



# **An Undergraduate Internship Report on Restaurant Management System**

By

**Tania Sultan Sumona**

Student ID: **1610716**

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Supervisor:

**Md. Abu Sayed**

Lecturer

Department of Computer Science & Engineering

Independent University, Bangladesh

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Science in Computer Science

Department of Computer Science & Engineering

Independent University, Bangladesh

# Attestation

I(Tania Sultan Sumona, ID-1610716) hereby declare that this submission is my own work and to the best of my knowledge it contains no materials previously published or written by another person, or substantial proportions of material which have been accepted for the award of any other degree or diploma at IUB or any other educational institution, except where due acknowledgement is made in the report. Any contribution made to the research by others, with whom I have worked at IUB or elsewhere, is explicitly acknowledged in the report. I also declare that the intellectual content of this report is the product of my own work, except to the extent that assistance from others in the project's design and conception or in style, presentation and linguistic expression is acknowledged.

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Signature

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Date

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Tania Sultan Sumona

# Acknowledgement

I might want to offer our heartiest thanks to faculty advisor Md. Abu Sayed, Lecturer, School of Engineering and Computer Science, for his knowledge, tolerance, and for giving me the chance to gain from him. His direction and support were the most imperative resources that prompted the finish of this venture.

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Finally, we proudly acknowledge the great sacrifices, good wishes, moral support, fruitful advice, inspirations and encouragements from our family members, relatives and friends during the Internship.

# **Letter of Transmittal**

12th September, 2021

Md. Abu Sayed

Lecturer, School of Engineering Computer Science

Independent University, Bangladesh (IUB).

Bashundhara, Dhaka - 1229.

Subject: Report submission of the internship course.

Dear Sir,

I would like to take this opportunity to thank you for the guidance and support you have provided me with during the course of this report. Without your help, this report would not have been possible to complete. With deep gratitude, I also acknowledge the help provided by my on-site supervisor (Intern Coordinator) for providing me with utmost supervision during my internship in the company.

In this report I attempted my best to present all my experiences, learning and outcome out of this course of work. I exceedingly acknowledge and recognize the importance of this course and I trust this report will accomplish your endorsement. I would really appreciate if you would enlighten me with your thoughts and views regarding the report. Also, if you wish to enquire about an aspect of my report, I would gladly answer your queries.

Thank you again for your support and patience.

Yours Sincerely,

Tania Sultan Sumona

ID: 1610716

# Evaluation Committee

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# **Abstract**

This internship report focuses on my contribution towards Decimal IT as an intern and achievements from this internship program. This report is broadly categorized into nine different chapters. At first there is an introduction which is the first chapter of the report. It contains overview or background of the work, objective of the project, scope of the project. Chapter two describes background of the company, vision, mission, objective and corporate divisions of the company. Chapter three focuses on the literature review, relationship with undergraduate studies. This section elaborately describes the relationship between the courses I have done in the university and my work in the office. At chapter four I described the project management and financing. It contains work breakdown structure, activity wise time allocation, gantt chart, resource allocation and estimating costing of the project. The fifth chapter describes about the software development methodology. Chapter six describes the body of the project. It has work description, system analysis, system design and product features. Chapter seven is the results and analysis section. At chapter eight I described the project's engineering problem analysis. It contains sustainability of the work, social and environmental effects and analysis, addressing ethics and ethical issues. Chapter nine is the last chapter of the report. It describes future works of the project.

Finally, this report concludes with the achievements as an intern in terms of professionalism and highlights the values of the internship program.

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# **Chapter 1**

## **Introduction**

### **1.1 Overview/Background of the Work**

Restaurant business is quite popular now a days. One can profit very easily, but managing a restaurant is not an easy task to do. A restaurant has several sides that need to be managed sincerely, keeping track of all the data is also important. And still, most of restaurants are using manual/ paper-based method to manage their restaurant. They still use traditional menu card writing down the orders of customer on paper and only few of them provide online services.

So, to solve this problem I, proposed to develop a website to manage any restaurant online. From the website the owner or the admin will be able to manage category, food item and order. These are important for any restaurant grow rapidly.

Main aim to develop such website is to increase the efficiency of the food ordering. It can also reduce human effort, errors and provide high quality services. Customer can interact with admin through this website and place their order. And managing food item its property and category will make the whole management of restaurant easier. It also can increase profit of restaurant.

### **1.2 Objectives**

Main objective to build the system is to provide ordering service by online to the customer and to help restaurant administrator manage the restaurant business. This will maximize profit by increasing efficiency and decreasing overheads without compromising customer satisfaction. In the proposed system customer can search for a menu according to his choice. The project is also totally built at administrative end and thus only the administrator is guaranteed the access. The purpose is to build an application program

to reduce effort of managing the item, category, food, customers. Admin can see all the order details, customer information, track food delivery, create summary dashboard, and calculate actual revenue.

## 1.3 Scopes

In this project, there are two types of user. One is admin and the another one is the customer. Admin needs to log in to his verified email account to access the admin panel. Admin can edit the website details. There are three options in the admin panel for now. Categories, food item and order details. Admin can edit the categories, also can upload new categories. He can add food item under each category. Each food item has detail information about itself. Admin can edit that information. He can remove food item. Admin is able to see customer's information, order details, track food delivery, create summary dashboard, and calculate actual revenue. Admin can log out from the admin panel.

Customer can view the home page. Home page contains the search bar. He can search for his desired food to know more about it. He can view all the categories, view food items under those categories. Customer can view bestselling items. He can place his order and after placing order customer will get the confirmation of his order containing acceptance of his order, payable amount and other information.

# Chapter 2

## Literature Review

### 2.1 Relationship with Undergraduate Studies

This internship program is fully related with my courses which I had to complete in my university. Some of the courses are CSC 401: Database Management, CSC 405: System Analysis and Design, CSC 455: Web Applications and Internet.

**Database Management (CSC 401):** In database management we learned the basic of html, css, programming language like php, for handling database we learned MySQL, how to use xampp server and so on. Using this course knowledge anyone can make database. In that course we had to develop a mid-range project with database. Now, I am using these languages in my internship project.

**System Analysis and Design (CSC 405):** System analysts solve business problems through analyzing the requirements of information systems and designing such systems by applying analysis and design techniques. This course deals with the concepts, skills, methodologies, techniques, tools, and perspectives essential for systems analysts. In system analysis and design, we learned about analysis, project management, specially documenting. Components like 6 element analysis, gantt chart, UML diagram and also a lot of component we were being taught in that course.

**Web Applications and Internet (CSC 455):** In the Web Applications course, I learned more about html, css, javascript language and also get to know about bootstrap and how to use bootstrap. These components what I learned from this course helping me a lot to fulfill my responsibilities in my office where I am working. This helped me to develop a website what I was assigned from my office.

## 2.2 Related works

For understanding the problem and our work we had to go through different project, report, and research paper. There is a numerous number of paper available on online restaurant management system.

Roy Davis, Ninu Francis, Swathi K.Sukumaran, Swetha Jeevan E, and Umesh Nair have a research paper on automatic restaurant management system. In that paper first they analyzed the existing system which is manual then proposed a solution for that problem. They have highlighted the advantage and disadvantage of the newly proposed system.[1]

Prof. N. M.Yawale, Prof. N. V. Pardakhe, Prof. M. A. Deshmukh, and Prof. N. A.Deshmukh have a paper on online restaurant management system. The system is implemented to reduce the manual work and enhances the accuracy of work in a restaurant. This system manages and maintains the record of customers and their order online. So that Customer can add and delete the food items easily. The menu card of different restaurant consists of various food varieties available in the restaurant. Through the place ordering menu, the customer can simply click and order the food. Advantages of their system are:

- No misunderstandings and no frustrations.
- Online food ordering will be opened 24/7.
- Online menu is simpler and easy to operate by a user.
- Number of users or customers increases.
- It is Responsible for faster growth of your business over the internet.[2]

Dr. Vinayak Ashok Bharadi,Vivek Ranjan, Nikesh Masiwal, Nikita Verma has a submission on online restaurant management system. This report is about that how this system wakes to provide service facility to restaurant and also to the customer. The services that are provided is food ordering and reservation table management by the customer through the system online, customer information management and waiter information management, menu information management and report. Main objective to builds the system is to provide ordering and reservation service by online to the customer. With this system online, ordering and reservation management will become easier and systematic to replace traditional system where are still using paper. Furthermore, this system is applicable any time and where also customer. During the development of this, the methodology being used is waterfall model. Each process during the development process is followed by each phase in waterfall model.[3]

This report is written by Carl Abernethy. Now, this report documents the process of designing, developing and testing a software system to be used in a restaurant; usually given the name restaurant management system. The restaurant management system is there to help communication between all teams within a restaurant by minimizing the probability of human errors.[4]

# Chapter 3

## Project Management & Financing

### 3.1 Work Breakdown Structure

Work Breakdown Structure (WBS) is the tool that utilizes this technique and is one of the most important project management documents. It singlehandedly integrates scope, cost and schedule baselines ensuring that project plans are in alignment. It has a direct impact on how well a project manager can determine required resources, project budget and sequencing of project work. In this WBS, its development phases are project planning, gathering requirement, design, implementation, testing, deployment and maintenance. These are the major phases.

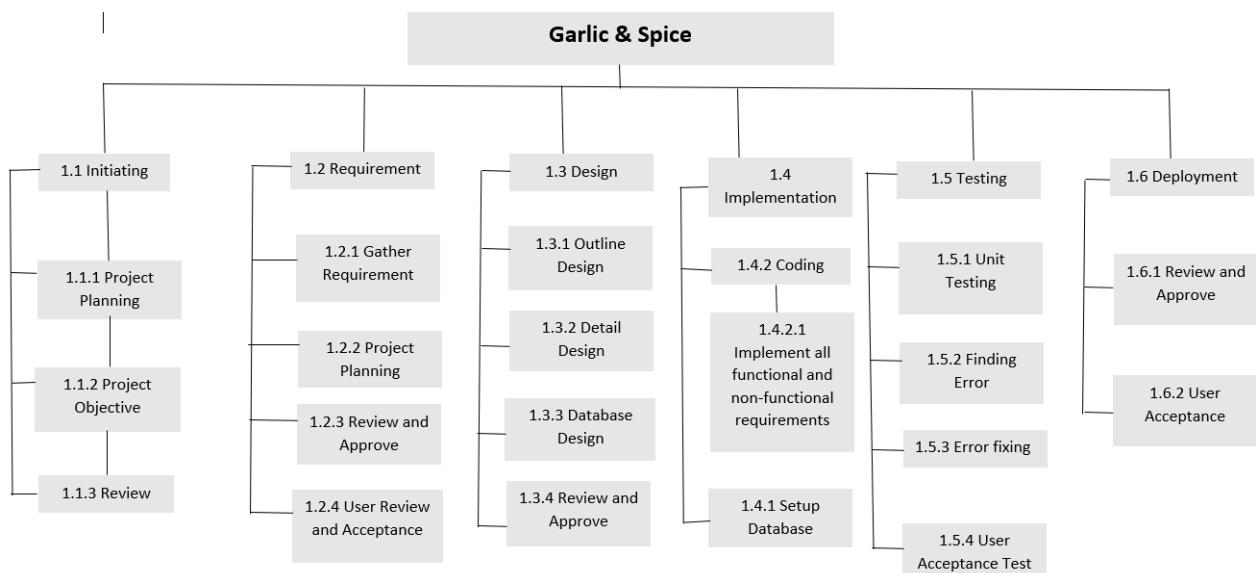


Figure 3.1: Work breakdown structure of the project

The first phase is initiating. This phase includes project planning, its objective and the project manager reviews it. Then requirement gathering is being done. This information is given by the client. Each phase has subtask. This makes the work easier. In the designing phase project outline, database design is made. Clients review and give their feedback. As it can be seen all coding, implementation of functional and non-functional activities is included as subtask in the implementation phase. Testing and deployment are also important subtask.

