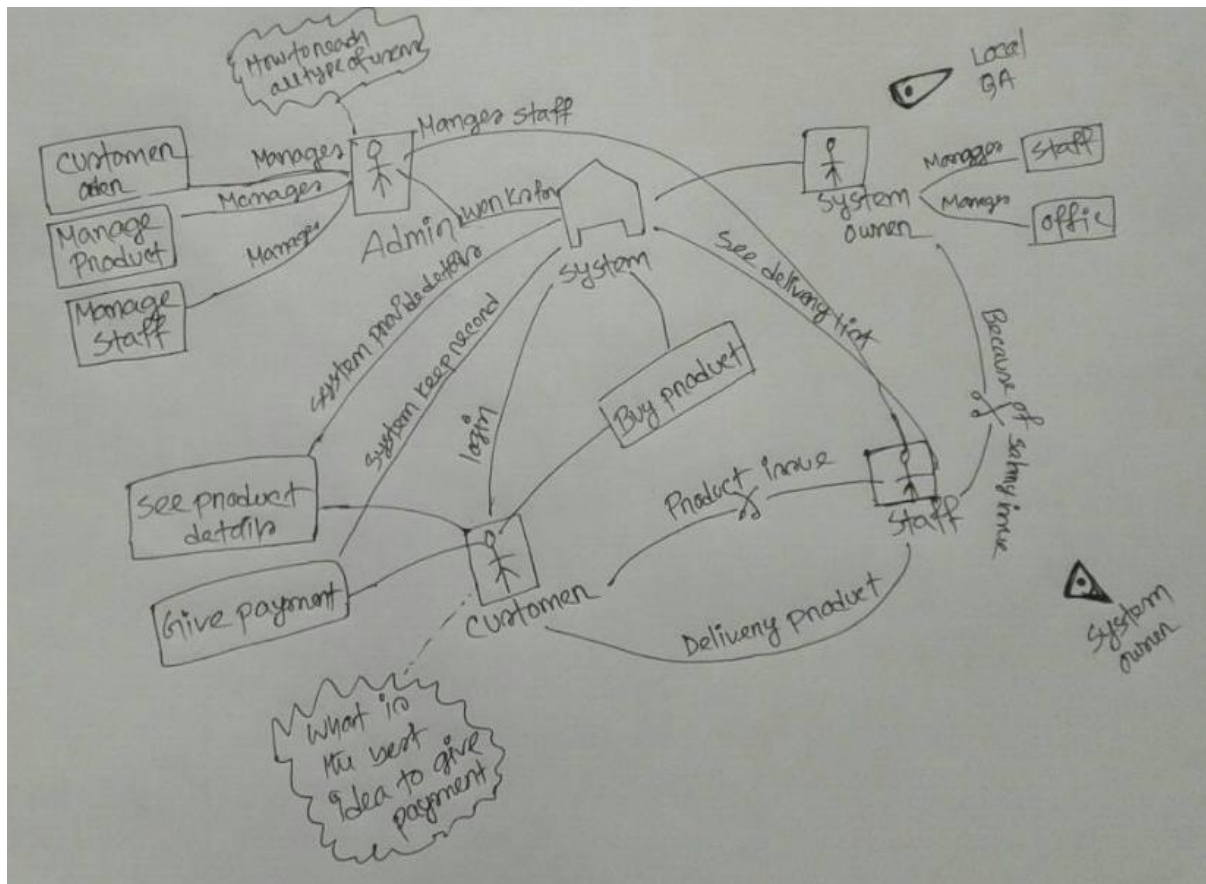
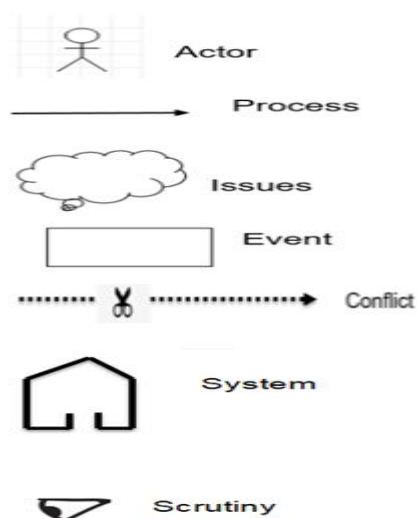


Figure 20: Rich picture of the proposed system

Legends of rich picture are given below:



Key actors:

There are two types of key actors are in the system. Those are given below:

- Customers
- Admin

Description of the rich picture:

The rich picture presents the business flow of the proposed system. In this rich picture, we can see that different stakeholder is doing their activities. This picture shows how customers buying their products, how admin manages order process and other activities. It also shows staff is assign for delivery product. In this rich picture, we have found some conflicting issues which are happened between customer and staff, and staff and system owners. There is a chance to conflict between customer and staff because when staff will delivery product that time customer may arise question about the product quality or something else. Staff and system owner conflict can happen because of salary issue or not giving some other facilities. Scrutiny shows that system owner and local quality assurance will looks after the business activities.

7.3 Problem specification area and identification

After going through every chapter of foundation phase some problems have arisen. Techniques find out the users problem and rich pictures help to find out conflicting area and business issues. Some problems of the proposed system are given below:

- There are no site found which sells traditional or seasonal food
- Trusted issue is lacking among the users
- Some ecommerce not selling the product according to their description
- Some website offer option to contact with seller but response is too long
- Some site offers to buy product from anywhere, but sometimes we can see that their stock is limited or stock is not available

7.4 Possible Solution:

After analysis all the problems and areas, I think an automated system with new features and functionalities can be the best solution to overcome existing system problems. The solutions are given below:

- Build a trusted website by delivering actual product to the customers and ensure secure transaction
- As there is no traditional and seasonal food ecommerce in Bangladesh so this site can be popular one for the people
- Management must be loyal to their customers so that they feel interest in using the site
- Establishing an easy buying process where customer can buy products from anywhere
- Product description must be clear and delivery the product according to description

7.5 Overall requirement lists

There are two types of requirements for the system. Those are functional and non-functional requirements. Functional and non-functional requirements are given below:

Functional requirement for my proposed system is given below:

- Customer registration and login
- Update customer profile
- Product showcasing
- Search product
- Add to cart product
- View product details
- Remove products from the cart
- View available orders
- Add, update, delete products by admin

- View customer information by admin
- Manage orders by admin
- Add staff by admin
- Manage staff by admin
- Monthly sales report
- Product sales report
- Logout

Non-functional requirements:

- User friendly
- Security
- Validation and verification
- How quickly response the system
- Reliability
- Efficiency
- Testability

7.6 Technology to be implemented

There are different kinds of technology for implementing a project. Client server application and web server are two popular technologies. These two is used for different purposes. Description of these two technologies is given below:

Client server application:

Client server application refers to client related with server. It is software that is run on client computer. And it makes request to a remote server that is store on client machine. Main features of client server are given below:

- Required to be install on client's machine
- Provide quick action against a request
- This is expensive
- Can access low number of users at a time

Web server application:

In web server technology, applications are stored on the server. With the help of a browser and fixed domain name customer can easily access to the server through the internet. There is no need to install any machine. People of all over the world can easily connect with the system by searching the domain name and all the people will get the same data. Main features of web applications are given below:

- Web server application is URL driven applications.
- No need to install any machine
- Easy to access through internet
- Supports all web browsers and faster also

7.7 Recommendation and Justifications

For proposed system web server application will be suitable because users of over the country will be using this application. Customers need to access the system from anywhere and it is required to ensure all customers will get the same data. So for this reason web server is appropriate for the proposed system because client server cannot handle huge number of users at a time. Moreover, web server is easy to access and most of the people are familiar with this technology. So, I will recommend web server application for proposed system.

Chapter 8 – Exploration

Introduction:

In this chapter, business requirements will be analyzed in details to discover new requirements which can make task easy than before. This research could help to increase the satisfaction level of end users.

8.1 Old System Use case

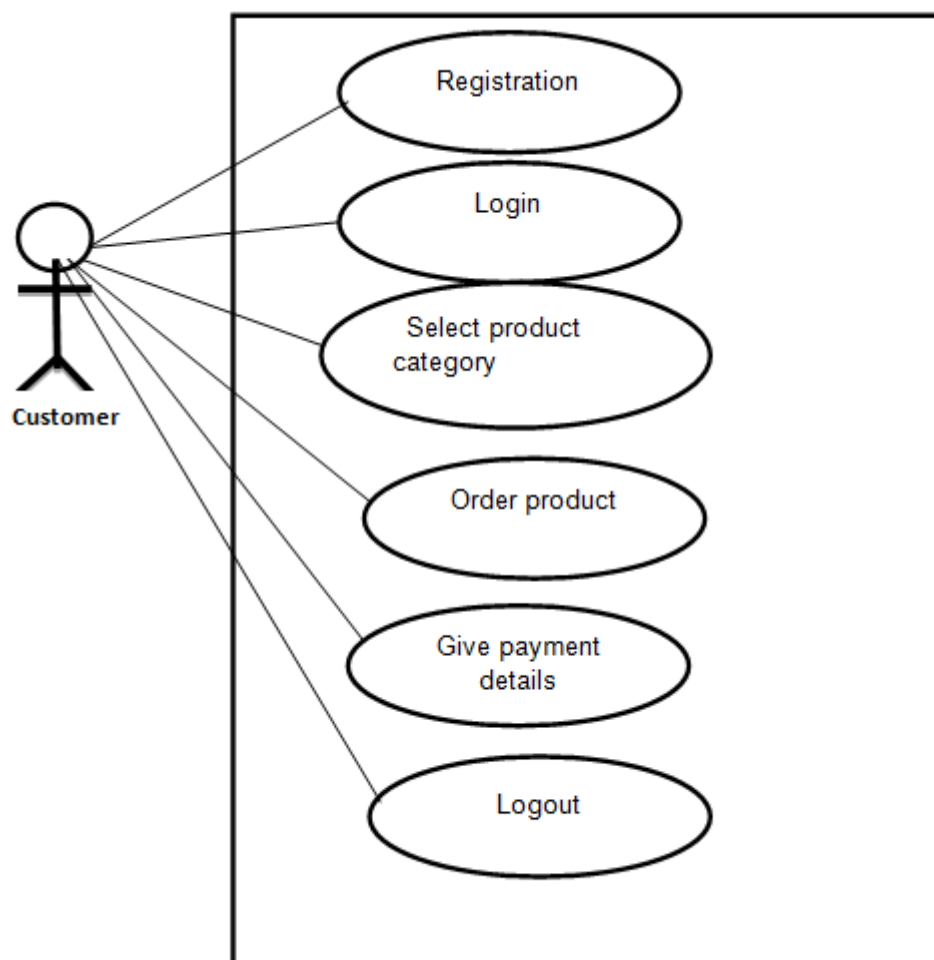


Figure 21: Old system use case

8.2 Activity diagram

An activity diagram is an advanced flow of flow chart which shows the data work flow between systems.

User's activity diagram:

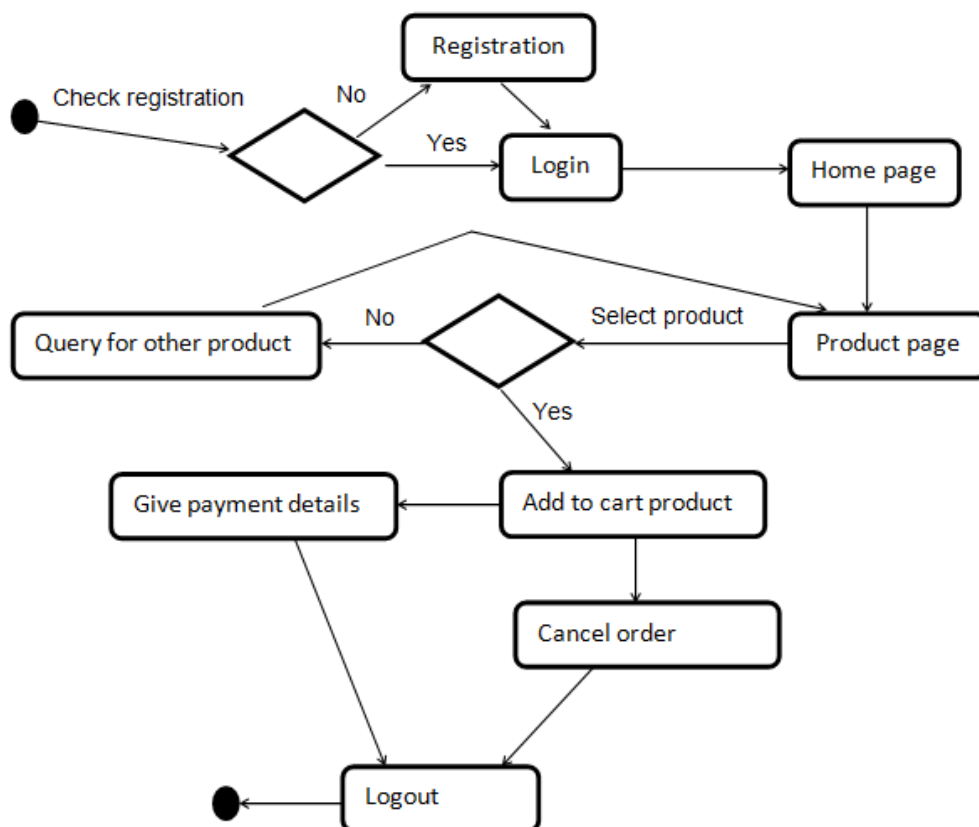


Figure 22: User's activity diagram

8.3 Full system use case diagram:

Use case diagram shows a system functionalities and requirements using by system actors and use cases. Use case diagram represent the high level functionalities of the system and how a user will handle the system.

