# Restaurant Management System

**A PROJECT REPORT**


***Submitted by:***
**Md Sahrial Alam (ID:17182103334)**
**Md Ikbal Hosain(ID:17182103317)**
**Md Khairul Anam Mubin (ID:17182103286)**
***)***


***In partial fulfillment of the requirements for the degree of***

**BACHELOR OF SCIENCE**
**IN**
**COMPUTER SCIENCE AND ENGINEERING**



**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

**BANGLADESH UNIVERSITY OF BUSINESS AND TECHNOLOGY (BUBT)**

**DHAKA-1216**


**JUNE, 2017**

# ABSTRACT

Abstract represents a summarized report of the complete project in a very concise and informative format covering main objective and aim of the project, the background information, processes and methods used, and methodologies implemented, followed with a brief conclusion of two to three lines talking about the results and scope of the project.In this section you write a brief description of what you did. You can use one or two sentences to summaries each important chapter of your report.

The entire abstract of a project report should be written in about 250 to 350 words, and therefore, should not exceed any further.

# DECLARATION

I hereby declare that the project "Restaurant Management System" submitted for the degree of Bachelor of Science Engineering in Computer Science and Engineering in the faculty of Computer Science and Engineering of Bangladesh University of Business and Technology (BUBT), is our original work and that it contains no material which has been accepted for the award to the candidates of any other degree or diploma,except where due reference is made in the next of the project to the best of our knowledge, it contains no materials previously published or written by any other person except where due reference is made in this project.

**Md Sahrial Alam**
**ID:**
**17182103334**
**Intake: 38**
**Section-07**

**Md Ikbal Hosain**
**ID:**
**17182103334**
**Intake: 38th**
**Section-07**

**MD Khairul Anam Mubin**
**ID:**
**17182103286**
**Intake:38**
**Section-07**

# CERTIFICATION

This project “Restaurant Management System” report submitted by Md Sahrial Alam, Md Ikbal Hosain, Md Khairul Anam Mubin students of Department of Computer Science and Engineering, Bangladesh University of Business and Technology(BUBT), under the supervision of Faisal Ahmed, Lecturer, Department of Computer Science and Engineering has been accepted as satisfactory for the partial requirements for the degree of Bachelor of Science Engineering in Computer Science and Engineering.

**(M.M. Fazle Rabbi)**
**Lecturer & Project Supervisor**
**Department of CSE**

**(Prof. M. Ameer Ali)**
**Professor & Chairman**
**Department of CSE**

# DEDICATION

Dedicated to our parents for all their love and inspiration.

# ACKNOWLEDGEMENTS

I would like to thank the following people for their help in the production of this project:

Md Anisul Islam Owner of Café Restaurant  to giving feedback on the topic.

Md Saiful Ahmed manager of Café Restaurant  for provide information

M.M. Fazle Rabbi for his assistance in testing the software application developed in the project and providing feedback.

# APPROVAL

This Report "Restaurant Management System" Submitted by **Md Sahrial Alam ,Md Ikbal Hosain, Md Khairul Anam Mubin** ID NO: **17182103334**, **17182103317** and **17182103286** Department of Computer Science and Engineering (CSE), Bangladesh University of Business and Technology (BUBT) under the supervision of Samsuddin Ahmed, Assistant Professor and, Department of Computer Science and Engineering has been accepted as satisfactory for the partial fulfillment of the requirement for the degree of Bachelor of Science (B.Sc. Eng.) in Computer Science and Engineering and approved as to its style and contents.