Developing a WBS is not easy. It is a painstaking process. And it takes quite a bit of time. But when a big project is broken down into phases and phases broken down into small subtask, then the project suddenly becomes much more manageable.

## 3.2 Process/Activity wise Time Distribution

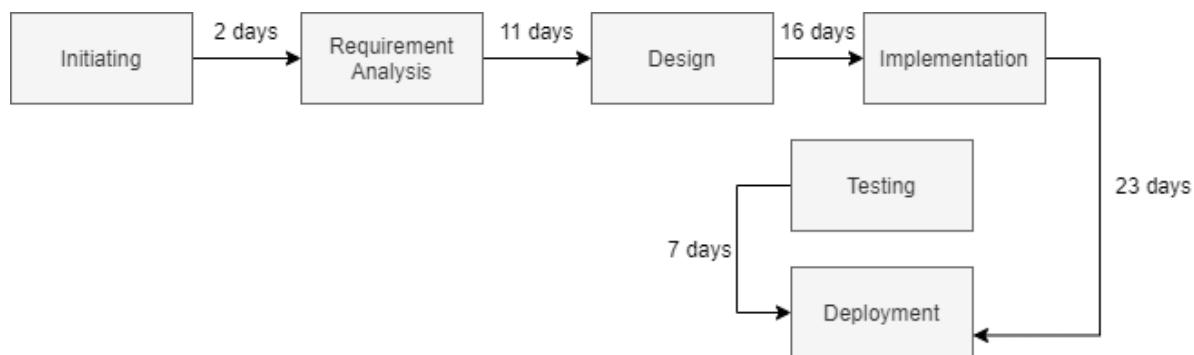


Figure 3.2: Time Distribution

**Initiating:** Understanding project is part of project management, which relates to the use of schedules such as Gantt charts, wbs to plan and subsequently report progress within the project environment. For this project it took 2 days to plan how the project should be build, its objective and determine the costing.

**Requirements Analysis:** The purpose of the system requirements analysis is to structure the system independent of any implementation environment. This phase can determine system behavior and limitations. The system requirements analysis activity represents the second major development phase of the overall process. It took almost 11 days to gather all the information for my project.

**Design:** It will take around 16 days to complete the designing part.

**Implementation:** It will take 23 days to implement the project. It contains the coding, implementation of functional and non-functional requirement, setting up database.

**Testing:** Unit testing is best for my project. I will test every unit separately, will try to find the errors to fix it. Testing part will take 7 days to complete and go to next phase.

### 3.3 Gantt Chart

A Gantt chart is a project management tool assisting in the planning and scheduling of projects of all sizes, although they are particularly useful for simplifying complex projects. For my project I had to build a Gantt chart. It shows my project planning and how much time each part took to complete the whole project. The development of the project has begun at 5th of July. And then we have to complete our requirement analysis, designing part, implement the project altogether, and test to find whether it contains any bug or not. Deployment and user acceptance marketing, these two tasks will be determined later. These are beyond our schedule.

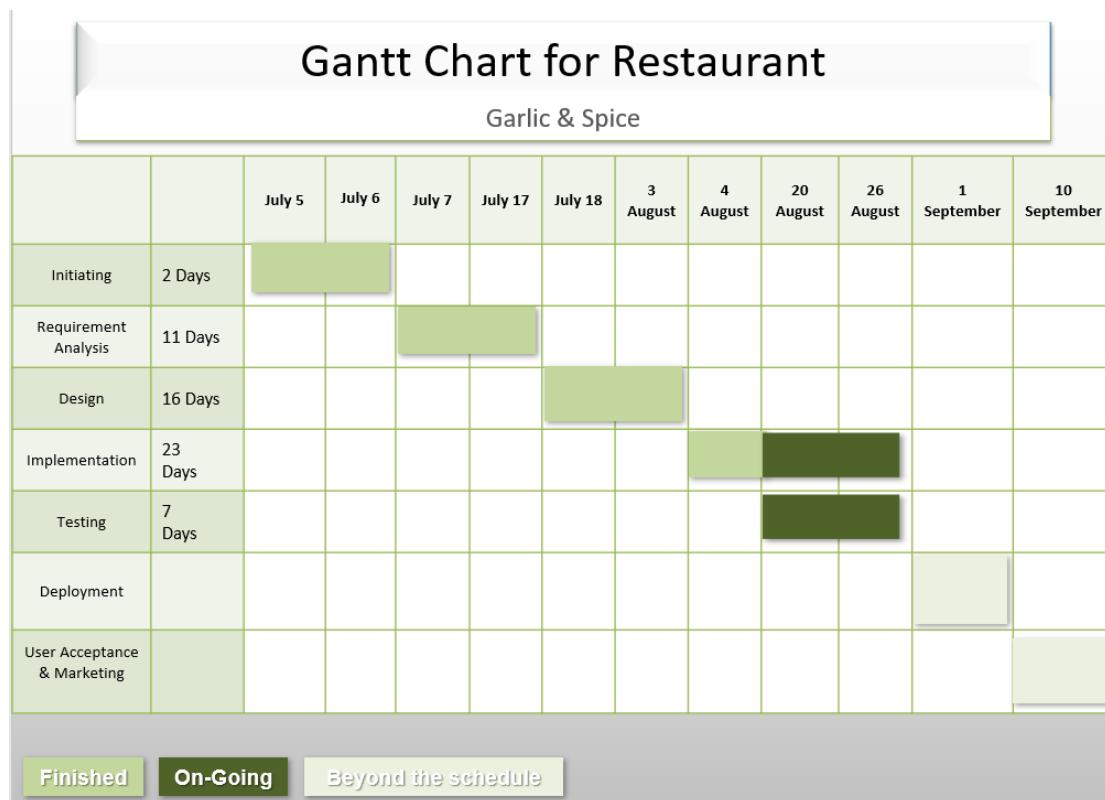


Figure 3.3: Gantt Chart

### **3.4 Process/Activity wise Resource Allocation**

There are many sub tasks in my assigned project. The availability of the resources for the project makes the project easier to build. For the initiating part, I discussed the idea with the project manager and did some paperwork to understand it's objective better. Requirement analysis was done based on the client's demand. In this phase everything about the project was documented. From Gantt chart to used case diagram, everything was decided. Project costing was also fixed in this phase. After that project manager reviewed it and sent it to client for their approval. For the development, many tools need to design the project. Graphics designer were hired for the logo designing. Html, CSS, bootstrap was used for the frontend part and for the database I have used MySQL. It took around 16 days to complete the designing part. Then coding, implementation of functional and non-functional requirement, setting up database would be done in implementation phase. Architect would be hired to determine which architecture would be appropriate for the project. Expert tester would be hired to test the project. Unit test would be performed and bugs would be fixed. Then, server and domain would be bought to test it on live server. And client would review and give feedbacks.

### **3.5 Estimated Costing**

The purpose of this cost estimation is to predict the quantity, cost, and price of the resources required to complete my project within the project scope. I have to use those resources carefully because it increases the estimated cost of the project. The estimated cost of our project is 18,000 Tk approximately. There will be some additional cost for the hosting and domain.

<b>Resources</b>	<b>Estimated cost per hour</b>
Project Manager	500
Architect	400
Programmer	300
Developer	250
Tester	300

Table 3.1: Estimated costing of the project

# Chapter 4

## Methodology

We chose waterfall model for our project. Actually, implementing a waterfall model within a new software project is a rather straightforward process, thanks in large part due to the step-by-step nature of the method itself. There are minor differences in the numbers and descriptions of the steps involved in a waterfall method. Regardless, the concepts are all the same and encompass the broad scope of what it takes to start with an idea and develop a full-scale, live application. The sequential phases in Waterfall model for my project are-

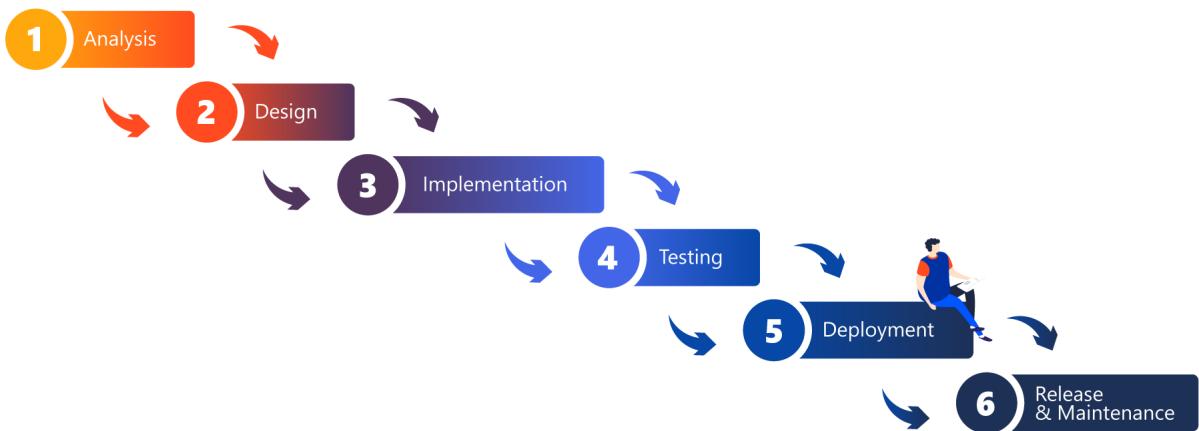


Figure 4.1: Waterfall Model

- **Requirement Gathering and Analysis:** First, we captured all possible requirements of the system to be developed in this phase by conducting interview and attending meetings and documented in a requirement specification document. The entire plan was decided when determining the requirements during this phase, how the development team made sure they divide all the work according to daily basis.