In my proposed system, there are three types of actors such as customers, admin and staff. The proposed system full use case diagram is given below:

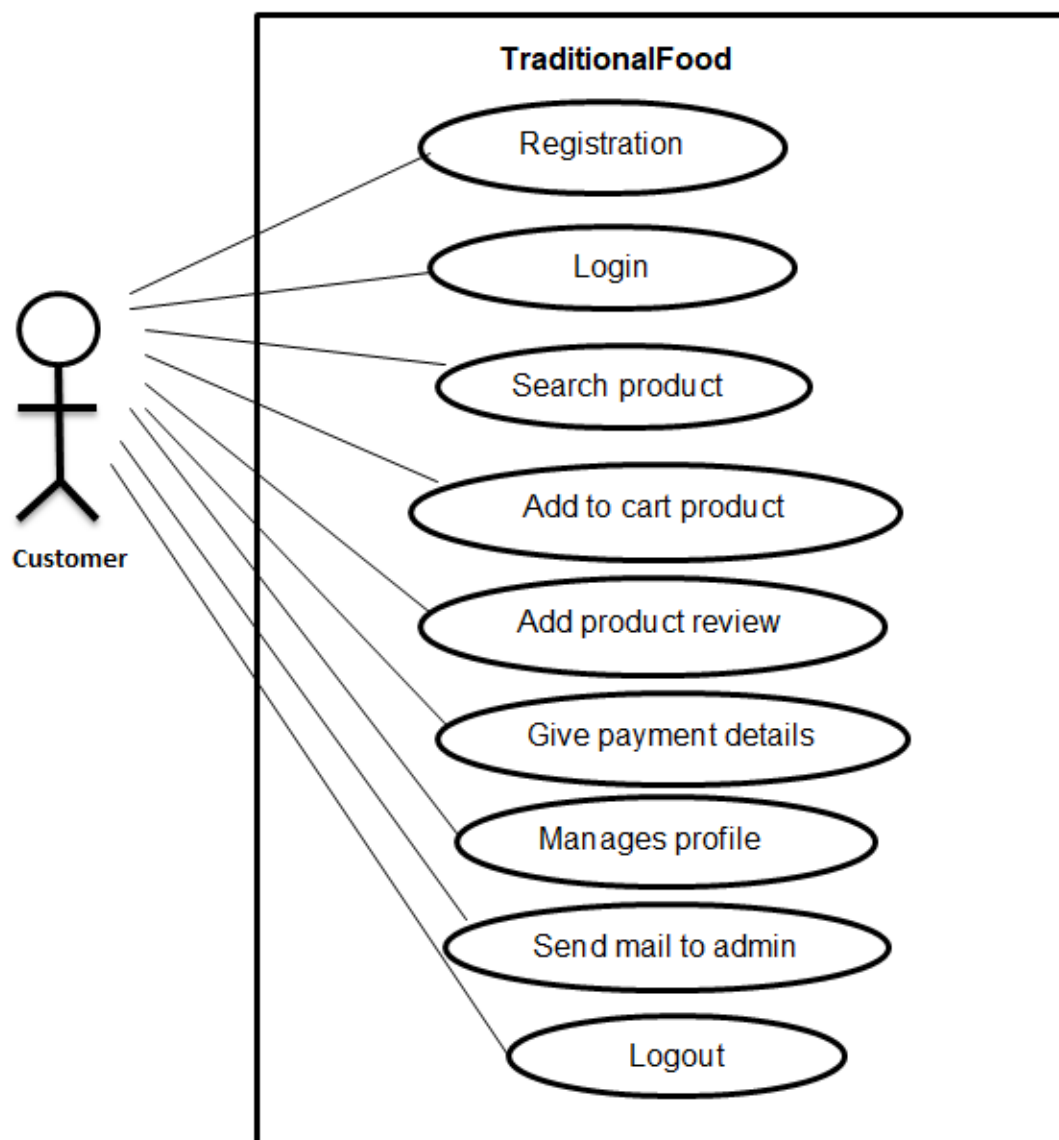


Figure 23: User's use case diagram for proposed system

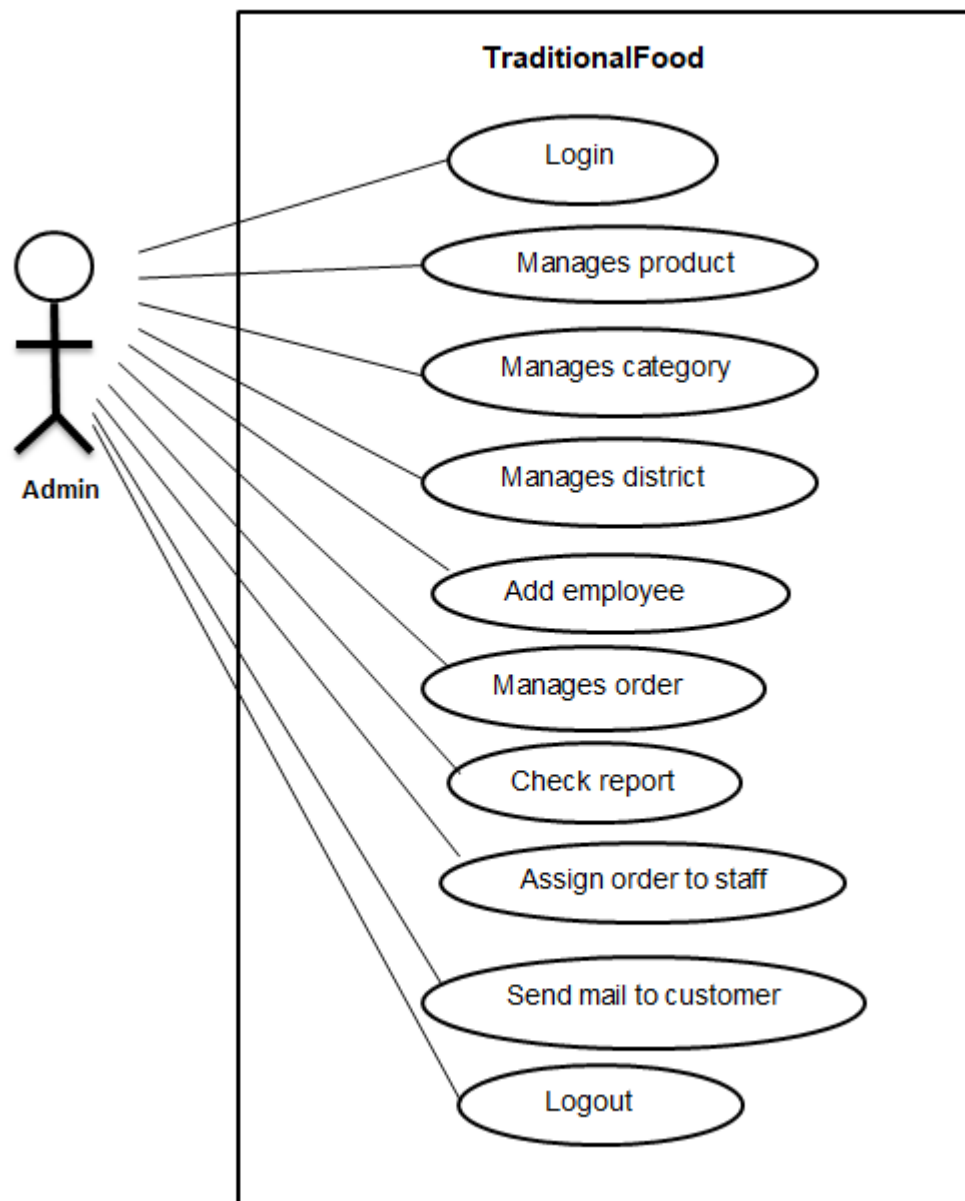


Figure 24: Admin's use case diagram for proposed system

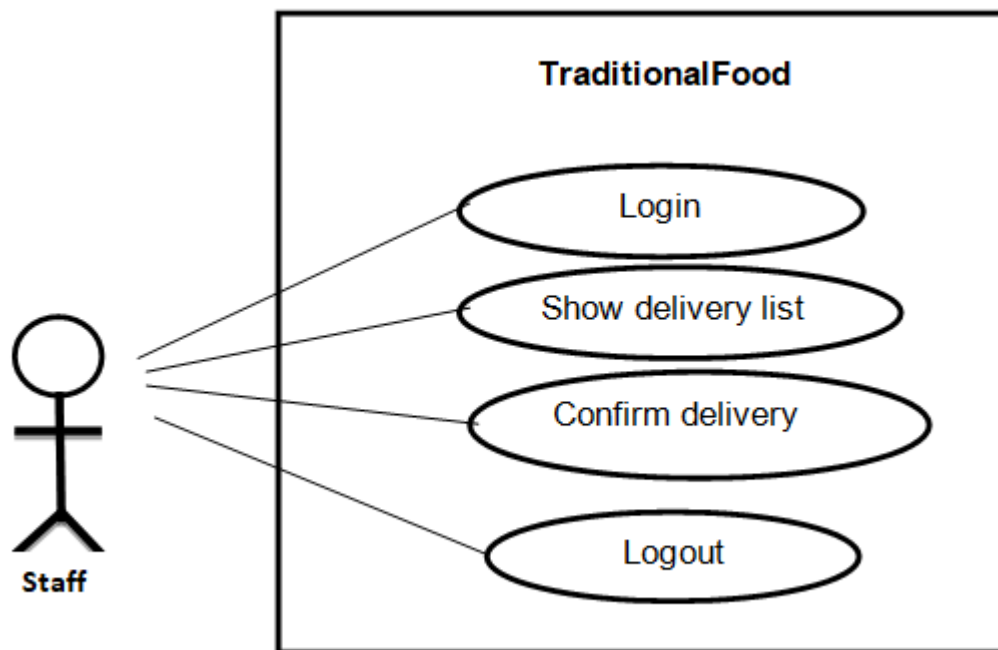


Figure 25: Staff's use case diagram for proposed system

8.4 Full system activity diagram:

System main workflow previously represents once. Here full system activity diagram is given. The proposed system has three types of actors. Those are customers, admin and staff. For each actor activity diagram is given below:

User's activity diagram:

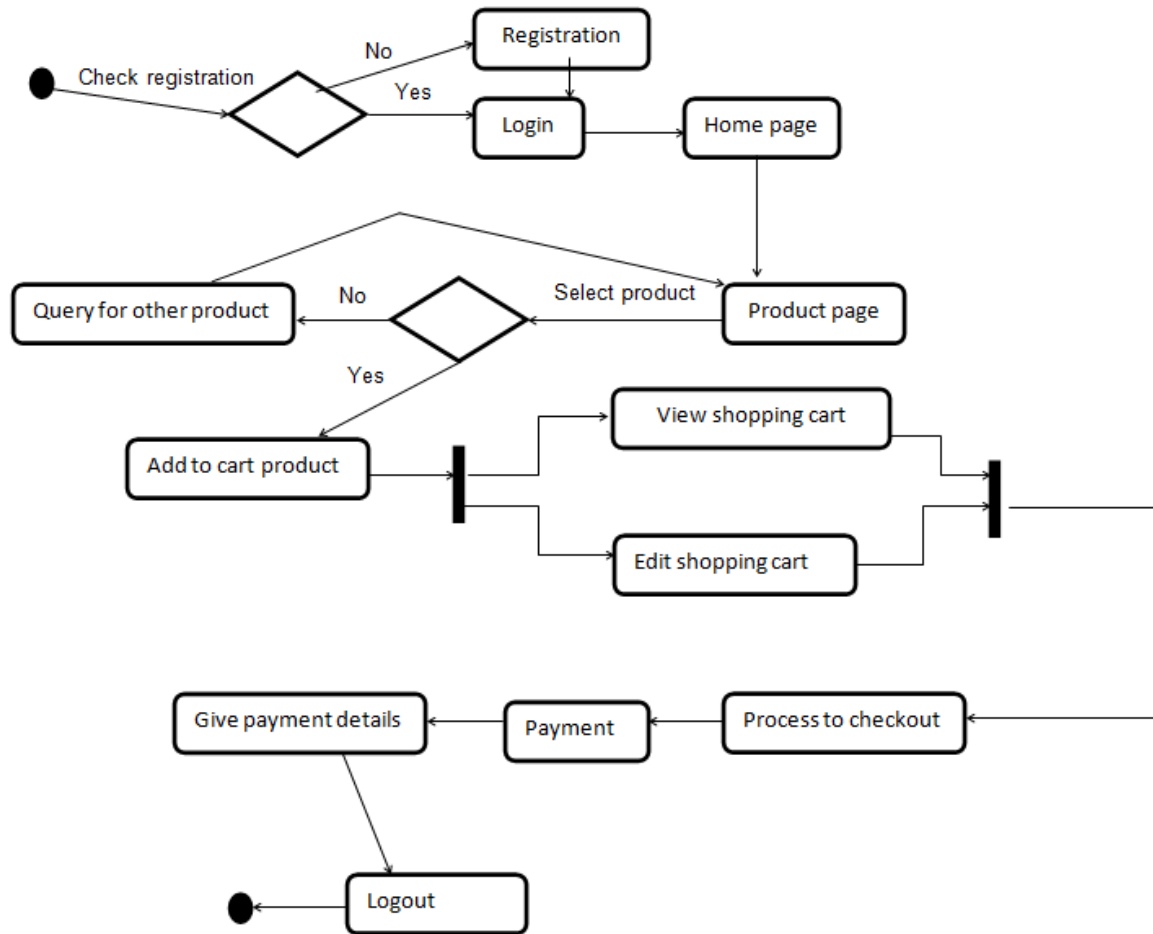


Figure 26: Users full system activity diagram for proposed system

Admin activity diagram:

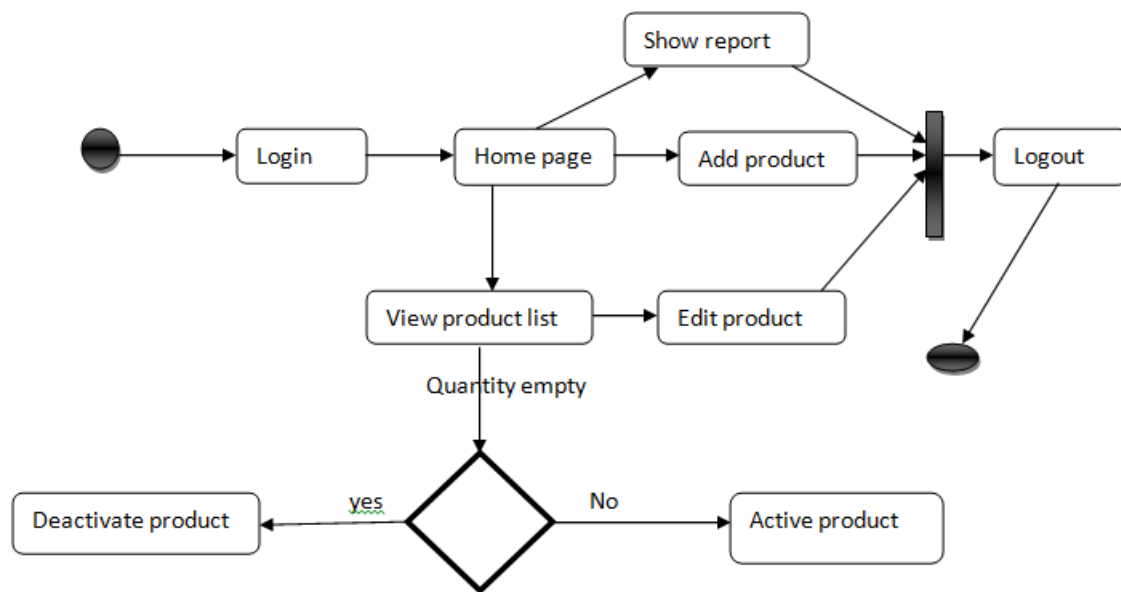


Figure 27: Admin full system activity diagram for proposed system

Staff activity diagram:

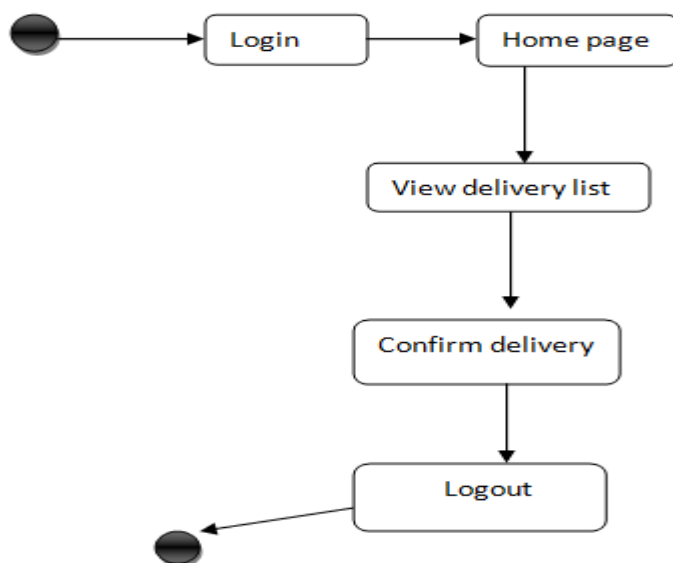


Figure 28: Staff full system activity diagram for proposed system

8.5 Requirement catalogue:

To develop a system requirements list is very much essential and effective. Following a format all those requirements now required to add to a catalogue. With a standard format requirements catalogue are given below:

Functional requirements catalogue:

Requirement catalogue for Registration/Login

Source	Sign off	Priority	Requirement ID
Admin	All users	Must have	MH-01
Functional requirements-Registration/Login All users must be login or registration into the system if they want to buy products, without registration they can see product, add to cart product but for buying products they must be register user to the system			
Non functional requirements			
Description	Target value	Acceptance value	Comments
Registration/Login	300 per day	300-500 per day	

Requirement catalogue for buying products

Source	Sign off	Priority	Requirement ID
Admin	All users	Must have	MH-02
Functional requirements-Buying products Every register user can able to buy their closeable products by login into the system. They can also give feedback to the system.			
Non functional requirements			

Description	Target value	Acceptance value	Comments
Buying products per day	50-100 per day	300 per day	Customers can buy products without any trouble

Requirement catalogue for report generation for sales product

Source	Sign off	Priority	Requirement ID
Admin	Admin	Must have	MH-03
Functional requirements- Report generate			
System admin can view product sales reports and monthly sales reports of the product.			
Non functional requirements			
Description	Target value	Acceptance value	Comments
Report generate for product sales report	05 per day	40 per day	

Requirement catalogue for product review and feedback

Source	Sign off	Priority	Requirement ID
Admin	All users	Should have	SH-02
Functional requirements-Product review and feedback			
Customer can review and feedback about any products			
Non functional requirements			

Description	Target value	Acceptance value	Comments
Products review	30 per day	300 per day	

8.6 Prioritized requirement list (PRL):

Prioritized requirement list is a MoSCoW technique that is used to identify the most important functionalities of a system. It helps to understand the requirements and set the priority of the features. Using MoSCoW technique the prioritized lists are produced which is given below:

Status	Requirements name
Must have	<ul style="list-style-type: none"> • Customer registration and login facilities • Product showcasing • Add to Cart product • Update cart • View order details • Choose payment option • Admin login • Manage products by admin • Manage category by admin • Manage order by admin • Sales report shown by admin • Admin can manage staff • View order details • Customer logout • Admin Logout
	<ul style="list-style-type: none"> • Customer can search product • Customer review and feedback

Should Have	<ul style="list-style-type: none"> • Monthly report • Password recovery • Manages customer profile • Admin can manage customer comments
Could have	<ul style="list-style-type: none"> • User can save product • Confirmation/ feedback mail to the customer • An option to contact with admin
Not have	<ul style="list-style-type: none"> • Live chat option • User can compare one product with another product • Customer can share product to social media

8.7- Prototype of new system

Prototype is the first step for designing of a good interface of system. Some of the prototypes of my proposed system are given below

WELCOME TO LOGIN

EMAIL *

PASSWORD *

[Forget password?](#)

Figure 29: Prototype of Login page

All products page prototype:

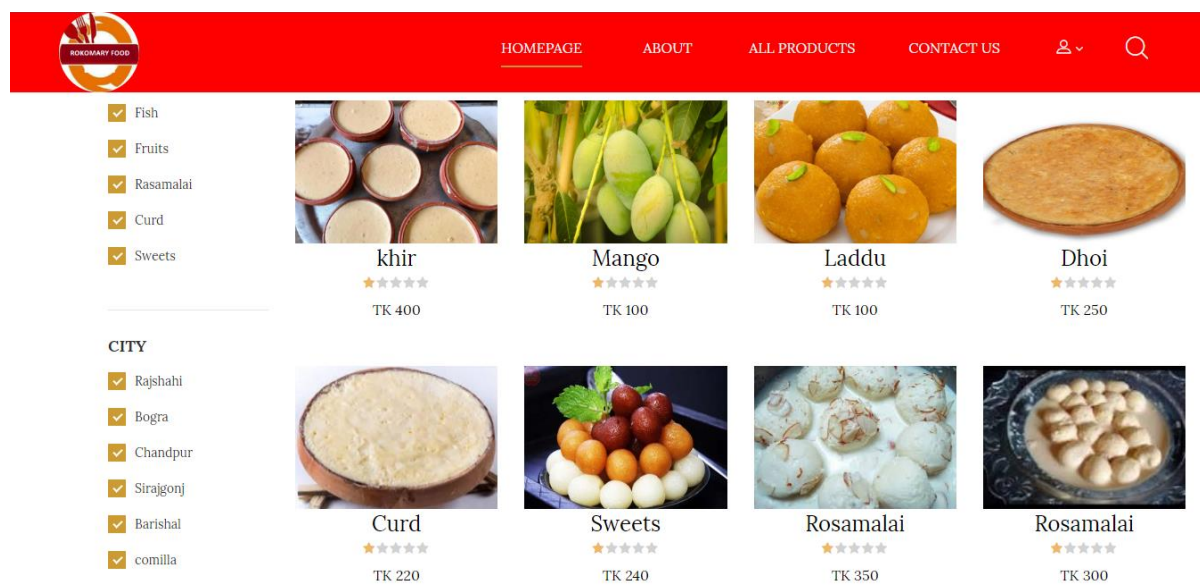


Figure 30: All products page prototype

Product details and add to cart prototype:

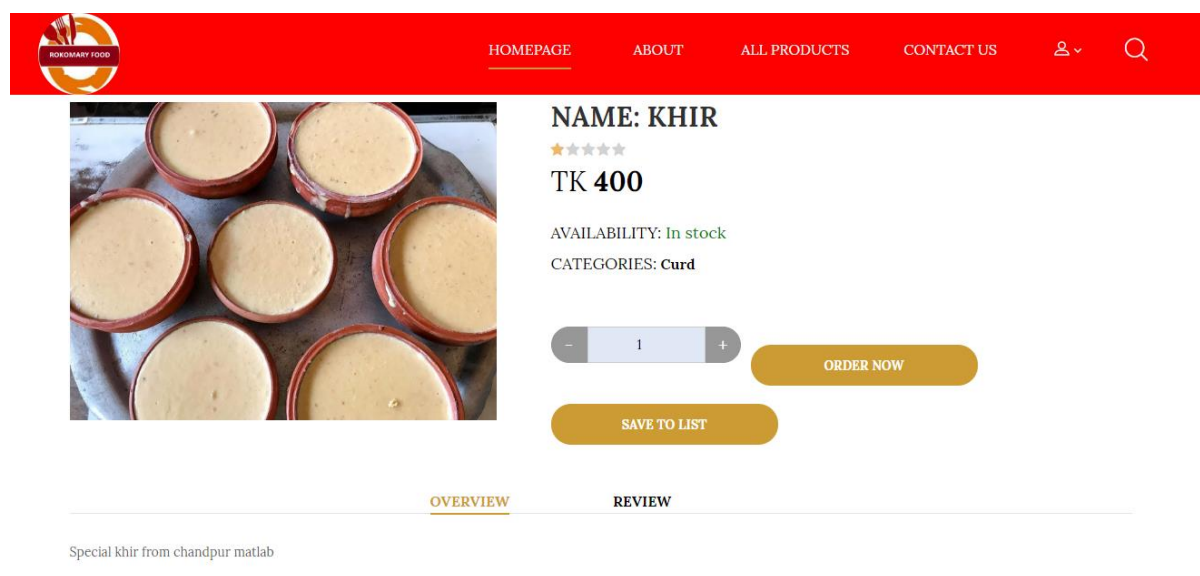


Figure 31: Product details and add to cart prototype

Chapter 9 – Engineering

9.1 New system module

Proposed system main modules are given below. It will provide an idea of how new system doings specific task.

Login and registration module:

SL	User Action	SL	System Action
1	User click on the registration	2	System will provide a registration form
3	User fill up the form	4	System checks the data about its validation
5	User click the registration button to confirm registration	6	System verify the registration and confirmed registration
7	User give registered email and password to login	8	System checks the validity
9	Users click the login button	10	System checks the authentication and drives the user to home page.

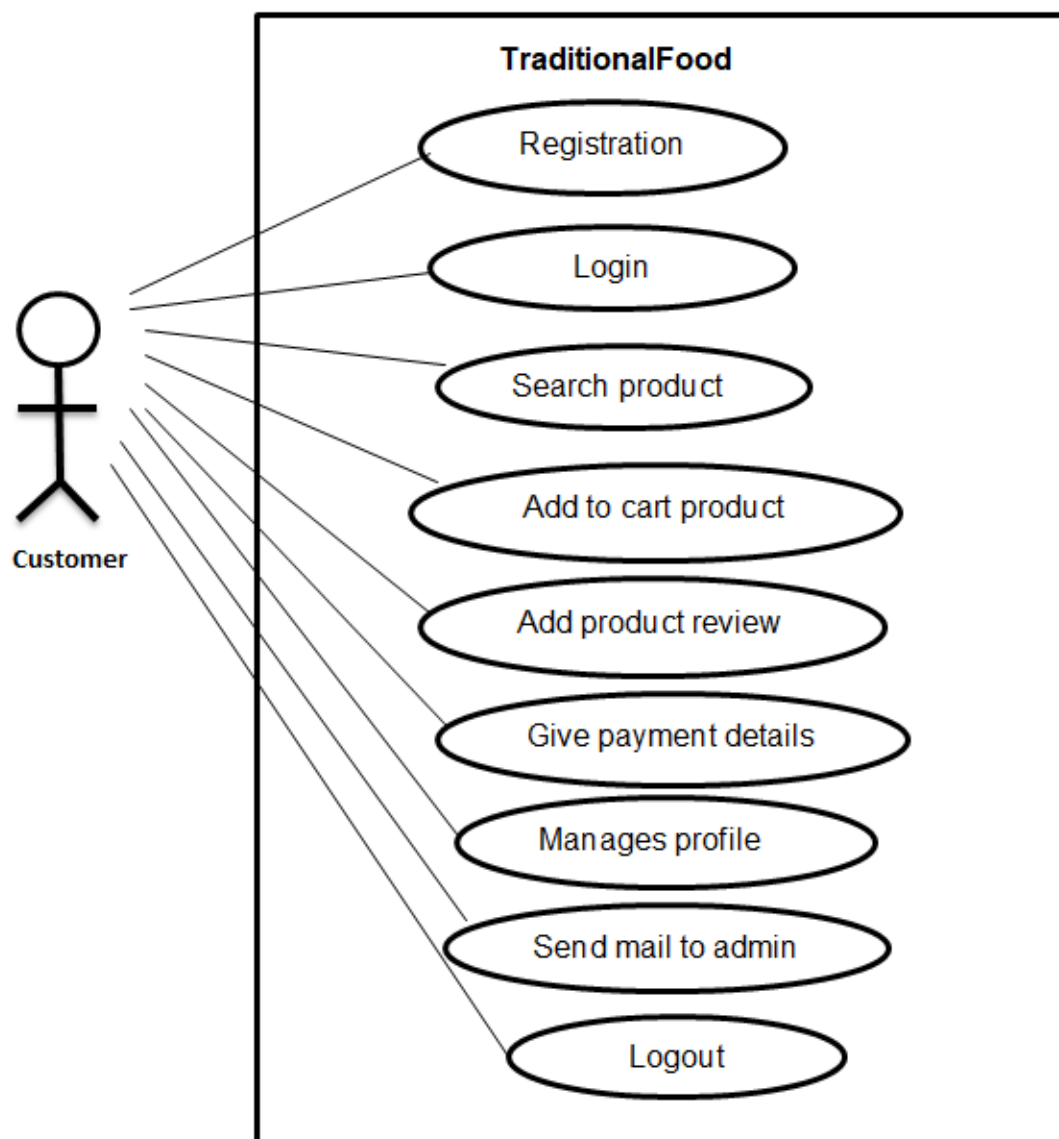
Buying product module:

SL	User action	SL	System action
01	Customer choose a product for buying	02	System will show the product with details
03	Customer will add the product to cart	04	System will allow customer to add product to cart and allow customer to update quantity or cancel order
05	Customer give the payment details	06	System will provide a successful message to the customer and will ensure the product will delivery quickly

Add product:

SL	User action	SL	System action
01	Admin will click on add product	02	System will show a form of product details
03	Admin will insert data in the form	04	System will check the field validity
05	Admin click the submit button	06	System will provide a successful message and add data on the database and show on the page

9.2- Use case diagram of proposed system



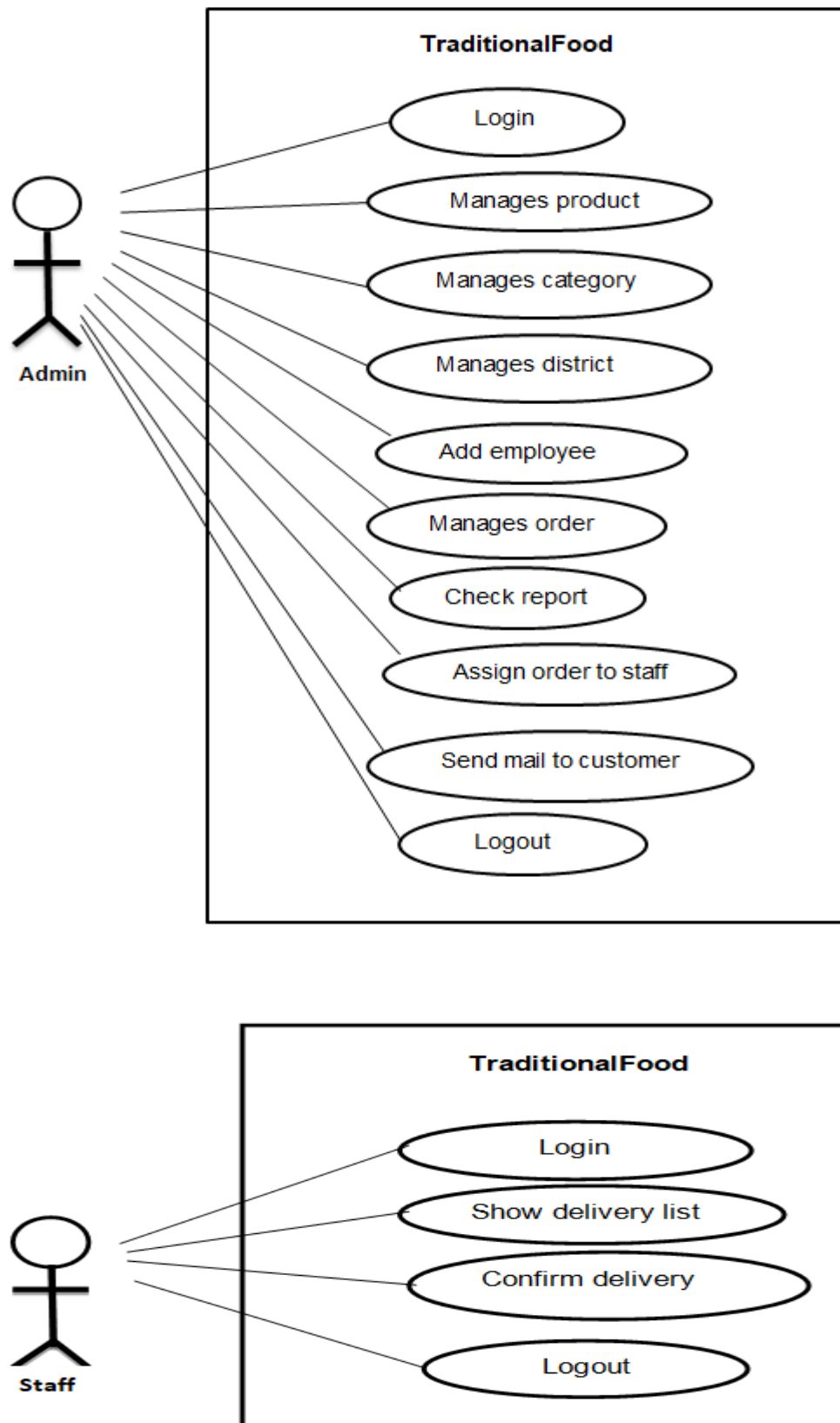


Figure 32: Full use case diagram of proposed system

9.3 Class diagram:

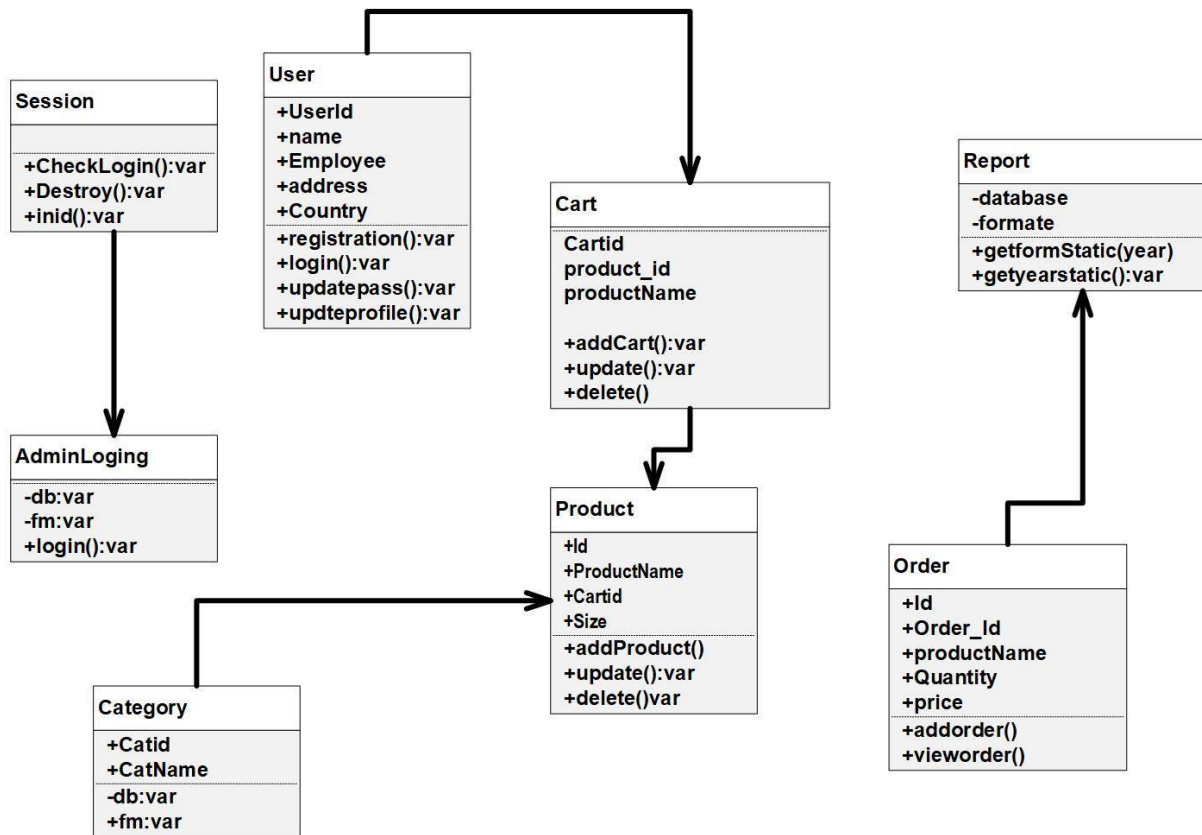


Figure 33: Class diagram

9.5 Sequence diagram:

Sequence diagram shows the steps of how objects are come one after another in the system.

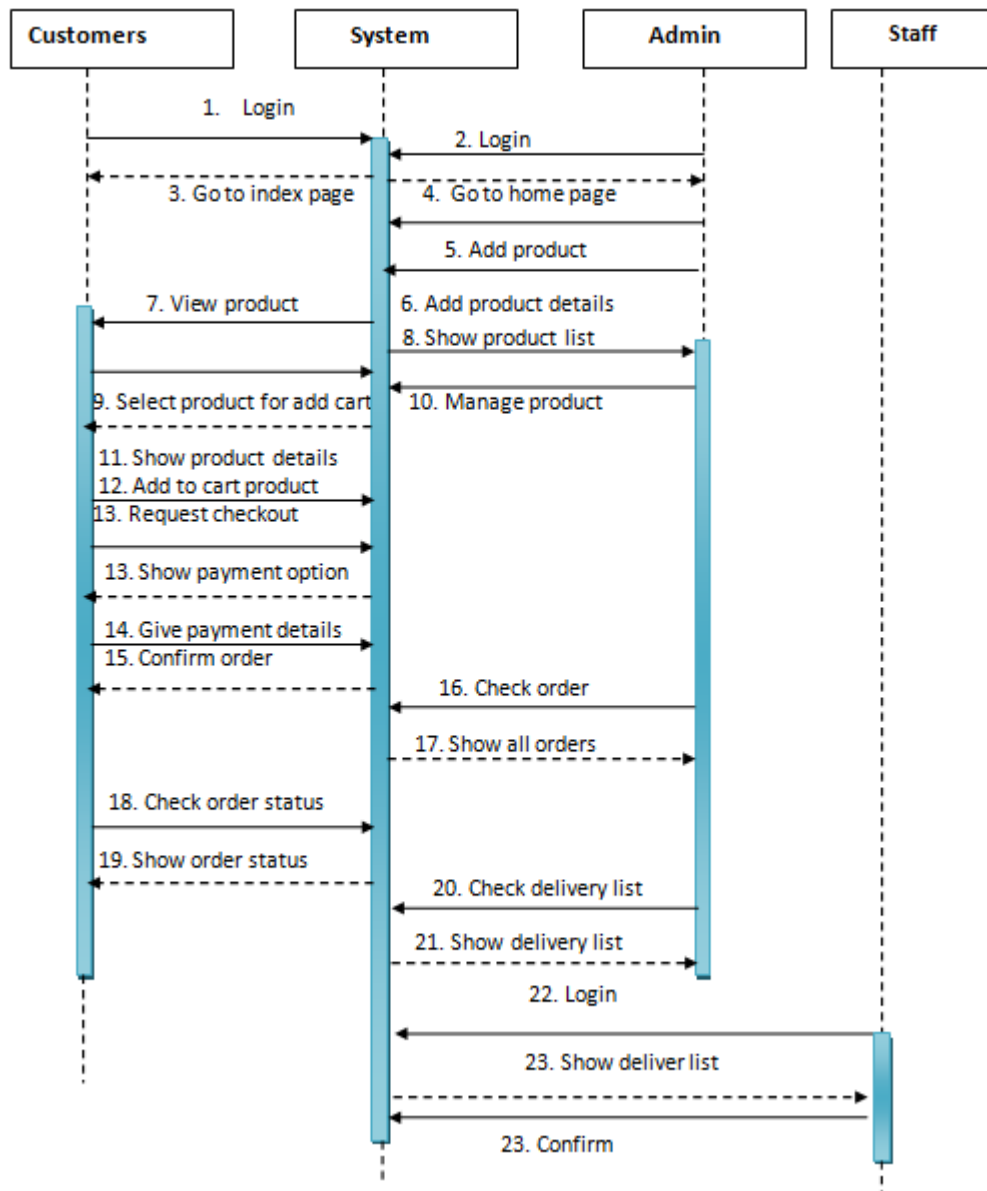


Figure 35: Sequence diagram of proposed system

9.6 Component diagram:

Component diagram is visually representation of all physical components of the system where each component is connected with others. Component diagram will helps to checking proper validity of the proposed system. Diagram is given below:

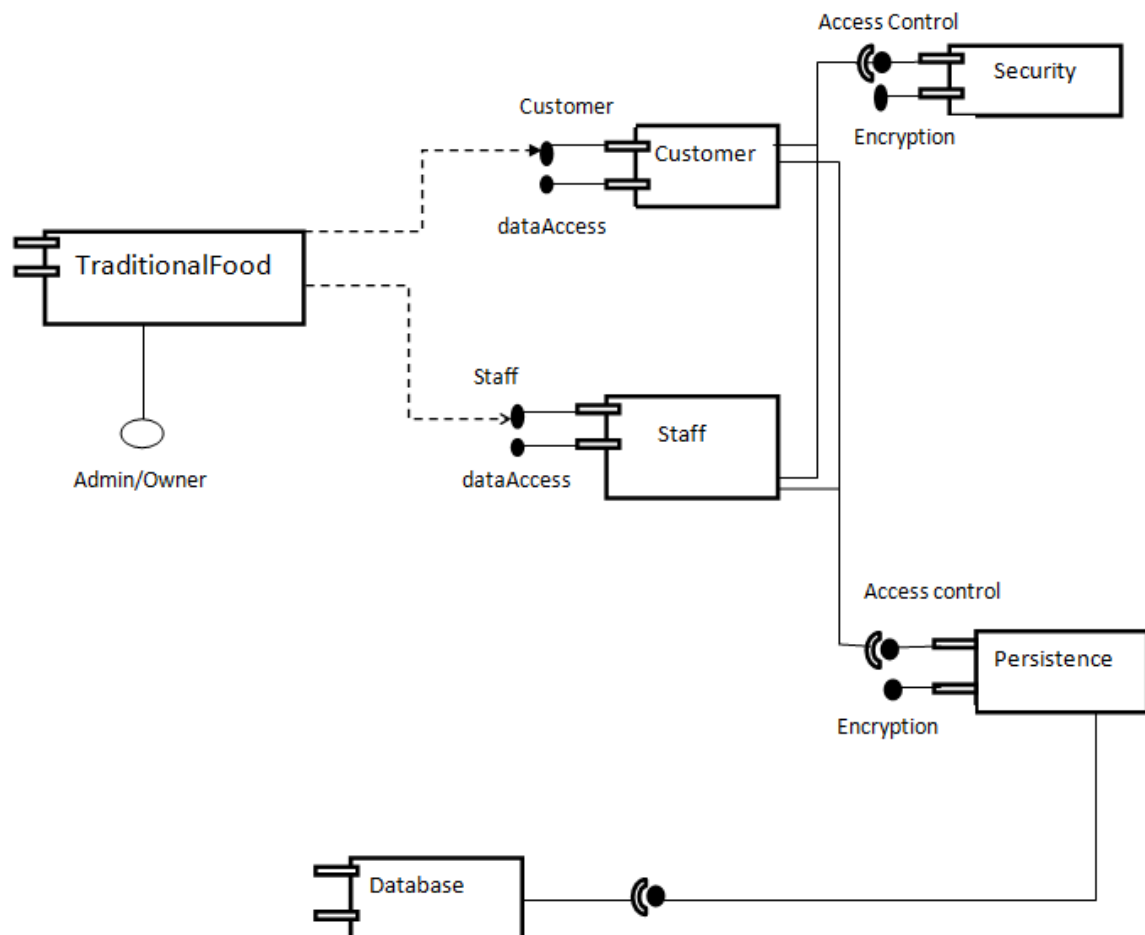


Figure 36: Component diagram of proposed system

9.7 Deployment diagram:

It is structural diagram which represents the architecture of a system.