- **System Design:** The requirement specifications from first phase are studied in this phase and the system design is prepared. This design helps us in specifying hardware and helps in defining the overall project architecture.
- **Implementation:** With inputs from the system design, the system is first developed in small programs called units, which are integrated in the next phase. Each unit is developed using html, css, javascript, php, xampp as server, mySQL for database and visual studio code as code editor.
- **Integration and Testing:** Unit testing is being performed for each unit. After performing unit testing all the units are integrated in this phase. And bugs and errors will be fixed and if our system needs any changes, then we will make the changes according to its requirements as well.
- **Deployment of System:** Once the functional and non-functional testing is done; we will show it to our clients to have their approval and to make sure from them about fulfilling their requirements.
- **Maintenance:** But there still might be some issues which might come up in the client environment. If not then, we will release it to market for user's feedbacks. To enhance the product's performance some better versions might be released in future. And the system will be in maintenance to make sure its better performance.

# **Chapter 5**

## **Body of the Project**

### **5.1 Work Description**

Online restaurant management system is a web application. This is the process of ordering food from a restaurant through a web page. It is the system for managing the restaurant business. This system is developed to automate day to day activity of a restaurant. Restaurant is a kind of business that serves people all over world with ready-made food. This system is developed to provide service facility to the restaurant and also to the customer. This system can be used to handle the clients, and their orders.

The services that are provided is ordering food by the customer through the system online, customer information management, menu information management and so on. The restaurant menu is organized by categories (like burger, pasta, pizza, set menu and so on) of menu items.

Main objective to build the system is to provide ordering service by online to the customer. Each menu item has a name, price and associated recipe. With this system, ordering management will become easier and systematic to replace traditional system where are still using paper.

To order a meal online, the customers do not need to register themselves. They can easily access the site and order their desired food without login or register. This project is to facilitate customer for making online order.

The project is also totally built at administrative end and thus only the administrator is guaranteed the access.

## 5.2 System Analysis

### 5.2.1 Six Element Analysis

Process	Human	Non-Computing Hardware	Computing Hardware	Software	Database	Connection & Network
View the Website	Customer can see the website	None	Pc, Smart Device	www.G&S. com	phpMy Admin	Internet
View Category	Customer can see the category	None	Pc, Smart Device	www.G&S. com	phpMy Admin	Internet
Search for food	Customer can search for their desired food	None	Pc, Smart Device	www.G&S. com	phpMy Admin	Internet
Place order	Customer can place their order	None	Pc, Smart Device	www.G&S. com	phpMy Admin	Internet
Sign in/ Sign out	Admin need to sign in and sign out	None	Pc, Smart Device	www.G&S. com	phpMy Admin	Internet
Edit and add category	Admin can add new category and can edit the previous one	None	Pc, Smart Device	www.G&S. com	phpMy Admin	Internet

Process	Human	Non-Computing Hardware	Computing Hardware	Software	Database	Connection & Network
Upload/ Update new food	Admin can upload and update new food	None	Pc, Smart Device	www.G&S. com	phpMy Admin	Internet
Edit and see order and maintain customer	Admin can maintain customer, see their order	None	Pc, Smart Device	www.G&S. com	phpMy Admin	Internet
Track food delivery	Admin can track customers order for safety purpose only	None	Pc, Smart Device	www.G&S. com	phpMy Admin	Internet
Create summary dashboard	Admin can create summary dashboard to see the overall system of the restaurant	None	Pc, Smart Device	www.G&S. com	phpMy Admin	Internet
Calculate actual revenue	Admin can calculate the actual revenue of the system	None	Pc, Smart Device	www.G&S. com	phpMy Admin	Internet

Table 5.1: Six element analysis of the project

In this project, there are two types of entity. One is the customer and the other one is admin. As we can see from the six-element analysis of the project the first step is that, customer views the website. He can view categories and search for food. Customers can place their order. For these processes, customers need to access the web link and needs to connect to internet to access the website. Customer can access the website from any device. To enter into the admin panel admin needs to log in to his verified account. After that he can edit website's detail, add, remove, update new categories, upload and update new food items under each category. Admin can see all the order's details, track food delivery, create summary dashboard and calculate actual revenue of the system. No

non-computing hardware is needed in this system.

### 5.2.2 Feasibility Analysis

Feasibility analysis refers to the process that describes, identifies and evaluates the proposed system and selects the best system for proper functioning. For evaluating the feasibility, a feasibility analysis is conducted that helps in determining whether the system is possible to develop or not. There are three types of feasibility study, they are – technical feasibility, economic feasibility and operational feasibility. The main purpose to conduct the feasibility study is to establish the reasons to develop the software that is accepted by all the users and can be modified easily as per the requirements. Some of the objectives of the feasibility study are discussed below:

#### **Economic Feasibility:**

This feasibility study determines whether the required software is capable of generating financial gains for our organization or not. It involves the cost incurred on the software development team, estimated cost of hardware and software, cost of performing feasibility study, and so on. After conducting this study, it is seen that to make it a profitable business for our company, we need to reduce the overall cost of the project.

#### **Operational Feasibility:**

This feasibility is dependent on software development team and involves visualizing whether the software will operate after it is developed and be operative once it is published. Users of the project can be anyone. So, while testing all the functionality will be checked to assure the quality of the product.

#### **Technical Feasibility:**

In Technical Feasibility current resources both hardware, software along with required technology are analyzed and assessed to develop the project. For my project the scalability depends on the number of users of the application, since it is a module-based application any addition of the module can easily be added or removed if required. A downside of the program is that it might have a lot of users so, it could slow down the work speed of the functionality of the website.

### 5.2.3 Problem Solution Analysis

Problem solving is the act of identifying the problem, finding out the cause of the problem, propose a solution for the problem and implementing the solution. I will discuss about a number of problems that i faced while developing the project also with the solution. Some of the problems are-

#### **Expectation vs Outcome:**

Even after the constant consultation with the client, the client had some issues regarding the design. He wanted to add one features to the website. He wanted to let his customer know about their best-selling product. So, to satisfy the client we added that feature to our website.

#### **Integration of Code:**

I faced some challenges while integrating the frontend and backend part of the code. Some of the function stopped working after integration. After that, I tested every function differently to find out the actual function which was creating the mess.

#### **Security Issue:**

The client was very much worry about the security of the data. So, we assured him about the security that his data will be safe. And we added a login page for the admin so that, only he can access the admin panel.

Apart from this, we also faced many problems while developing the system. Such as, this website has more interfaces than we thought it would be. So, managing those interfaces were tough. Also, as we know, the more interfaces you have, the higher your costs. And it is a low budget project. So, maintaining this thing was tough. But we handled it nicely. Among the many issues and challenges, menu designing was one of the greatest. How many items should your menu have? Too many might lead to choose paralysis, while too few won't be enough variety. How are you going to price them? The questions were endless. Then we created categories and under those categories we inserted our food items. That was a difficult problem, but at the end we solved it.

### 5.2.4 Effect and Constraints Analysis

While gathering information, analyzing and representing them, I have faced some limitations. However, despite the limitations, I have tried hard to prepare the documentation of the project. The overall limitations I faced are mentioned below-

- There were some restrictions in disclosing some information as it was assumed to be confidential.
- Some of the information that I got from secondary sources were not arranged consistently.
- As I was not permanent employee at Decimal IT, I could not see the disadvantages of the old system.
- For this project the given time was 2months approximately. So, finishing it on time would be very difficult.

## 5.3 System Design

### 5.3.1 Rich Picture

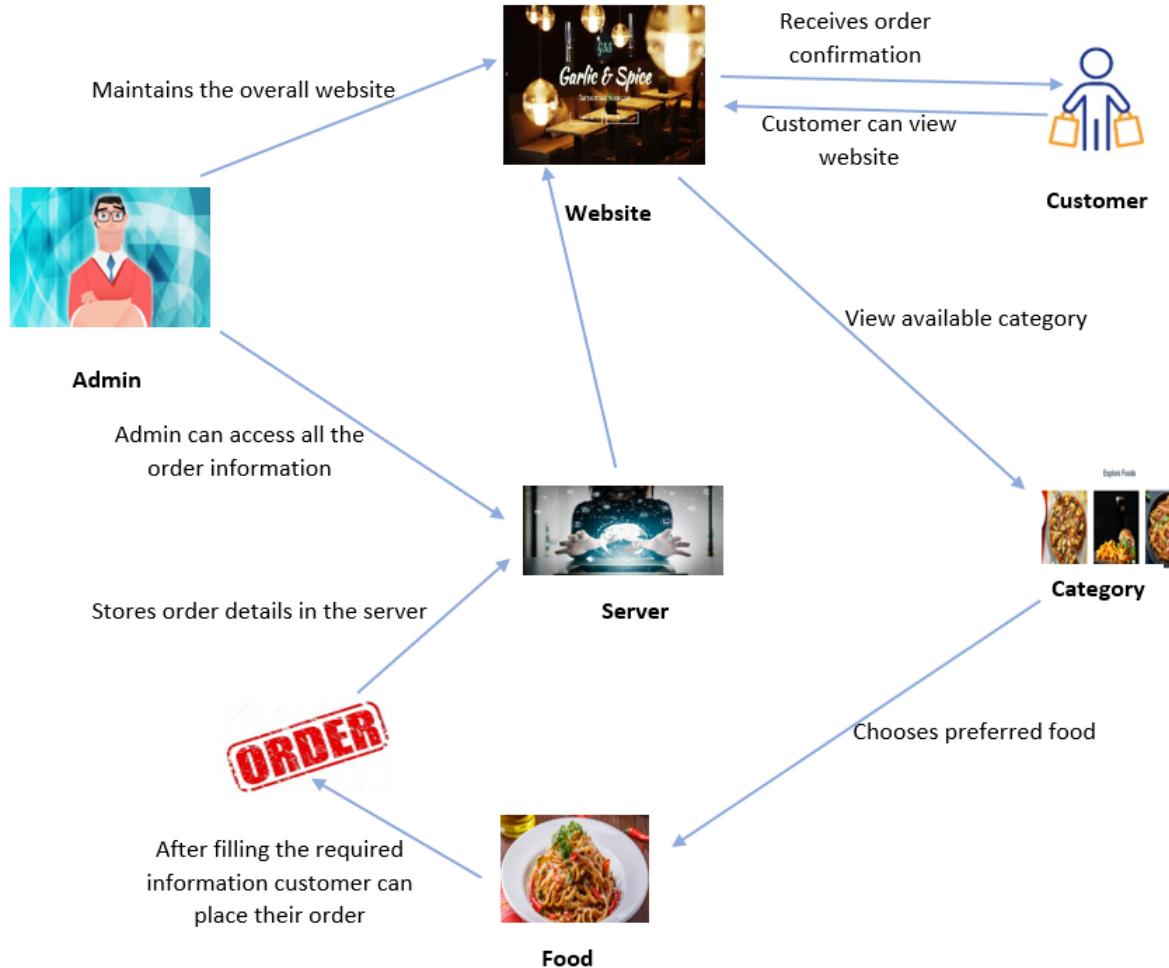


Figure 5.1: Rich Picture of the Proposed System

This is the rich picture of the proposed system. Here customer can view the website, best-selling item, view category, select food and place their order. After the order process customer will be notified about the confirmation of their order. And their order details will be saved in the database. And admin can view their order details. Here admin can update and upload new product, maintain the overall website. Apart from this, the admin can see all the order's details, track food delivery, create summary dashboard and calculate actual revenue of the system.

### 5.3.2 UML Diagrams

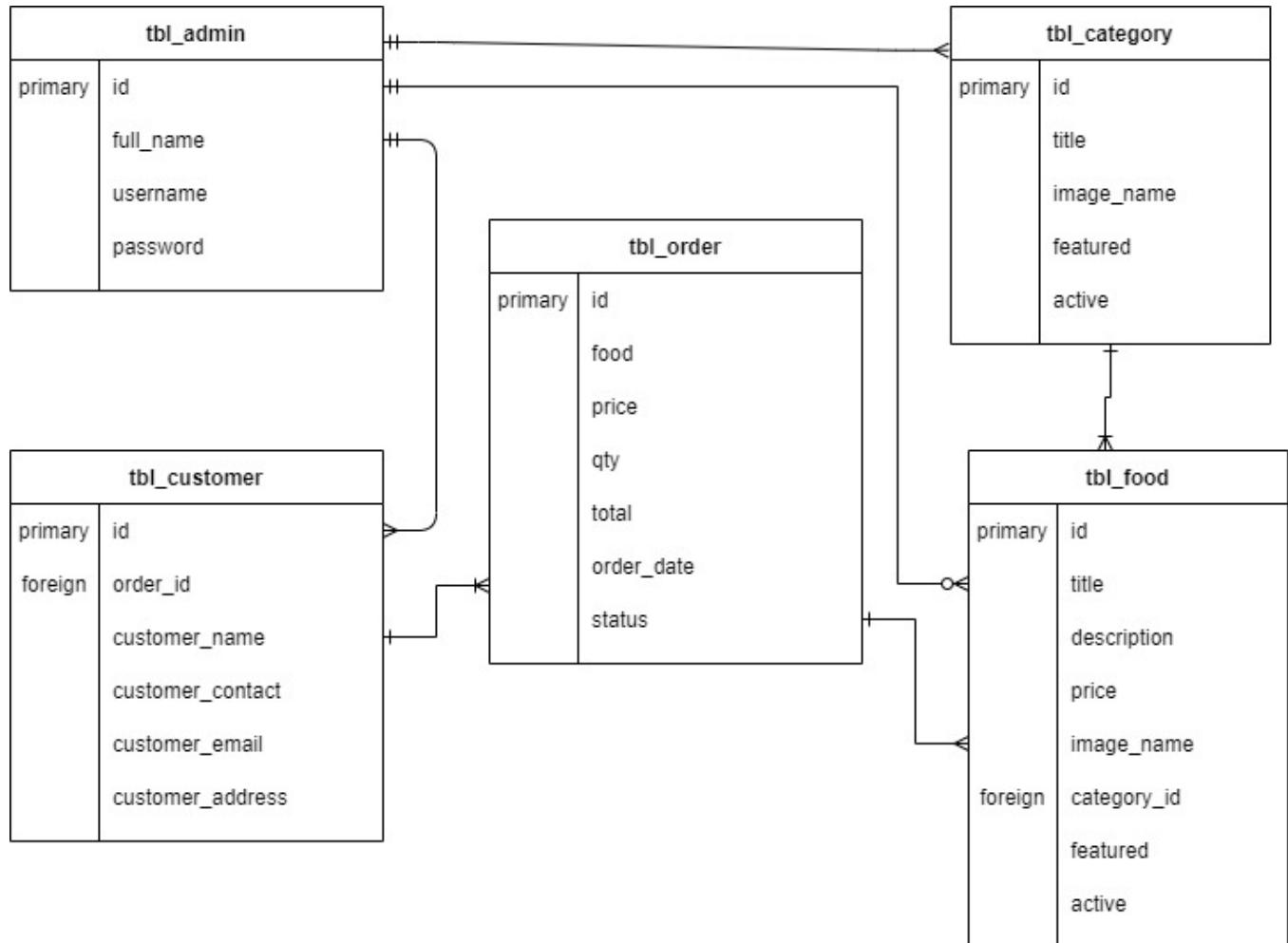


Figure 5.2: Entity Relationship Diagram for System

Entity Relationship Diagram (ER Model) is a graphical approach to database design. Here, we have five different entities. We need five tables of database for our project. Tbl\_admin is for admin. It keeps all the information about admin. Tbl\_customer stores information about customer and tbl\_category is for category and there are food items under each category and to store food item details tbl\_food is made. To store customer's order details, we have tbl\_order also. Tbl\_admin will access tbl\_customer, tbl\_category and tbl\_food. Each category can have one or many food items under them. Customer can access the order details that is stored in tbl\_order. Each order can have one or many food items.

### Use Case Diagram

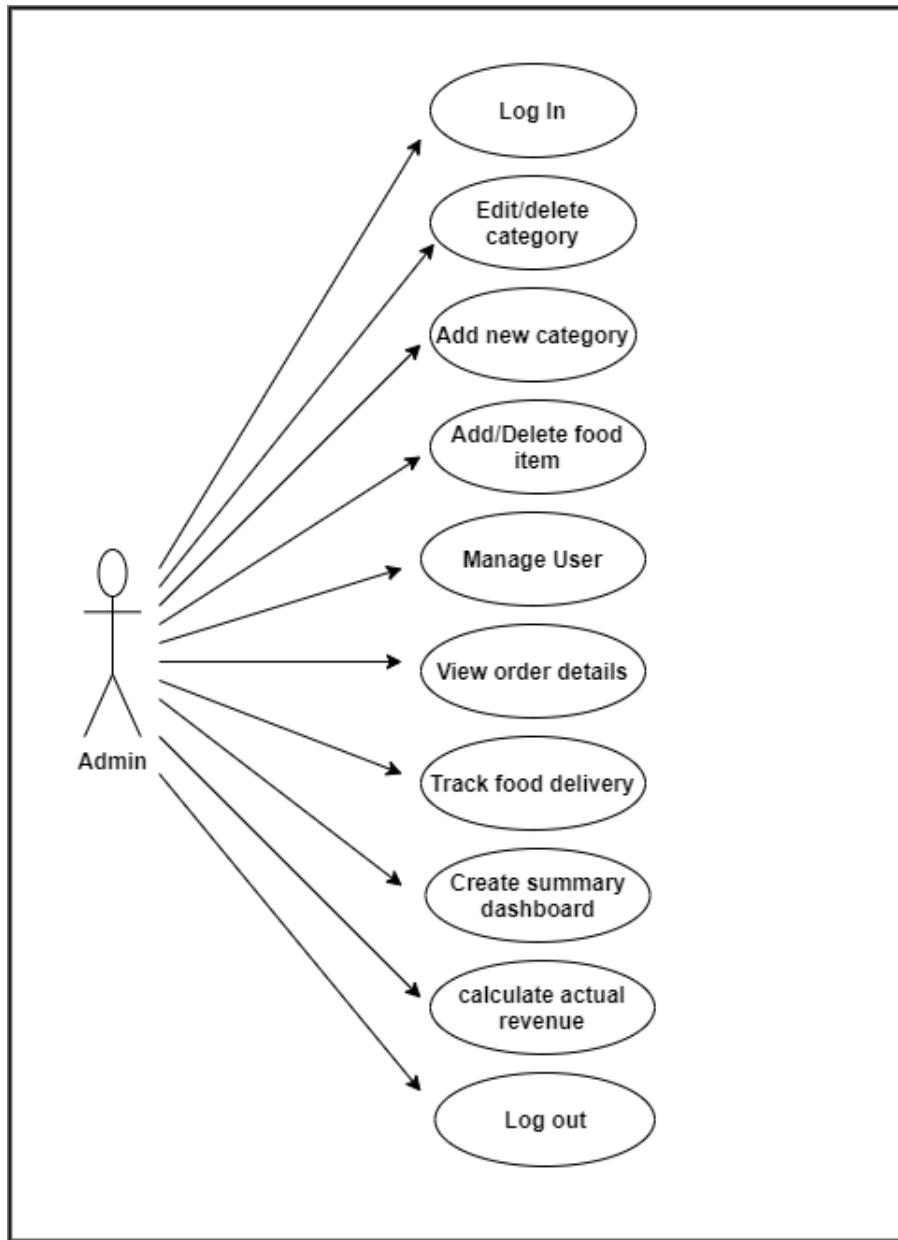


Figure 5.3: Use Case Diagram of Admin

Use case diagrams consist of actors, use cases and their relationships. The diagram is used to model the system/subsystem of an application. A single use case diagram captures a particular functionality of a system. Here there are two actors- customer and admin. Admin can log in to their account to access the admin panel. In the admin panel there are some features included to maintain the website better. Admin can edit and add new category, add/ new food, manage order, see order's details, track food delivery, create summary dashboard and calculate actual revenue of the system and can log out from their accounts.