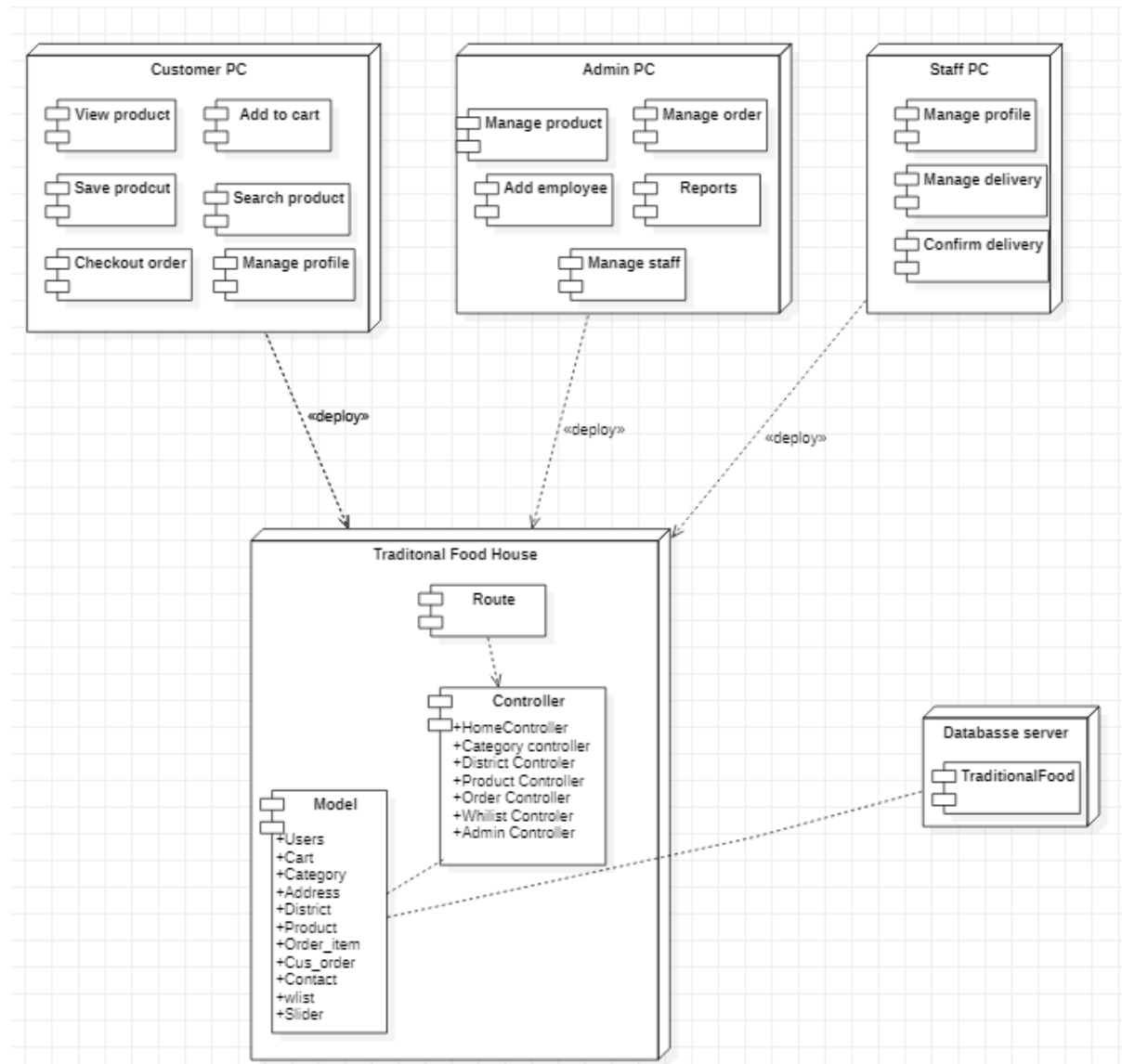


Figure 37: Deployment diagram of proposed system

9.8 Prototype of new system

Some of the prototypes of new system are given below:

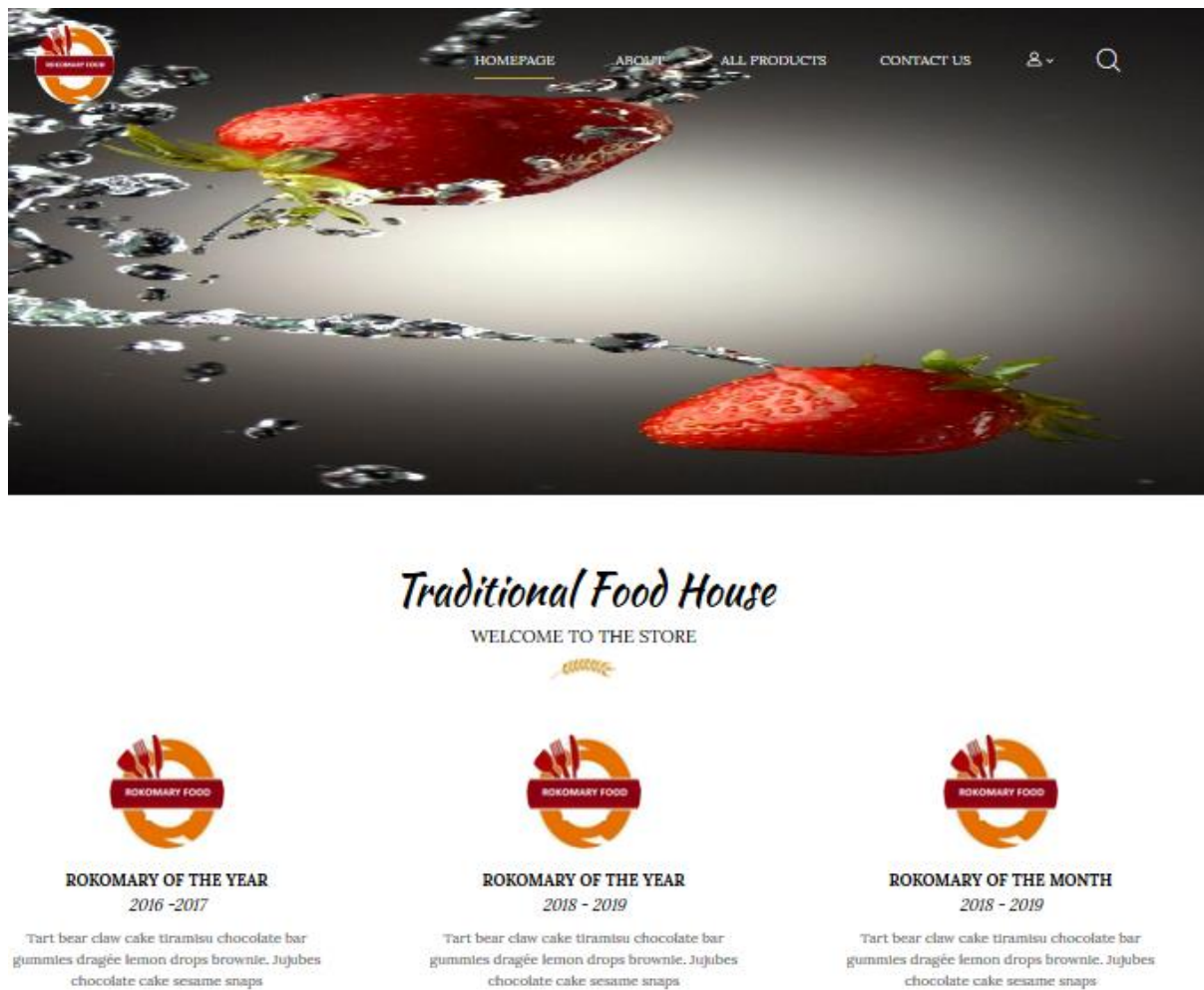


Figure 38: Home page

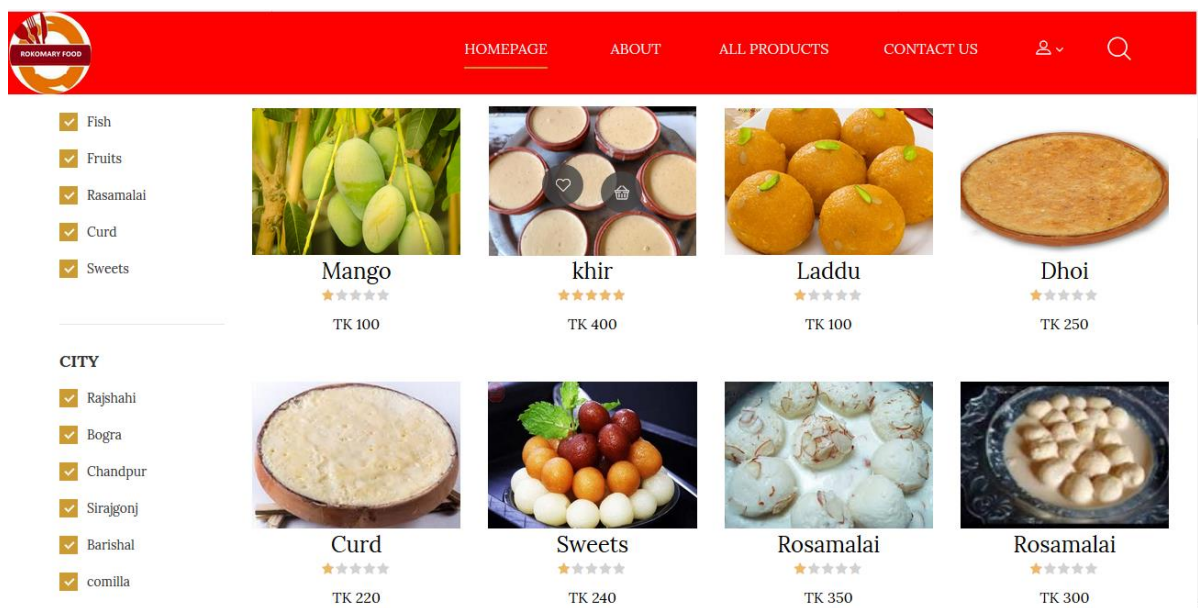


Figure 39: All product page

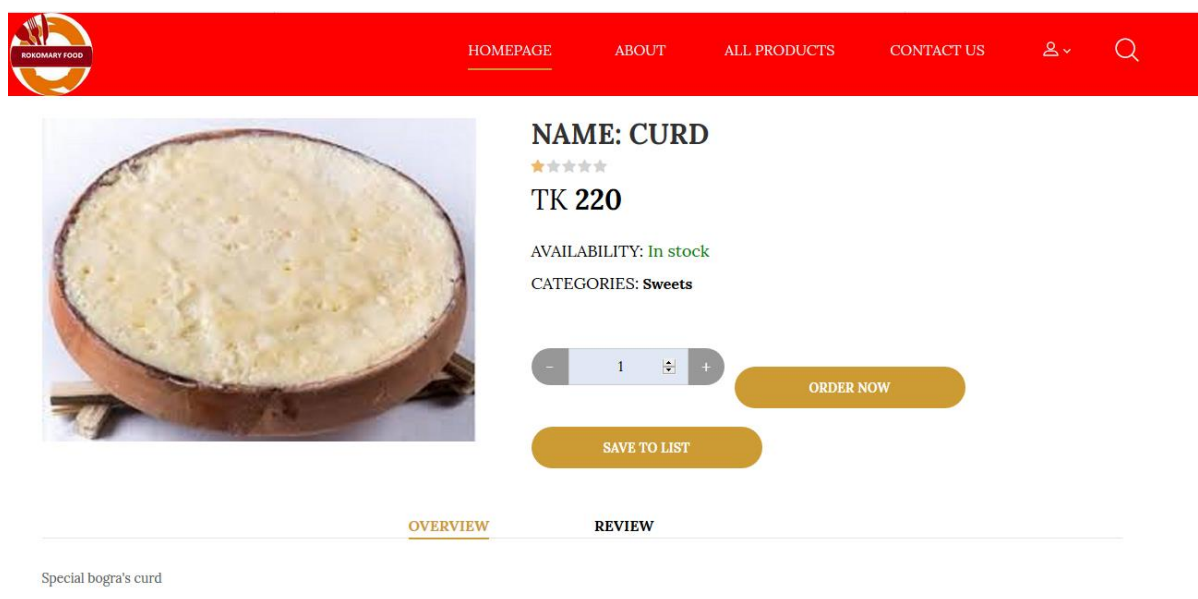


Figure 40: Product order page

New Product

Product Name *

Category *

City *

Content

File input
 No files selected.