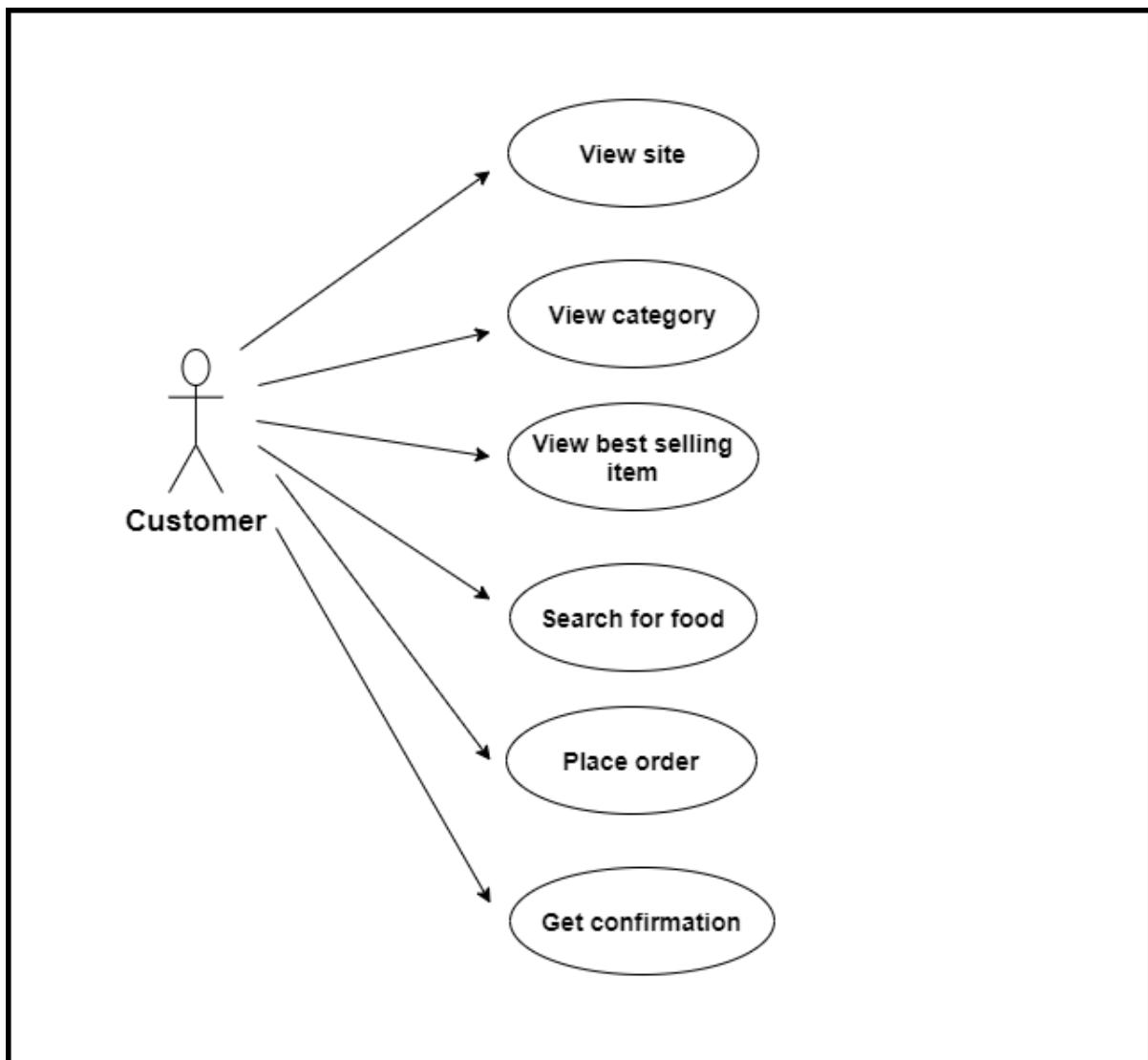


Figure 5.4: Use Case Diagram of Customer

On the other hand, another actor is customer. Customer can view the website, view the category, see the food menu, search for food and can place their order. Customer will get confirmation after placing their order with the information of payable amount and other information related to the orders.

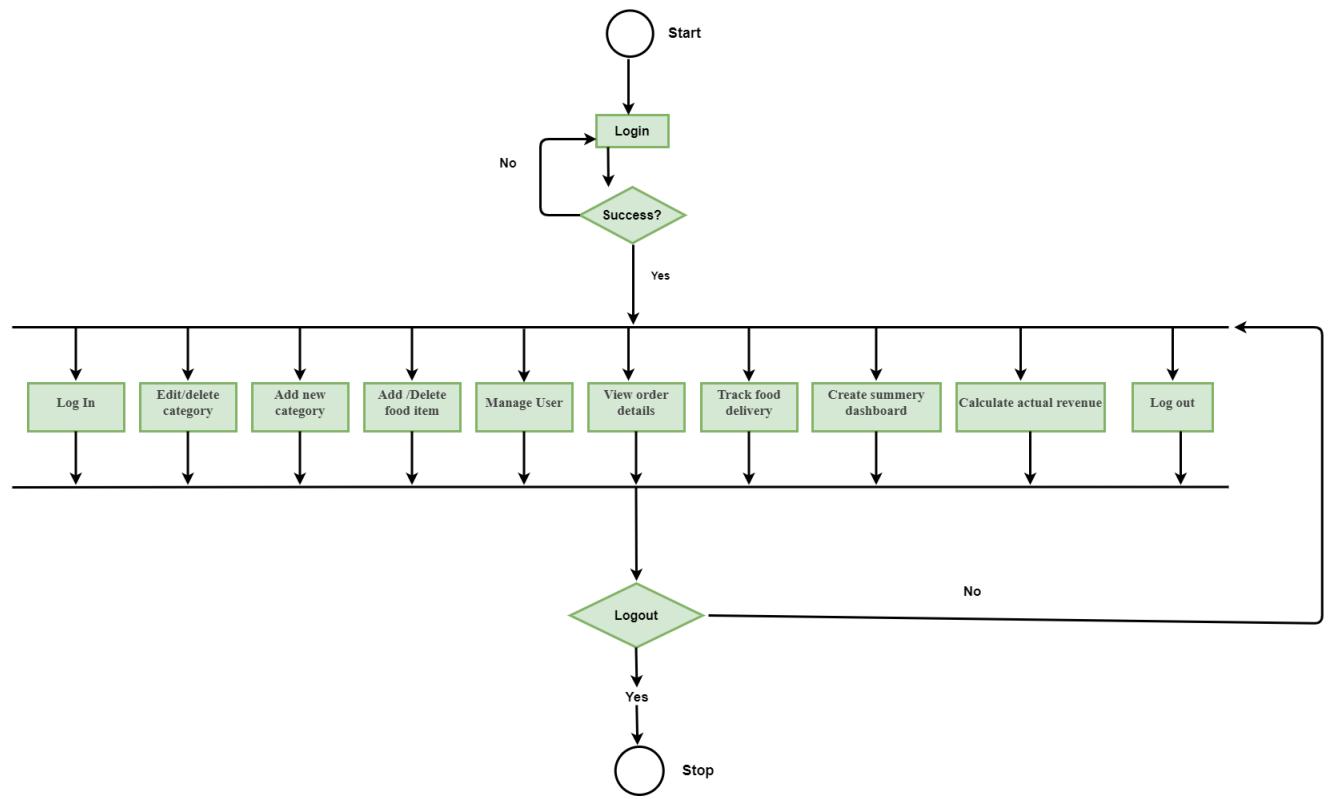
**Activity Diagram:**

Figure 5.5: Activity diagram of Admin

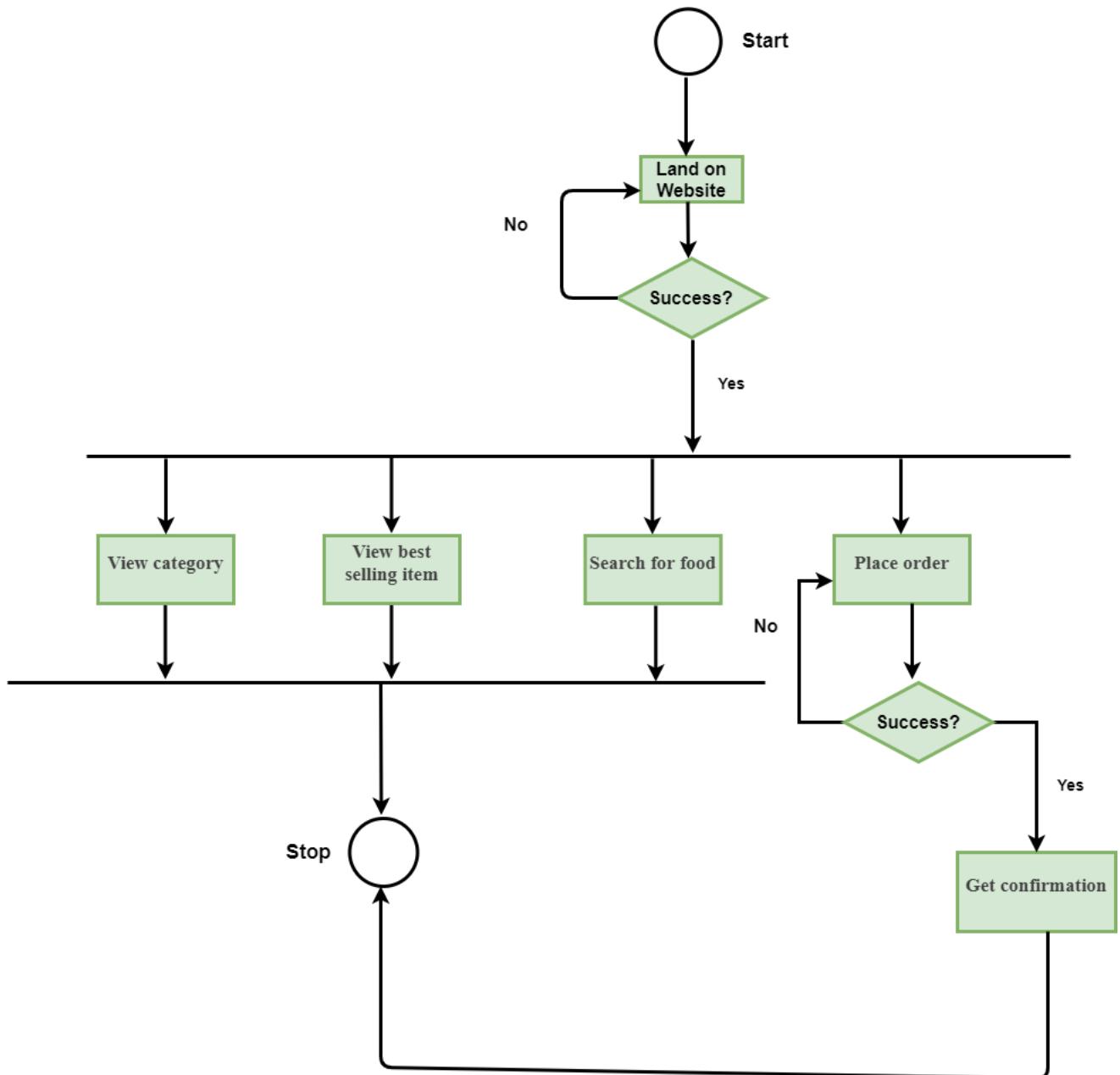


Figure 5.6: Activity diagram of Customer

### 5.3.3 Functional and Non-Functional Requirements

#### System Development Software Tools

- MySQL database to store and secure information.
- JavaScript, CSS, HTML to develop the system.
- Visual Studio Code software used as code editor.
- Apache XAMPP Server 8.0 for testing the application during development.

#### System Hardware Development Tools

- Microprocessor: Intel(R) Core (TM)i7-8565U CPU @ 2.3 GHz
- RAM: 8 GB of RAM
- Hard Disk: 1 terabytes (TB) and 240 GB SSD on installation drive

#### Operating Systems

Windows 10 Pro 64 bits Operating System for developing this system.

#### About System

The interface design focuses on the layout of the entire web portal that is actually visible to the users after deploying it into a real time environment. The interface design only shows the physical framework of each web page in the portal.

#### Functional Requirements

##### Admin

- Log in
- Edit website details
- Edit category
- Add new category
- Add food items
- Remove food items
- View order details
- Track food delivery
- Create summary dashboard
- Calculate actual revenue
- Log out

**User**

- View website
- View category
- View bestselling items
- See menu
- Search food items
- Place order
- Order confirmation message

**Non-Functional Requirements**

- Security:

Only authorized users can access the system with username and password.

- Performance:

Easy tracking of records and updating can be done.

- User Friendly:

The System is very interactive.

- Maintainability:

Backups for databases are available.

- Service:

The system will run 7 days a week, 24 hours a day.

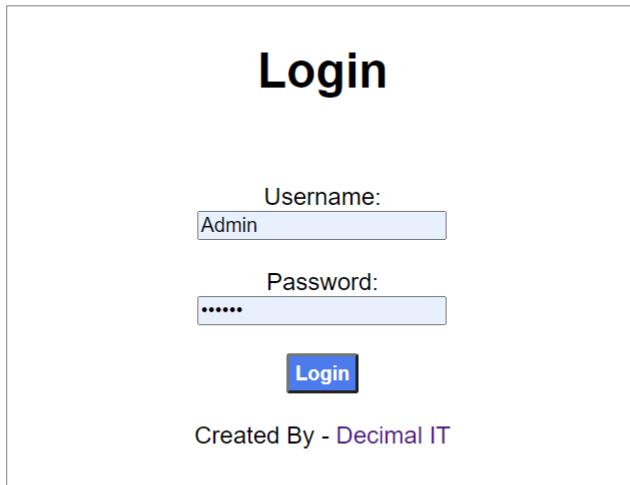
**Performance Requirements**

The performance of the software will be as smooth as possible with special consideration on the following parameters-

- Quality
- Easy to Operate or Navigate
- Planned approach towards working
- Accuracy
- Reliability
- No Redundancy
- Immediate retrieval of information
- Immediate storage of information

## 5.4 Product Features

### 5.4.1 Input



The image shows a login page titled "Login". It features two input fields: "Username:" with the value "Admin" and "Password:" with the value "\*\*\*\*\*". Below the password field is a blue "Login" button. At the bottom of the page, it says "Created By - Decimal IT".

Figure 5.7: Login page of Admin Dashboard

Admin can log in by providing his email and password. He can access the admin panel.



Figure 5.8: Search Bar

Customer can search by key words for their favorite foods.

The screenshot shows a web-based ordering interface. At the top, there's a navigation bar with links for Home, Categories, Bestsellers, Contact, and About. A logo icon is also present. Below the navigation, a large teal-colored header box contains the text "Fill this form to confirm your Order." In this box, there's a section titled "Selected Food" which includes a thumbnail image of a "Chicken Burger", its price "330 Tk", and a "Quantity" input field set to "1". The main body of the form is titled "Delivery Details" and contains fields for "Full Name" (with placeholder "Name"), "Phone Number" (with placeholder "+8801\*\*\*"), "Email" (with placeholder "1234@gmail.com"), and "Address" (with placeholder "Street, City, Country"). At the bottom right of the form area is a "Confirm Order" button. Below the form, there are social media sharing icons for Facebook, Instagram, and Twitter. At the very bottom of the page, a small note reads "All rights reserved. Designed By Decimal IT".

Figure 5.9: Ordering page

This is the ordering page of the website. Customer can order their desired food by providing this information. This will be saved in the database.

### 5.4.2 Output

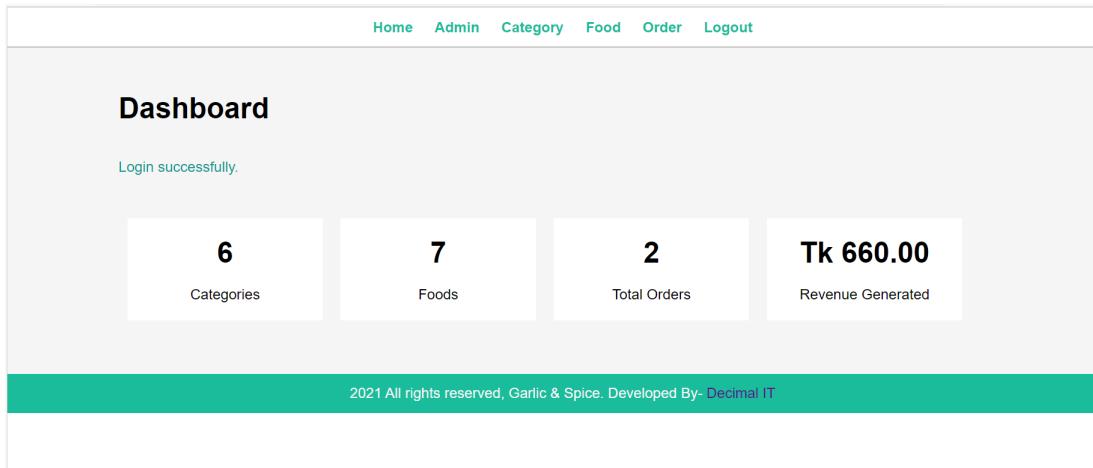


Figure 5.10: Admin Dashboard

This is the admin dashboard. Admin has some tasks to complete. His main tasks are food item management, category management and order management and also can see total revenue.

The screenshot shows a web application interface titled "Manage Admin". At the top, there is a navigation bar with links: Home, Admin, Category, Food, Order, and Logout. Below the navigation bar, the title "Manage Admin" is displayed. A green button labeled "Add Admin" is visible. The main content area contains a table with two rows of data. The columns are labeled "S.N.", "Full Name", "Username", and "Actions". The first row has S.N. 1, Full Name Admin, Username Admin, and Actions buttons for Change Password (green), Update Admin (blue), and Delete Admin (red). The second row has S.N. 2, Full Name Admin2, Username Admin2, and Actions buttons for Change Password (green), Update Admin (blue), and Delete Admin (red). At the bottom of the page, a green footer bar displays the text "2021 All rights reserved, Garlic & Spice. Developed By- Decimal IT".

Figure 5.11: Manage Admin Page

Admin will be able to add new admin, delete and also update admin. He can also change password of himself.

[Home](#) [Admin](#) [Category](#) [Food](#) [Order](#) [Logout](#)

## Manage Category

[Add Category](#)

S.N.	Title	Image	Featured	Active	Actions
1	Pizza		Yes	Yes	<a href="#">Update Category</a> <a href="#">Delete Category</a>
2	Pasta		Yes	Yes	<a href="#">Update Category</a> <a href="#">Delete Category</a>
3	Momo		Yes	Yes	<a href="#">Update Category</a> <a href="#">Delete Category</a>
4	Fries		Yes	Yes	<a href="#">Update Category</a> <a href="#">Delete Category</a>
5	Ramen		Yes	No	<a href="#">Update Category</a> <a href="#">Delete Category</a>
6	Burger		No	Yes	<a href="#">Update Category</a> <a href="#">Delete Category</a>

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Figure 5.12: Manage Category Page

Admin will be able to add new category, delete and also update category details.

Home Admin Category Food Order Logout

## Manage Food

[Add Food](#)

S.N.	Title	Price	Image	Featured	Active	Actions
1	Chicken Burger	330.00		Yes	Yes	<a href="#">Update Food</a> <a href="#">Delete Food</a>
2	Smoky Beef Burger	390.00		Yes	Yes	<a href="#">Update Food</a> <a href="#">Delete Food</a>
3	Beef Pizza	990.00		Yes	Yes	<a href="#">Update Food</a> <a href="#">Delete Food</a>
4	Spaghetti	410.00		Yes	Yes	<a href="#">Update Food</a> <a href="#">Delete Food</a>
5	Red Sauce Pasta	230.00		Yes	Yes	<a href="#">Update Food</a> <a href="#">Delete Food</a>
6	BBQ Pizza	730.00		No	Yes	<a href="#">Update Food</a> <a href="#">Delete Food</a>
7	Pasta with Seafood	500.00		Yes	Yes	<a href="#">Update Food</a> <a href="#">Delete Food</a>

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Figure 5.13: Manage Food Item Page

Admin will be able to add new food item, delete and also update food item details.

<a href="#">Home</a> <a href="#">Admin</a> <a href="#">Category</a> <a href="#">Food</a> <a href="#">Order</a> <a href="#">Logout</a>											
<b>Manage Order</b>											
S.N.	Food	Price	Qty.	Total	Order Date	Status	Customer Name	Contact	Email	Address	Actions
1	Smoky Beef Burger	390.00	4	1560.00	2021-09-12 02:58:55	Ordered	T	123456	12@gmail.com	DHAKA	<a href="#">Update Order</a>
2	Chicken Burger	330.00	2	660.00	2021-09-12 12:30:07	Delivered	TaniaS	01992342903	zarinanana456@gmail.com	Uttara	<a href="#">Update Order</a>

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Figure 5.14: Manage Order Page

Admin will be able to update status of the order. And also can change information about customer.