Price *

Quantity *

Status

Figure 41: Add product form

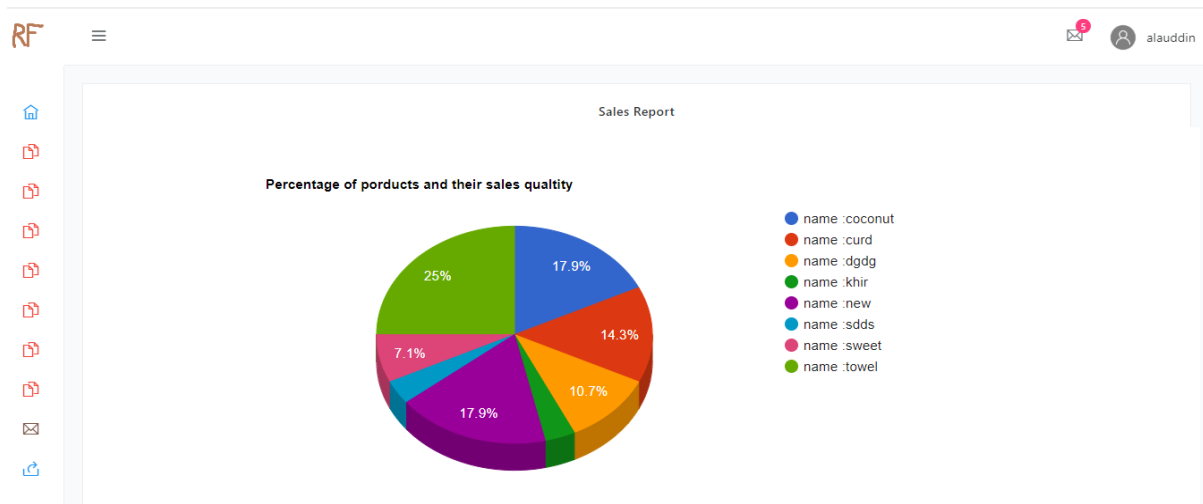


Figure 42: Product sales report

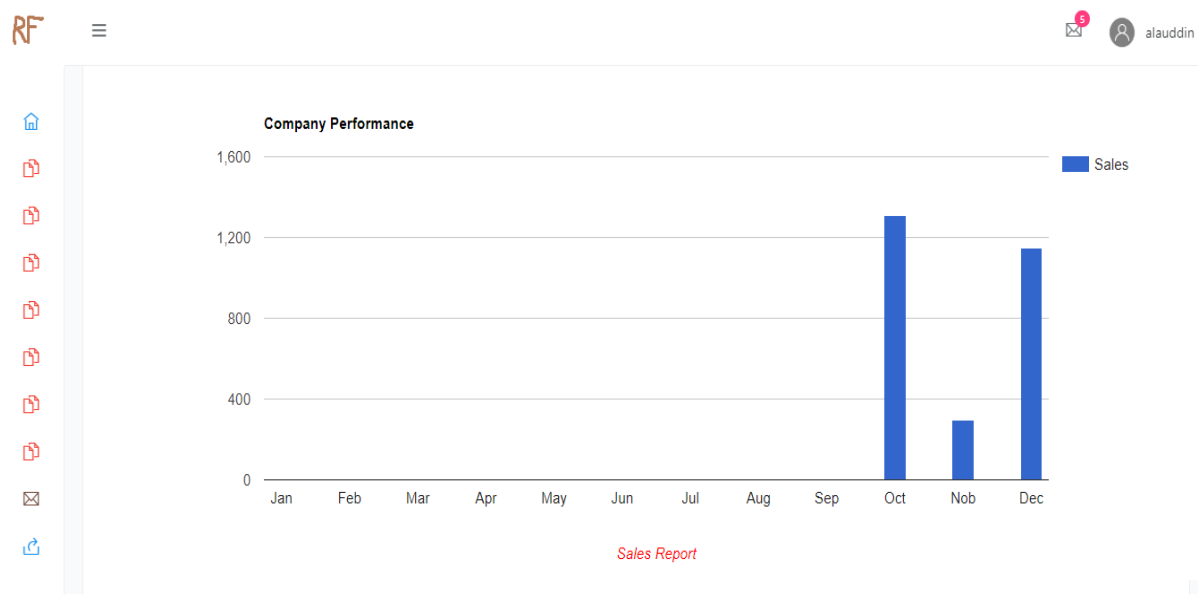


Figure 43: Monthly sales report

23	view items	290.4	Bkash	1098	2019-10-23 17:33:31	Pending	view address	edit
24	view items	290.4	Bkash	1098	2019-10-23 17:34:21	Pending	view address	edit
25	view items	220	Bkash	111	2019-10-23 18:09:08	Pending	view address	edit
26	view items	145.2	Cash		2019-10-23 18:22:34	Pending	view address	edit
27	view items	36.3	Cash		2019-10-23 18:31:28	completed	view address	edit
28	view items	110	Bkash	1098	2019-10-23 18:48:25	Pending	view address	edit

Figure 44: Customer order and delivery status

Chapter 10 – Deployment / Development

10.1 Code modules coding sample:

For developing the system HTML, CSS, PHP, JavaScript and jQuery are used. Some of the core coding samples are given below:

Add product coding sample:

```
<div class="mT-30">
  <form method="post" enctype="multipart/form-data">
    <div class="form-group">
      <label for="exampleInputEmail1">Product Name<span style="color: red;">*</span></label>
      <input type="text" name="productName" class="form-control" id="exampleInputEmail1" aria-describedby="emailHe
    </div>
    <div class="form-group">
      <label for="exampleInputEmail1">Category<span style="color: red;">*</span> </label>
      <select class="form-control" id="sel2" name="catId" required="required">
        <option >Select Category</option>
        <?php
          $cat=new Catagory();
          $getCat=$cat->getAllCat();
          if ($getCat) {
            while ($result=$getCat->fetch_assoc()) {
              <option value="<?php echo($result['catId']) ?>"><?php echo($result['catName']) ?></option>
            <?php }}else{echo("Category not found");} ?>
          </select>
        </div>
        <div class="form-group">
          <label for="exampleInputEmail1">City<span style="color: red;">*</span> </label>
          <select class="form-control" id="sel2" name="city" required="required">
            <option >Select City</option>
            <?php
              $cat=new Catagory();
              $getCity=$cat->getAllCity();
              if ($getCity) {
                while ($result=$getCity->fetch_assoc()) {
                  <option value="<?php echo($result['name']) ?>"><?php echo($result['name']) ?></option>
                <?php }}else{echo("City not found");} ?>
              </div>
              <div class="form-group">
                <label for="exampleInputEmail1">Content</label>
                <textarea class="form-control" rows="5" id="comment" name="body" required="required"></textarea>
              </div>
              <div class="form-group">
                <label for="exampleFormControlFile1"> File input</label>
                <input type="file" name="image[]" class="form-control-file" id="exampleFormControlFile1" multiple>
              </div>
              <div class="form-group">
                <label for="exampleInputEmail1">Price<span style="color: red;">*</span></label>
                <input type="number" name="price" class="form-control" id="exampleInputEmail1" aria-describedby="emailHelp" placeholder="pr
              </div>
              <div class="form-group">
                <label for="exampleInputEmail1">Quantity<span style="color: red;">*</span></label>
                <input type="number" min="1" name="qty" class="form-control" id="exampleInputEmail1" aria-describedby="emailHelp" value="1"
              </div>
              <div class="form-group">
                <label for="exampleInputEmail1">Status </label>
                <select class="form-control" id="sel2" name="status" >
                  <option value="=<?php echo($result['name']) ?>"><?php echo($result['name']) ?></option>
                </div>
              </div>
            </div>
          </div>
        </div>
      </div>
    </div>
  </div>
</div>
```

```

        <div class="form-group">
            <label for="exampleInputEmail1">Status </label>
            <select class="form-control" id="sel2" name="status" >
                <option value="active" selected>Active</option>
                <option value="inactive" >Inactive</option>
            </select>
        </div>
        <button type="submit" name="submit" class="btn btn-primary">Submit</button>
    </form>
</div>
</div>
</div>
</div>

```

Figure 45: Add product coding sample

Coding sample for report generation:

```

<?php
$getsalsstatic=$report->getAllSaleStatic();
?>
<script type="text/javascript" src="https://www.gstatic.com/charts/loader.js"></script>
<script type="text/javascript">
    google.charts.load('current', {'packages':['corechart']});
    google.charts.setOnLoadCallback(drawChart);
    function drawChart()
    {
        var data = google.visualization.arrayToDataTable([
            ['Gender', 'Number'],
            <?php
            $aa='<div>Brand : <b>$row["productName"]</b><br>Total Revenue : <b>';
            $ss="";
            $dd=0;
            while($row = $getsalsstatic->fetch_assoc())
            {
                $ss=$row["productName"];
                $dd=$row["number"];
                echo "['name' : ".$ss.", 'number' : ".$dd."],";
                // echo("$ss."."$dd");
                // echo('<div>Brand : <b>$row["productName"]</b><br>Total Revenue : <b>$row["number"]</b></div>';
            }
            ?>
        ]);
    }
</script>

var options = {
    title: 'Percentage of products and their sales quality',
    is3D:true,
    // pieHole: 0.4
};
var chart = new google.visualization.PieChart(document.getElementById('piechart'));
chart.draw(data, options);
</script>
<main class="main-content bgc-grey-100">
    <div id="mainContent">
        <div class="row gap-20 masonry pos-r">
            <div class="masonry-sizer col-md-12"></div>
            <div class="masonry-item col-md-12">
                <div class="bgc-white p-20 bd text-center">
                    <h6 class="c-grey-900">Sales Report</h6>

                    <div class="text-center" id="piechart" style="width: 100%; height: 500px;"></div>
                </div>
            </div>
        </div>
    </div>
</main>

```

Figure 46: Coding sample for report generation

Cart coding sample:

```

<div class="ps-hero bg--cover" data-background="admin/upload/back.jpg">
  <div class="ps-hero__content">
    <h1 style="color: #f7f7f7;">Shopping Cart</h1>
    <div class="ps-breadcrumb">
      <ol class="breadcrumb">
        <li><a href="index.php" style="color: #f7f7f7; font-size: 20px;">Home</a></li>
        <li class="active" style="color: #f7f7f7; font-size: 20px;">Shopping Cart</li>
      </ol>
    </div>
  </div>
</div>
<main class="ps-main">
  <div class="ps-container">
    <div class="ps-cart-listing">
      <div class="table-responsive">
        <?php
          if (isset($updateQuantity)) {
            echo($updateQuantity);
          }
          if (isset($delProduct)) {
            echo($delProduct);
          }
        <?>

        <table class="table ps-table ps-table--listing">
          <thead>
            <tr>
              <th>All Products</th>
              <th>Price</th>
              <th>Quantity</th>
              <th>Total</th>
            </tr>
          </thead>
          <tbody>
            <?php
              $getPd=$ct->getCartProduct();
              if ($getPd) {
                $i=0;
                $sum=0;
                $qty=0;
                while ($result=$getPd->fetch_assoc()) {
                  $i++;
                }
            <?>

            <tr>
              <td><a class="ps-product--table" href="details.php"><?php echo($result['name']); ?></a>
              <td>Tk. <?php echo($result['price']); ?></td>
              <td>
                <div class="form-group--number">
                  <form action="" method="post">
                    <input type="hidden" name="cartId" value="<?php echo($result['cartId']); ?>" />
                    <input class="form-control" min="1" max="10" type="number" value="<?php echo($result['quantity']); ?>" name="quantity">
                    <input class="btn btn-success" type="submit" name="submit" value="Update"/>
                  </form>
                </div>
              </td>
              <td>
                <strong>
                  Tk. <?php
                    $total=$result['price']*$result['quantity'];
                    echo($total);
                  <?>
                </strong>
              </td>
            </tr>
          </tbody>
        </table>
      </div>
    </div>
  </div>
</main>

```

```

<strong>
    Tk. <?php
    $total=$result['price']*$result['quantity'];
    echo($total);
    ?>
</strong>
</td>
<td>
    <a onclick="return confirm('Are you want to delete?');" href="?delPro=<?php echo($result['cartId']);?>"><di
</td>
</tr>
<?php
$qty=$qty+$result['quantity'];
$sum=$sum+$total;
Session::set("qty",$qty);
Session::set("sum",$sum);
?>
<?php } } ?>
</tbody>
</table>
</div>
<div class="ps-cart_actions">
    <div class="ps-cart_promotion">
        <div class="form-group">
            <a class="ps-btn ps-btn--gray" href="index.php">Continue Shopping</a>
        </div>
    </div>
</div>

```

Figure 47: Add to cart coding sample

10.2 Possible problem break down:

All development tasks are break down into small tasks which make the system development process more efficient and easy. Proposed system containing large amount of tasks so it is needed to break down all tasks into small tasks which will make development process easy otherwise it would be very difficult to develop the system. Break down process of proposed system are given below:

Database creating:

- Create database for TraditionalFood
- Create required tables
- Establishment link between the tables using foreign key
- Through PHP code establish the connection

Front end design:

- Using HTML code for establish the core structure for TraditionalFood
- Linking between different pages
- Using proper icon, color and images
- Build responsive design

CRUD for product manages:

- Design product manage page
- CRUD for product manages
- Test the section

CRUD for cart:

- Design add to cart page
- CRUD for cart
- Test the section

Order and whilst management:

- Design add order and whilst option
- CRUD for order
- CRUD for product whilst
- Testing all the process

Admin management:

- Manages customers
- Manage orders
- Add employee
- View product sales and monthly report

Staff management:

- Add form design
- Show delivery list
- Confirm delivery

Review management:

- Provide an option for customer review
- Users can provide review of any product

- Review information will save in database
- On real time, retrieve the information

10.3- Prioritization while developing:

During development requirement prioritization is very important because high priority requirements need to develop first for building an efficient system. If we do not prioritize requirements, high priority or core requirements may not be built or missing within the time limit. So, it is very important to prioritize the requirements while developing. Proposed system requirements prioritize during development is given below:

- Front end design
- Designing database
- CRUD operations
- Product management
- Order management
- Payment process
- Delivery management
- Customer management
- Staff management
- Report generation
- Searching option
- Review management
- Email management
- Whilst option

Chapter 11 – Testing

11.1 Test plan acceptance

For becoming a project successful, proper test plan is very important. Without proper testing a system would be valueless. So, for checking the system different parts it is needed to make a testing plan and require accepting that test plan. By this test plan, it will ensure that **Traditional Food House** met the actual requirements or not. Two types of testing will be happened those are functional and non-functional testing.