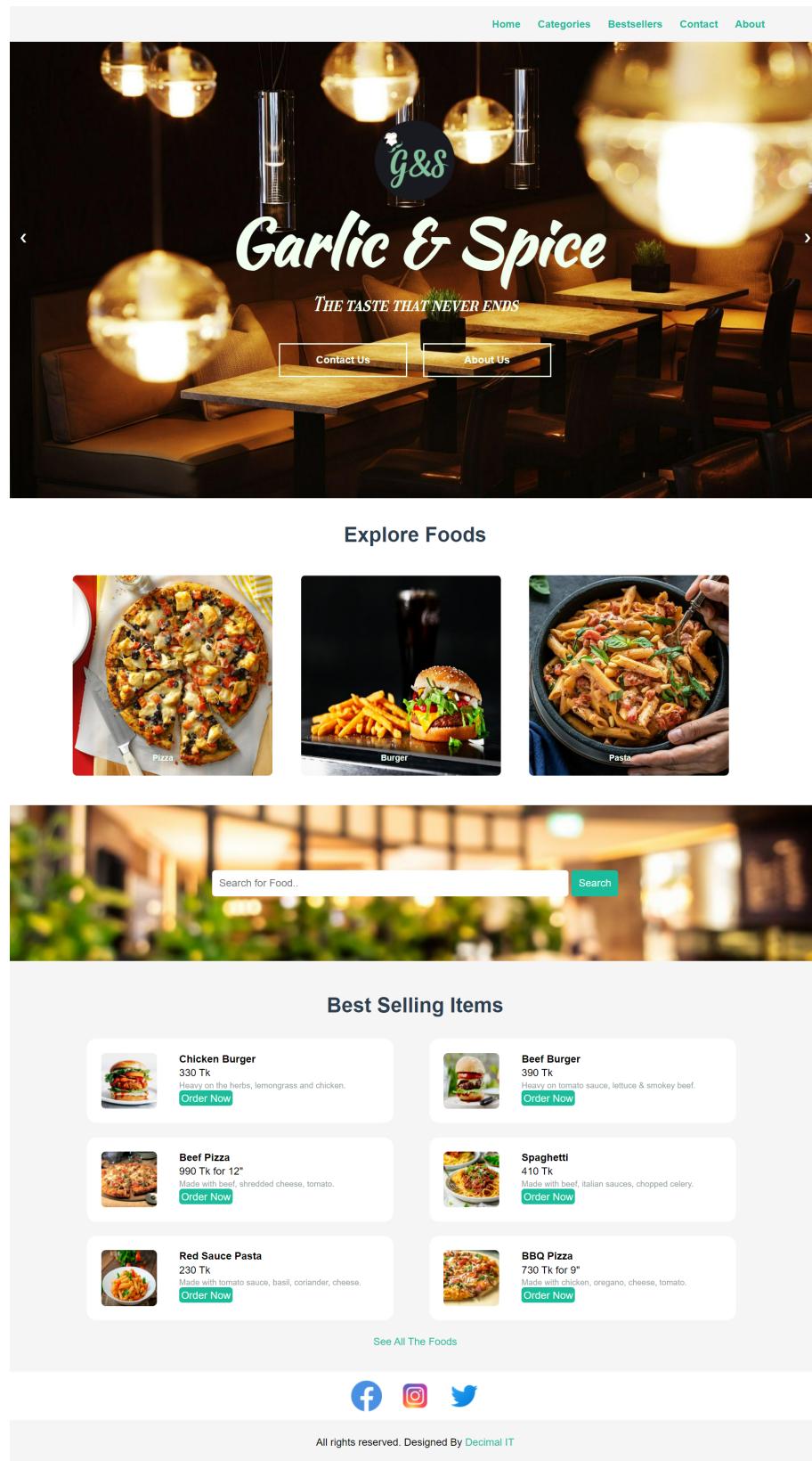


Figure 5.15: Homepage of the website

This is the landing or homepage of the website. Customer can view the website without login. And admin can fully maintain the website from admin dashboard.

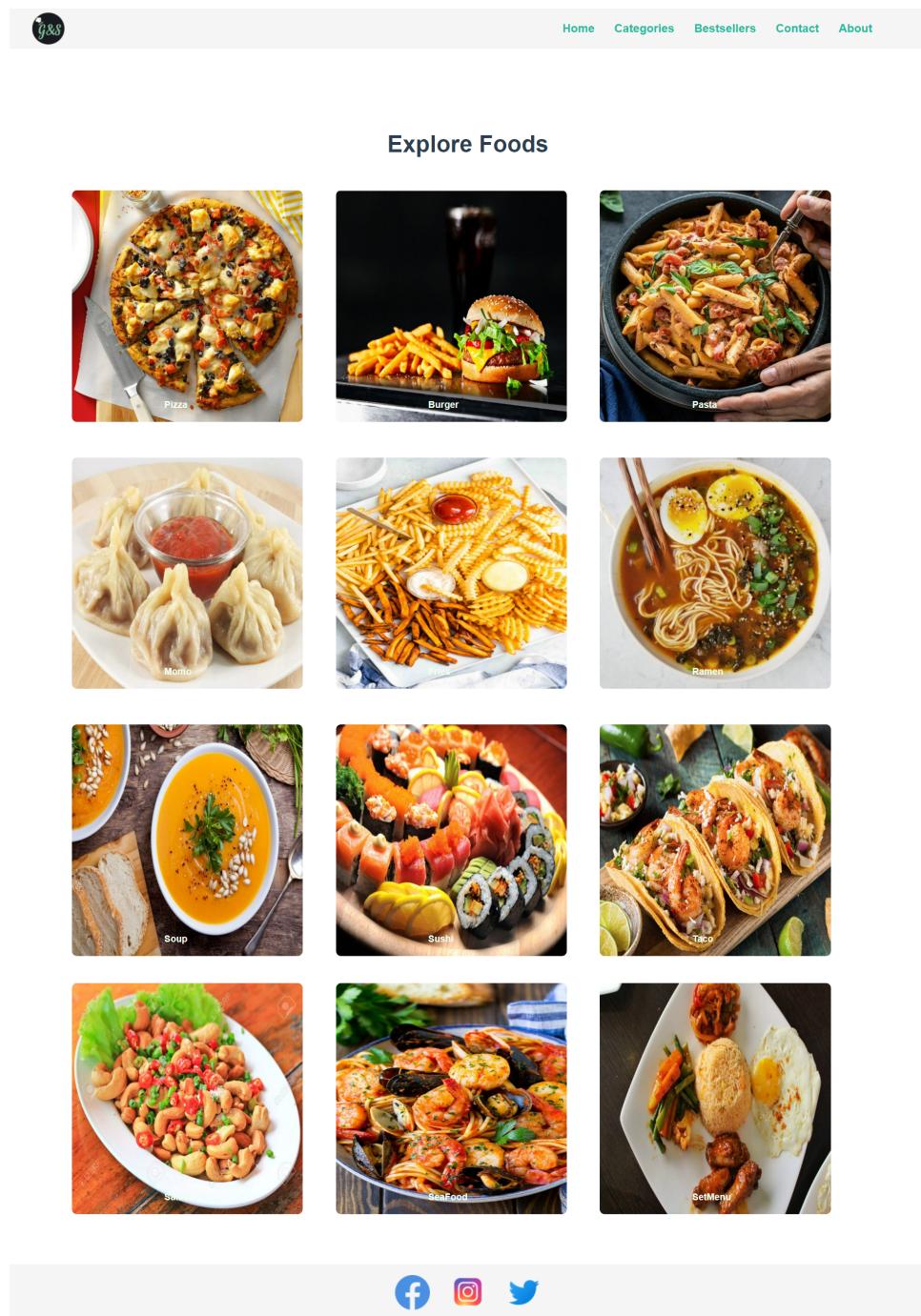


Figure 5.16: Category page of the website

This is the category page of the website. All the category will be shown here. Admin can update or delete and add new category from admin panel.

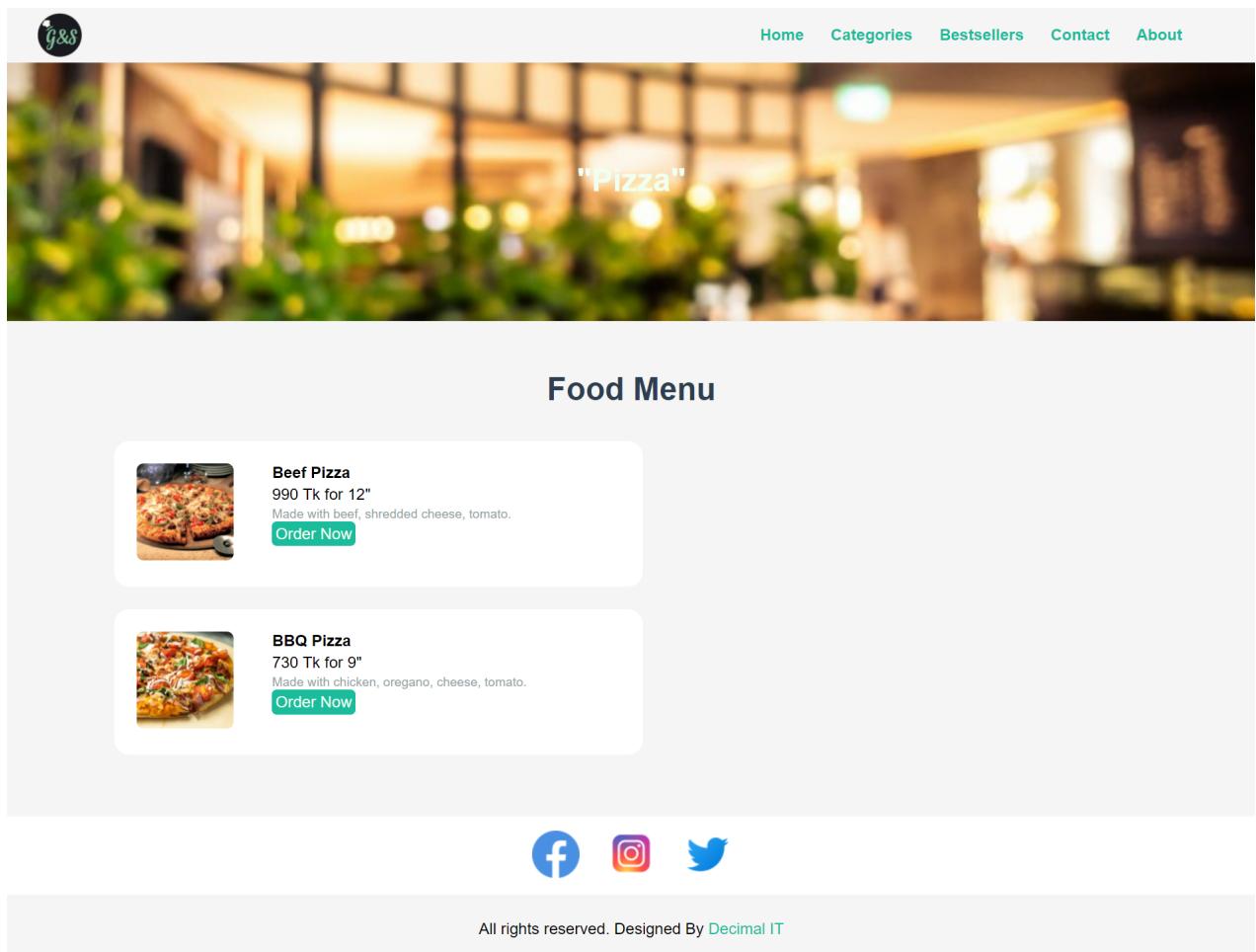


Figure 5.17: Food Item page of the website

Food item will be shown like this under each category. This can be also updated by the admin. After searching customer will also get result of the search in this way.

### 5.4.3 Architecture

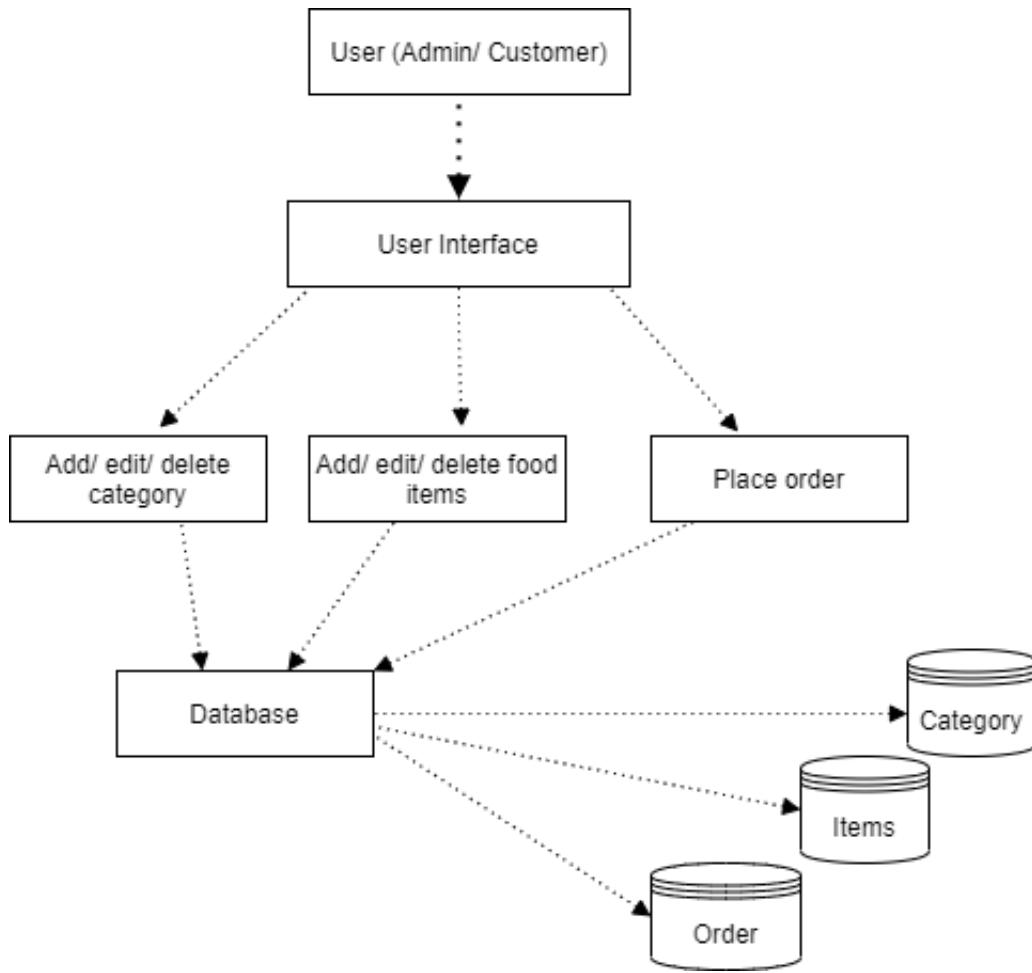


Figure 5.18: Architecture of the System

For this project, I am going to use 3-tier architecture. A 3-tier architecture is a modular client-server architecture that consists of a presentation tier, an application tier and a data tier. The data tier stores information, the application tier handles logic and the presentation tier are a graphical user interface (GUI) that communicates with the other two tiers. The presentation layer will our website. User (Admin/ customer) will access this layer. In the application layer, the main task will be add/ edit/ delete category, add/ edit/ delete food items, and place order. These tasks will be performed by user. This layer handles the logic. And the last layer is data layer. This database layer will store all the information about these tasks. And whenever needed the interface layer will show information from accessing the database layer.

# Chapter 6

## Results & Analysis

The system is about online restaurant management. This system will serve some important services. To develop this, first I tried to understand the requirements. For this a meeting was arranged with the clients. After listening all their requirement, I asked for help from my supervisor to sum up all their requirement to identify the real problem, its objective and scope. After realizing requirement, I thought of using waterfall model for this system. I designed my work according to this model. To complete my work, I followed some extra steps, that I mentioned in the wbs of my project.

For finding out the systems possible feature I interviewed some interviewees to have their opinion. For this I chose closed ended questions to specify the answer. From requirement phase I gradually started developing my project. I did some analysis to visualize my work, as in six element analysis, feasibility analysis and many more. These analyses cleared the purpose of the system, why it is needed and its economic benefits.

With the guideline from my supervisor I designed the general structure of the project. While doing so I faced several problems but analyzing those problem I came up with the solution. For system design I think uml diagram is the best option to visualize my work along with its main actors, roles, actions, or classes. Implementing all the possible function can really increase the productivity of the website. This project's main objective is to make all the processes of the system more user friendly.

The services that are provided by the website are order management, category management, and food item information management. Customer can view the whole website. Customer can see the category of the food items. To place order customer can search for food. Customers need to choose their desired food, select the quantity of the food, must provide information like. (Full name, phone number, email, address) to place their order. To make all the tasks of order management workable all function should be implemented successfully.

Now, to access the admin panel admin needs to provide his information to log in. Admin can upload and update and delete new category and food items. Admin can access all the order details of customer. And also, can delete the order if needed. Admin can create summary dashboard, track food delivery and calculate actual revenue of the system and can log out.

### **Advantage**

- Anyone can use this website to order food as it does not have any ambiguity.
- Admin can easily manage the website without facing any problem.
- Admin can manage order by using website. It improves productivity of restaurant.
- As it can keep track of orders and deliveries, so actual revenue of the restaurant can be calculated.

### **Disadvantage**

- As customer cannot log in to this website, so they need to give their personal data every time they order food. That makes the website a bit of inconvenient to use.
- Customer cannot see their previous order history as I didn't include this feature for now.

# Chapter 7

## Project as Engineering Problem Analysis

### 7.1 Sustainability of the Project/Work

**Browser Support:** It is not an issue any longer. Using the HTML means that the content of the web page is accessible on all the big browsers like Chrome, Opera, Firefox.

**Fast Loading Speed:** It is one of the most important factors when it comes to client satisfaction in the front-end development business as when we try to use more design it gets more complex to maintain.

### 7.2 Social and Environmental Effects and Analysis

A restaurant can positively affect a community by how their experience was. If we order some food items online and find out that their service is great and as well as the food. People are going to order there and tell other people that how wonderful it is. And people do not need to go anywhere and even after that they can order and get their desired food.

If we think about the environmental effects there are a number of activities conducted at restaurants that could increase the potential for environmental exposures. One of those activities includes the disposal of food, which according to the Environmental Protection Agency (EPA) ends up in landfills and incinerators, affecting local air and water quality. So, if anyone monitors these sides of a restaurant then, the effects of a restaurant on environment will be in control. And it will have a positive impact on the environment and as well as the society.

## **7.3 Addressing Ethics and Ethical Issues**

The restaurant industry is fiercely competitive and operates on notoriously tight margins. Success or failure can hinge on your ability to develop competitive advantages and offer your customers something that they cannot get from your competitors. Competitive advantages in the restaurant industry are sometimes a matter of offering real value, such as superior food or sustainably sourced ingredients.

Restaurant owners face ethical quandaries on a regular basis. Whether it's questions over how purchases are made (online or dine in), how staffing is determined or what happens to unused food at the end of the night, it's important to make sure your restaurant operates in an ethical manner. To do otherwise risks not only lower profits, but it also can place your business in legal jeopardy. So, whether its online or dine in restaurant authorities should focus on their food's quality, suppliers, their hospitality towards their customer, customer should feel valued from the moment they enter till the moment they depart.

# **Chapter 8**

## **Lesson Learned**

### **8.1 Problems Faced During this Period**

In university all the learning is theoretical. In our courses, we have learned how the basics of business are operated. Here I got the opportunity to work with real world problems and apply my knowledge to solve them that helped me gain a firsthand experience on how an office conducts its daily operations and how it operates in its market. Although Decimal IT is relatively a small-scale company, it is a company that is successful in its field of business. Here I experienced the opportunity to work under a small-firm environment but due to the company's nature of business, I also gained the opportunity to visit other firms and interact with them on a business-to-business level. I was given the chance to use my learnt abilities and to put them to good use as we faced many clients with a never-ending variance of requirements and more importantly one that needed the help of such companies as the one, I was working for. I used my academic skills to aid me many times during presentations, meetings with clients and all the technical work and gained firsthand experience in client as well as office management. Through my internship experience I also learned about the existence of small firms, such as the one I worked for, and their importance in the greater economy.

Stepping into the real-world problems will bring up many unexpected challenges to be faced, as did I during my period of internship. The first to begin with was talking to clients about projects. As Decimal IT is relatively small in scale, because of which at often times meetings with most clients was not very officially done. No documentation work was done or asked to get done only because those were known clients. Words of mouth were more preferable than stated documents. Due to no documentation of previous projects being available, when I thought of using those documentation to get help for my assigned project, I didn't get anything and some of the documentation I could not access for the privacy issues, and one more thing is old clients used to come with their system to fix bugs

or implement any updates, huge back tracing was always required in order to understand the programs by someone who didn't develop it in the first place. Other than that, as the development department that I was working for used to work with few fixed frameworks, so coping up with those were much of an issue as a junior web developer.

## 8.2 Solution of those Problems

In most of our senior courses like Database Management, System Analysis Design and Web Application and Design, we were taught the importance of any system development's project documentation, that how crucial it is for a good and efficient development and maintenance of the system. A proper documentation also helps to add any updates required in the future more easily, that is, maintaining project's documentation shall help with the project development and also be beneficial in the long run.

Decimal IT has a very few employees; hence, they cannot meet the manpower required at times when they undertake a project. Therefore, at times delivery of a product is not made on time which will eventually create a bad image of the company in the market. But I think they can overcome these problems, if they take some crucial steps like general working conditions ought to be improved. They should increase the manpower for quick client service. Branches can be increased in the country for local marketing. They have many attractive products and services but they do not promote their products well. They should advertise their products and services so that more people get attracted to it. Management should arrange appropriate training facilities for their staff to be always helpful, courteous and knowledgeable. They should have an official complaint management where the customers can give their feedback about the services.

# **Chapter 9**

## **Future Work & Conclusion**

### **9.1 Future Works**

The project I was working on is a basic restaurant management system. It has many sides that are need to be improved in the near future. This projects delivery system is still manual. Admin will capture the orders from the admin panel and then they will work manually to deliver the food. And also, the customer cannot log in or register themselves so they will not be able to see their profiles. Though a lot of users find it very easy to order but if we think about today's world it is not updated. As the restaurant authorities don't want any payment method, even after that it is a must for any website. So, this project will also need this sides to be improved.

### **9.2 Conclusion**

This report is made only for academic purpose and to fulfill the requirement for industrial attachment. This report has covered the direct and indirect aspects of software industry and their challenges. This report gives an insight into the experience that I achieved from my workplace. A brief description of Decimal IT is included so that other students can get to know about the company and may decide whether it is suitable for them or not.

If internships are about gathering skills, then projects are the main way of gathering them. Till writing this report I have completed one project and helped in developing the web applications for Decimal IT. The tasks, timeline and results of those specific projects are included for a better visualization of industry standard projects. An internship may not run as smoothly as it is expected. There may be a lot of challenges but there is a lot to learn from them.

The challenges that I have faced over this period of time are discussed in this document.

The skills which include both technical and non-technical ones are also a vital part of this report. And last but not the least, some recommendations are proposed which if worked out may provide some benefits to the future interns going to Decimal IT.

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