Functional testing:

- Unit testing
- Integration testing
- Module testing

Non-functional testing:

- Security testing
- Acceptance testing
- Usability testing

11.2 Test case

Test case containing data related to testing example as actual result, expected result etc. Here process description also includes.

11.3 Unit test

Test ID	Test case	Description	Expected result	Actual result	Action
01	Sign up	New user registration	Data will store in	Expected result	No required

		by inserting data	database		
02	Login	Login with invalid information	Will not allow to login and show an error message "email or password not matched"	Expected result	No required
03	Login	Login with valid email and password	Successful login and redirect to home	Expected result	No required

Actual Testing:

WELCOME TO REGISTRATION

Success! Registration success.Please login ×

NAME * <input style="width: 90%; border: 1px solid #ccc; padding: 5px;" type="text" value="Your Name"/>	COUNTRY: <input style="width: 90%; border: 1px solid #ccc; padding: 5px;" type="text" value="Your Country"/>
CITY: <input style="width: 90%; border: 1px solid #ccc; padding: 5px;" type="text" value="Your City"/>	PHONE: <input style="width: 90%; border: 1px solid #ccc; padding: 5px;" type="text" value="Your Phone"/>
ZIP: <input style="width: 90%; border: 1px solid #ccc; padding: 5px;" type="text" value="Your Zip-Code"/>	ADDRESS: <input style="width: 90%; border: 1px solid #ccc; padding: 5px;" type="text" value="Your Address"/>
EMAIL * <input style="width: 90%; border: 1px solid #ccc; padding: 5px;" type="text" value="Enter email"/>	PASSWORD: <input style="width: 90%; border: 1px solid #ccc; padding: 5px;" type="password" value="Password"/>

REGISTER

Figure 48: Successful Registration



Traditional Food House
WELCOME TO THE STORE

Figure 49: Successful customer login

WELCOME TO LOGIN

Warning! email or password not matched! ×

EMAIL *

PASSWORD *

[Forget password?](#)

Figure 50: Login in attempt with wrong password

11.4 Integration Testing:

Test-01

Test ID	Test case	Description	Expected result	Actual result	Action
01	Sign In	Login using below email and password Email:Alauddin@gmail.com Password: 123	User login into the homepage	Expected result	No required

Actual test:

WELCOME TO LOGIN

EMAIL *

PASSWORD *

LOGIN

[Forget password?](#)

Figure 51: User enter valid email and password



Figure 52: User logged in successfully into homepage

Test-02

Test ID	Test case	Description	Expected result	Actual result	Action
02	Add product	Insert product details by admin	Product will insert into database and show between	Expected result	No required

			user panel and admin panel		
--	--	--	----------------------------------	--	--

Actual test:

New Product

Product Name *
Mango

Category *
Fruits

City *
Rajshahi

Content
Special Rajshahi's mango

File Input
Choose Files 14c09c41-9c...jpeg.webp

Price *
100

Quantity *
10

Status
Active

Submit

Figure 53: Admin enter product details for add product



Figure 54: New product showing in the interface

11.5 Module Testing:

Test-01

Test ID	Test case	Description	Expected result	Actual result	Action
01	Registration form checking	Registration form test without data	It will show a message for entering data in the field	Expected result	No required

WELCOME TO REGISTRATION

NAME *

COUNTRY:

CITY:

PHONE:

ZIP:

ADDRESS:

EMAIL *

PASSWORD:

!

Please fill out this field.

REGISTER

Figure 55: Registration form validation checking

Test-02

Test ID	Test case	Description	Expected result	Actual result	Action
02	Registration form test	User enter below data for registration Name: Sojib Country: Bangladesh City: Dhaka Phone:01686239015 Zip: Dhaka1205 Address: Dhaka college Email:Alauddin2@gmail.com Password:123	User will complete registration successfully and redirect to home page	Shows expected result	No required

WELCOME TO REGISTRATION

NAME *	COUNTRY:
Sojib	Bangladesh
CITY:	PHONE:
Dhaka	01686239015
ZIP:	ADDRESS:
Dhaka1205	Dhaka college
EMAIL *	PASSWORD:
Alauddin2@gmail.com	...

REGISTER**Figure 56:** Fill up registration for with valid data

WELCOME TO REGISTRATION

Success! Registration success.Please login ×

NAME * <input style="width: 90%; padding: 5px;" type="text" value="Your Name"/>	COUNTRY: <input style="width: 90%; padding: 5px;" type="text" value="Your Country"/>
CITY: <input style="width: 90%; padding: 5px;" type="text" value="Your City"/>	PHONE: <input style="width: 90%; padding: 5px;" type="text" value="Your Phone"/>
ZIP: <input style="width: 90%; padding: 5px;" type="text" value="Your Zip-Code"/>	ADDRESS: <input style="width: 90%; padding: 5px;" type="text" value="Your Address"/>
EMAIL * <input style="width: 90%; padding: 5px;" type="text" value="Enter email"/>	PASSWORD: <input style="width: 90%; padding: 5px;" type="text" value="Password"/>

REGISTER

Figure 57: Registration completed successfully

11.6 Acceptance Testing:

Test-01

Test ID	Test case	Description	Expected result	Actual result	Action
01	Add to cart product	Customer can add to cart product	Product will add to cart list and when customer select another	Shows expected result	No required

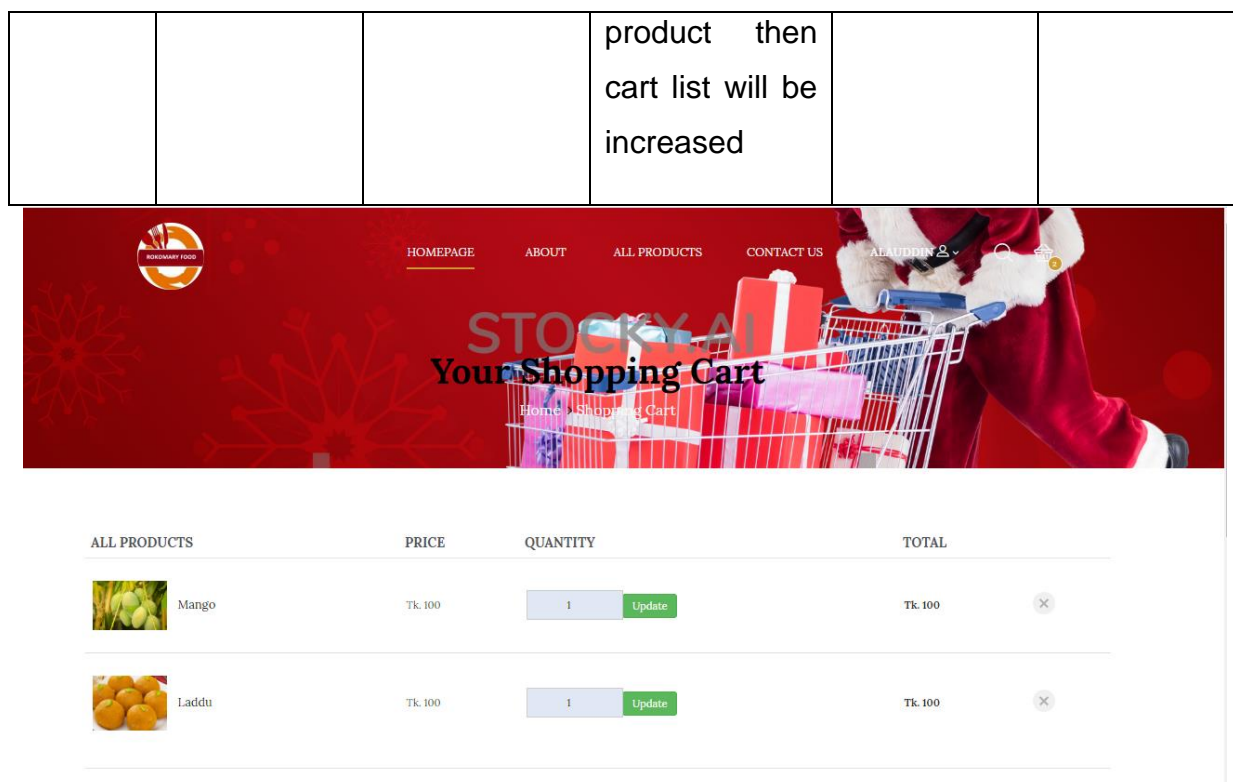


Figure 58: Adding product to cart

Test-02

Test ID	Test case	Description	Expected result	Actual result	Action
02	Add product to whilst	Customer can save product to whilst	In order page, there is an option save to list, by clicking on save to list product will save to whilst	Shows expected result	No required

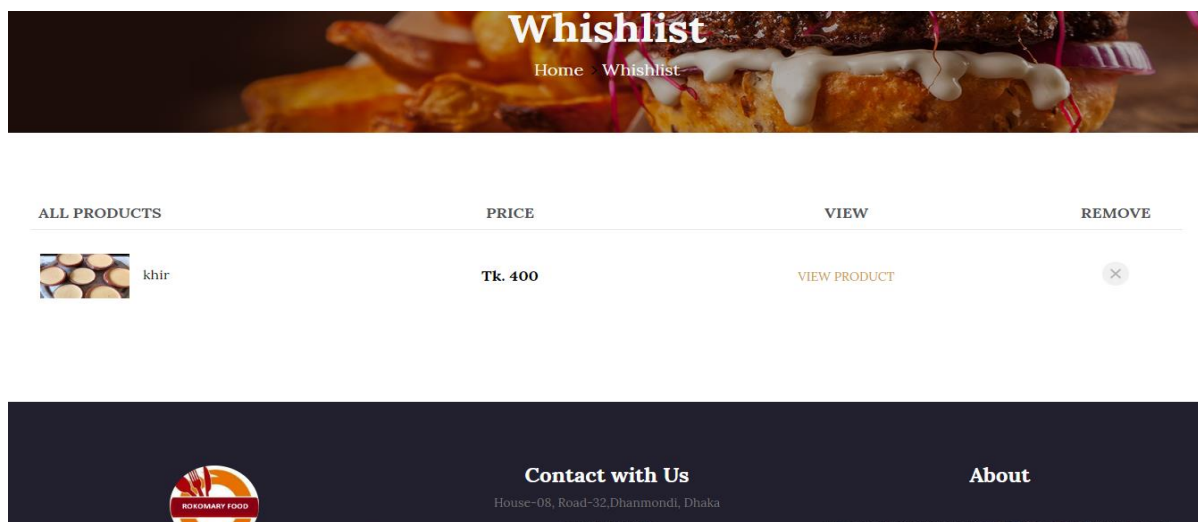


Figure 59: Adding product to whilst

11.7 Security testing:

Test-01

Test ID	Test case	Description	Expected result	Actual result	Action
01	Checking login	Login with invalid information	Unauthorized user cannot login. An error message will show the email or password not matched	Shows expected result	No required

Actual result:

WELCOME TO LOGIN

Warning! email or password not matched! ×

EMAIL *

Enter email

PASSWORD *

Enter Your Password

LOGIN

[Forget password?](#)

Figure 60: Security testing unauthorized user cannot login

Test-02

Test ID	Test case	Description	Expected result	Actual result	Action
02	Role wise access into the system	Customers, admin and staff perform tasks according to their role	One user cannot view author users private activity	Shows expected result	No required

11.8 Accessibility testing:

Test-01

Test ID	Test case	Description	Expected result	Actual result	Action
01	Test on color blind people	Giving color blind user to use the system	There will no problem found for using the system	Shows expected result	No required

Test-02

Test ID	Test case	Description	Expected result	Actual result	Action
01	Test on old age user	Giving old age user to use the system	There will no problem found for using the system	Shows expected result	No required

11.9 Usability testing:

Test-01

Test ID	Test case	Description	Expected result	Actual result	Action
01	Navigation bar	Users can easily moves different pages using navigation	There is no problem for moving one page to another page	Shows expected result	No required

Actual result:



Figure 61: Moving one page to another page using navigation

Chapter 12 – Implementation

Introduction:

This is the last stage of system development. After testing phase implementation phase comes. Implementation chapters include some important topics those are training, load balancing and implementation techniques. All those topics are going to be discussed below:

12.1 Training:

To make a system live training is much needed. Through proper training all type of users will be able to introduce with the system. By training properly users will be able to use the system easily and they can move around the system comfortably. Training sectors, training type and duration are given below as a chart:

SN	User	Training Sector	Duration	Comment
01	User as a customer	How to make a full purchase module and buying product	1 hour	Customers will easily understand the buying and searching process of product
		How to give payment details	½ hr	Users will take short time to understand the process
		How to add product on whilst list and provide feedback	½ hr	In first time, user may face difficulties but after training will understand easily

02	User as admin	Add product in the database	1 hour	Will understand the process easily
		Update the product details	½ hr	Users will understand the process
		How to control delivery orders	1 hour	Users will take a short time to understand

12.2 Implementation scheme

There are various types of implementation scheme. Some of the implementation schemes are very close to the **Traditional food house** system. Big Bang implementation scheme are describes below which are closer to proposed system.

Big Bang:

Big bang implementation method is turning of existing system and transferring users to a new system simultaneously which means old system is replaced by new system. It is much quicker method. After completing the testing it directly implements the new system. This approach is also little bit risky because in this method data need to transfer from old system to new system so there is a change to data loss or new system can crush.

12.3 Scaling

As it is an academic project, so there is no scaling plan for the system

12.4 Load balancing

Load means the number of user's hits into the system. So load balancing means controlling of the number of hits or load in the system. Number of users hit means how many users are using the system at a time and how much system can take. This is called load balancing. Load balancer is used for controlling the system load. The purpose of load balancer is to divide the load into servers because if load balancer does not divide the loads into servers then the whole system will be slow.

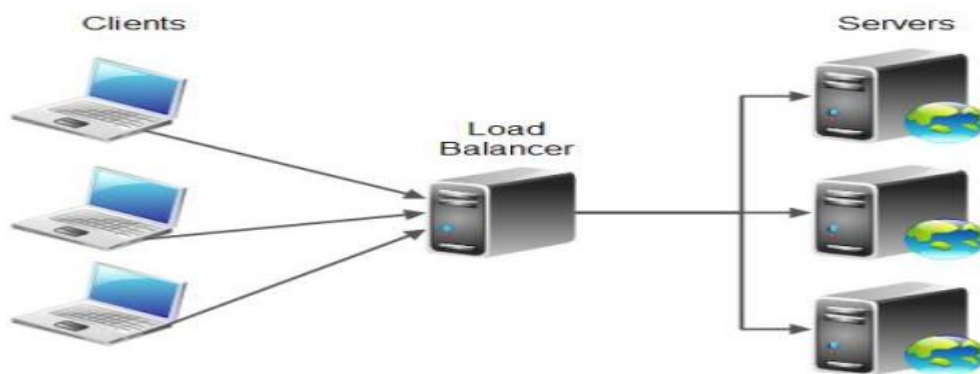


Figure-21: Architecture of load balancer

Chapter 13 – Critical Appraisal and Evaluation

13.1 Objectives that could be met

Objectives that could be met are given below:

- Choosing an appropriate methodology
- Creating role based system for different users
- Simple user interface design
- Product buying system
- Error and bugs free
- Produce a well documentation

Objective-01: Choosing an appropriate methodology

Choosing an appropriate methodology is very important for a system because during development it plays a vital role.

Success rate: I have selected hybrid methodology for the system which is combined of DSDM and waterfall model methodology. As it is academic project and requirements of the system is matching with this hybrid methodology. So, we can say that the objective is successful.

How much better could have been done: It could have been better if I can analyze more methodology and find out different methodology for different parts of the system or if we worked in a team I will get better idea about it.

Why it could not be done: This is my academic project and I have done all parts of the system and documentation, so I did not get enough time for doing this.

Objective-02: Creating role based system for different users

In proposed system, there are different types of users such as customers, admin and staff. Each user has their own task to perform. The system is designed to role based access to perform specific task

Success rate: The objective is successful because in the system customers can do their task only, admin can do his task and staff can do their task. Specific users can able to do their specific task only. So, here role base access is ensured.

How much better could have been done: This objective can implement in some ways. Simplest and easiest way is used here for implementing this objective. Third party package is also available for meet this requirements.

Why it could not be done: For gathering knowledge about the package need more study and research and for doing this there is huge amount of time needed. But I have limited time that's why advance implementation is not possible.

Objective-03: Simple User Interface design

In web application, user interface is very important because it attract the users. It is very important to keep the user interface clear and simple as users can interact with the system when they visit the site.

Success rate: For creating a good interface, course of interaction design helped me a lot. I have researched some articles and analyzed some websites which help me to create a simple, clean and user friendly interface. So the objective is successful.

How much better could have been done: Using vuejs language it would be better. It is faster and lightweight language.

Why it could not be done: For gathering knowledge about the new languages need more study and research and for doing this there is huge amount of time needed.

Objective-04: Product buying system

In commerce site, the main goal is to buying product through online successfully.

Success rate: In the system, the registered customers can easily choose product and can buy product effortlessly. Customers can add to cart product, can change quality and can pay offline payment by within the system. So, the objective is successful.

How much better could have been done: If I could use PHP library to complete the project, it would be better

Why it could not be done: Because of limited time it was not possible

Objective-05: Errors and bugs free system

In this documentation, chapter 11 contains the test plan and test case which helps me to produce errors and bugs free system.

Success rate: The system is errors free. For ensuring this I have done various types of system testing such as unit testing, integration testing, acceptance testing etc.

How much better could have been done: Involving various types of users such as system test, end users the system would be better and will increase system performance. It will also help to build more errors free system.

Why it could not be done: For doing this, need more clear concepts and knowledge about it. But I do not find enough time that's why this advanced level implementation was not possible.

Objective-06: Produce a well documentation

For clear understanding about the system and for business perspectives documentation is very important for a system. Documentation includes analysis part and coding part sample also which will help a new developer understand the system easily.

Success rate: This objective is successful because this documentation is well organized. Here all analysis part and coding sample are included properly. All the diagrams are including here such as Class diagram, ERD, Use case, Activity diagram etc. And all the testing part of the system is also included properly. So a strong documentation has been produced by proper analysis.

How much better could have been done: Due to payment some articles and books could not be accessed which was a problem for gathering more resources. Otherwise the objective is quite successful.

Why it could not be done: As this is an academic project, so there was no fund for this project. That's why I could not use some paid software for drawing good looking diagrams and could not add new something in the document.

13.2 Objectives that could not totally met/touched:

Almost all required objectives related to the project are met. There is only one objective which is not totally touched. This objective is live chat option

Reason why it could not be touched:

The main reason of could not touched this objective because of time because there was very short time for completing the project. One reason was short time and another reason was the site need to host real time hosting server that was also bit difficult. Without web hosting no one can chat with others through the system.

What could have been done: For touching the objective, first of all need to reschedule the time boxes which require additional time to complete the project. For fulfilling the objective it also learn new technology jQuery and set the priority of the feature so that this feature could be done within the time limit.

Chapter 14 – Lessons Learned

Introduction






In this chapter, I will discuss what I have learnt throughout the whole project. I am also going to describe what problems I have faced during the project and how I had overcome those problems. I will also include what new things I have learned.

14.1 Pre project –review –closing

First of all, I have to complete a proposal for developing **Traditional food house** system and the proposal contains what the system will carry out. The proposed system main purpose is to sell traditional food items through online where customer can buy traditional food items from different location. I have also completed a full documentation for proposed system.

14.2 What I have learnt

Throughout the project I have learnt many important things. Some of them are given below:

-  First of all, I have learnt how to manage a system's different parts such as design, development ,diagrams and database
-  Throughout the project, I have to plan for different parts and need to test the system which will increase my project planning knowledge and testing ability
-  I have to learn programming languages like JavaScript and jQuery which will enrich my programming skills
-  For my proposed system, I need to choose a methodology that's why I analyze different methodology and able to know about each methodology which will help me to choose methodology properly
-  Previously I do not have enough knowledge about different diagrams. But I in this project, I needed to draw different diagrams which helps me to increase knowledge about different diagrams and their activities

I have also learnt many important things which will help in my future career.

14.3 What problem I have faced

Throughout the whole development time I have faced many problems when I solved a problem then new problem would arise. This thing continuous happened before the final solutions. As I have got limited time for development the project so it was big challenging setting up time boxes and completed each task within limited time. I have faced problem when choosing the methodology because as it is academic project that's why any specific methodology was not appropriate for the project, that's why I have used hybrid methodology for developing the project. I was in confused about payment method for proposed system because in Bangladesh most people are not comfortable with online payment. Finally, I have select offline payment and because of limited time I could not develop online payment. It was also bit challenging to draw different types of diagram for the system.

14.4 What solution occurred

When I have faced a problem that time I tried to make a solution against each problem. As time was limited, so I had to maintain a strict time boxing throughout the project so that I can complete each task with time limit. Methodology choosing was one of the problems, but after analyzing all the methodology I have found that hybrid methodology will match with my proposed system, that's why I have selected hybrid methodology. At the time of coding, I have faced some problems that time I used google for finding the solutions. I also took help from my teachers when I faced problems






Chapter 15 – Conclusion

15.1 Summary of the project

Traditional food house is an online food selling system where customer can buy different types of traditional food from different places in Bangladesh. Customers can see different types of category, product description, can searching product. In this system, admin will add products, manages products, and manages their value able customers. This system will generate monthly sales report, product sells reports, and admin can view this. Admin will also able to add staff. Staff can delivery order and confirm delivery. So, this is proper online product selling system.

15.2 Goal of the project

The main goal of the project is to make a platform where customer can buy different types of traditional food from anywhere. Including admin management some of the important goal of the project is given below:

-  Making a trusted platform where customer can buy product easily
-  Provide actual product to the customers
-  Provide an opportunity to the customers to buy product from anywhere
-  Automated food selling and management system
-  Establishment an good relationship between customers and sellers

15.3 Success of the project

A project success depends on its outcome. We can call a project successful when most of the functions are working properly and users can easily complete their task without facing any problem. I think this project is quite successful because all required features are working properly and the system has no bugs or errors. This project meets the business requirements that are mentioned beginning of the project. And this project is ready to launch in the market. But it is true that, because of time limitations some functionality might not be possible to include in the system. Overall,

I can say that the project is successful because it meets the business requirements and it fulfills the user expectations.

15.4 What I have done in the documentation

From the starting of the documentation, I have tried to make document according to documentation contents. In this documentation, I have drawn different diagrams such as activity diagram, use case diagram, ERD, Deployment diagram etc. There are some planning also include in the documentation. In this documentation I have done time boxing, testing, choosing methodology etc. Overall, I have added all required things in my documentation which can make a project successful.

15.5 Value of the project

Nowadays, most of the people are dependent on technology. People are quite comfortable of using technology to do their daily activities. Traditional food house is a unique based ecommerce system where customer will find only traditional food. In recent time, Bangladeshi people are facing a problem which is people are not finding actual product but by this site people will able to find actual product. And this automated system will save customers time and effort. So this project can add value in the current market place. By this system general people and system owner both will be benefited.

Most importantly this project helps me to develop my skills and knowledge which will help me in future. I can add this project to my portfolio which will be very valuable for me.

15.6 My experience

Throughout the project, I have gained a lot of experience. During development I had faced a lot of problems and solved those problems which give a lot of new experience. During the project, I have played different roles in different time which also give me a new experience. Now I have learnt, how to manages a project, how to meet the requirement and how to complete the task within deadline. Overall, I can

say I have learnt a lot of new thing by doing this project and I have gathered huge experience which will help me in my professional life.

Appendix

Unit testing

Test ID	Test case	Description	Expected result	Actual result	Action
01	Add product details in New product form	Add product details Name:Mango123	An error message will show that please enter only alphabetic value in name field	Expected result	No required

Actual testing:

New Product

Warning! Please enter only alphabetic value in name field ×

Product Name *

Category *

City *

Content

File input
 No file chosen

Price *

Quantity *

Status

Figure 62: For invalid name error message show

Module testing:

Test ID	Test case	Description	Expected result	Actual result	Action
01	Registration form checking	Registration form test with Email:abc123	It will show a message for entering data wrong in the field	Expected result	No required

WELCOME TO REGISTRATION

NAME *

COUNTRY:

CITY:

PHONE:

ZIP:

ADDRESS:

EMAIL *

PASSWORD:


 Please include an '@' in the email address. 'abc123' is missing an '@'.

Figure 63: Showing a message for entering data wrong in the field**Integration testing:**

Test ID	Test case	Description	Expected result	Actual result	Action
01	Successfully login by customer	Login with below details Email:Alauddin@gmail.com	Customer will go to home	Expected result	No required

		Password:123	page		
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Traditional Food House
WELCOME TO THE STORE

Figure 64: Successfully login by Alauddin@gmail.com

Integration testing:

Test ID	Test case	Description	Expected result	Actual result	Action
02	Successfully login by Admin	Login with below details Email:Admin@gmail.com Password:123	Admin will go to home page	Expected result	No required

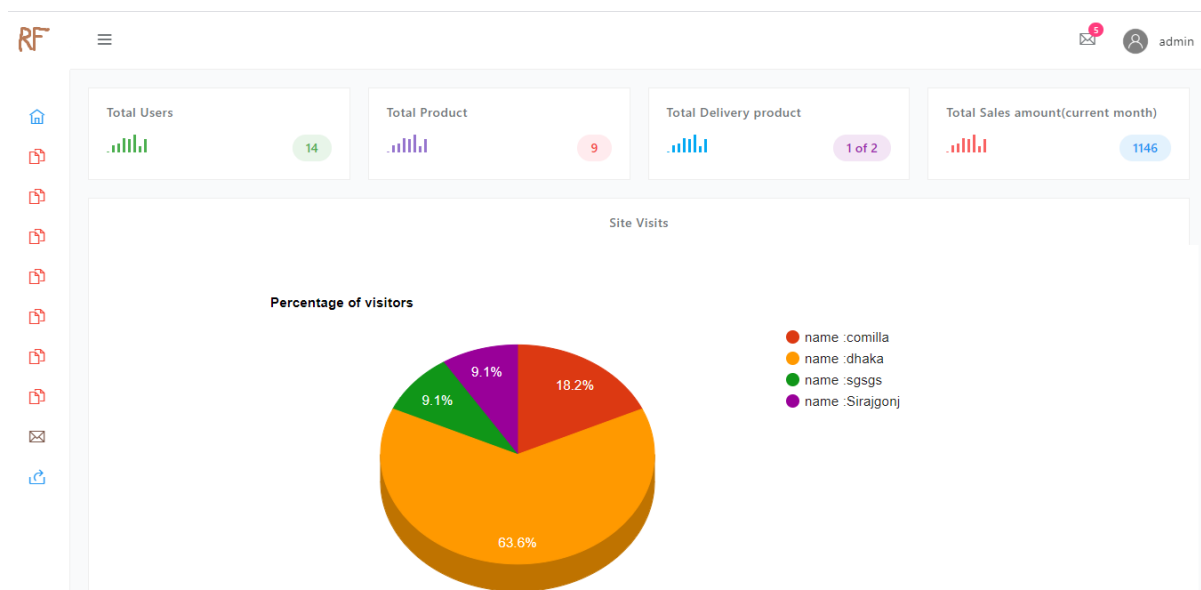


Figure 65: Successfully login by Admin@gmail.com

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