---

**Supervisor:**

**Fazle Rabbi**
Lecturer
Department of Computer Science and Engineering (CSE)
Bangladesh University of Business and Technology (BUBT)
Mirpur-2, Dhaka-1216, Bangladesh

---

**Chairman:**

**Prof. M. Ameer Ali**

Professor and Chairman
Department of Computer Science and Engineering (CSE)

# ABBREVIATIONS AND NOMENCLATURES

**<Font Size:16, Font Style: Times New Roman-Bold, 1.5 line spacing>**

| | |
|---|---|
| **C#** | The C Programming Language 2nd Edition |
| **DBMS** | Database Management System |
| **SQL** | Structured Query Language |

# TABLE OF CONTENTS

# LIST OF FIGURES

# CHAPTER 1

# INTRODUCTION

## 1.1 Introduction

Each cities or area or region have lots of restaurant for providing food to customers. The main aim behind this project is to get the current status of restaurant to manage details it will handle the sales information and total income states. The software also provides the sales rate and date to date calculations of each item category used. The software records daily customer list, purchased items by customer and the amount of money through its category. In this software we are maintaining the entire detail of the food items in short. It also includes options such as adding the items, updating the software information, deleting the items information. The delete option has some constraints. The software also includes a standard chart of item list and with the amount of that item. Besides, at the time of making bill payment receipt the amount of the item will show automatically, that's why the manager doesn't need to know the price of the item. In this option backup of the entire software information can be stored in the database with date, if in case the data get lost, we can retrieve the lost data from the database. It has a facility to maintain a database of all the selling item. This software can be used in general in any institution, hotels, canteen, etc. which is maintaining a restaurant or cafe. We can improve the efficiency of the restaurant management, thus overcome the drawbacks of the existing management.

## 1.2 Existing Model / Existing Theory

The current system is paper based. Papers are used in restaurants for displaying the traditional menu cards, writing down the orders of customers, storing the records of customers. The disadvantages of paper based system are that papers can get easily damaged by stain marks; they can be lost due to fire or accidents or can get lost in general. Hence, time and money is wasted. As traditional menu cards are paper based, any changes that need to be made in the menu will require reprinting of the entire menu card, leading to wastage. For small changes, reprinting the entire menu card is impossible. Changes in the menu card cannot be made dynamically. It is inefficient to access a particular record from the stack of papers. This system is time consuming. One has to call a waiter number of times till he notices it, and wait for him to arrive at their table to take their order. Also the waiter can misinterpret the customer's order since he is writing the order on paper, and the case of serving a wrong dish is possible. For placing any orders customers have to visit hotels or restaurants to know about food items and then place order and pay. In this method time and manual work is required. Every restaurant needs a system so that they can take the order in there system and keep the information.

## 1.3 Problem Statement

Problem Statement Nowadays, many restaurants manage their business by manual especially take customer ordering. Today, restaurant waiter takes the customer ordering by manual system with using paper. This is problem for restaurant waiter the probability lost and duplicates customer information. They can't keep the customer information. Sometimes they make a wrong bill. Like this there are so many problems.

## 1.4 Motivation

The project aims to develop a system is for any type of document but nothing particular. This system is revolutionary to document processing. The uniqueness is being desktop based offline application and for general-purpose. This system available in a single computer. But it's database can be access through local area network if database in a server computer. This system is

developing by .Net Framework which followed the code first approach. To develop a database system which can easily store, retrieve and delete data.

## 1.5 Objectives of the project

The objectives of the project are follows:

i. To make a system that reduce the time to maintain a restaurant.
ii. To keep track of user records.
iii. To calculate items correctly.
iv. To keep the records of sales
v. To judge the sales information

## 1.6 Key Benefits This system has many features.

Some of them are below:

**i. User Friendly Interface**

The user interface is just awesome. Anybody can operate the software with some basic knowledge of computer.

**ii. Admin**

Privileges In this system, Owner play the admin role. Owner/Admin/Partner can add, view, remove items and users only, set bill is only task of manager/cashier etc.

**iii. Security**

Login system is implemented. So, only admin/owner can control the operations. All activities are recorded in database and available to only the admin.

**iv. Time Savings**

In manual system, it is very time consuming for recording, calculating item rates, searching and judging all etc. But in this system, it is very easy to do them by clicking on few buttons.

**v. Report Generates**

By using this system, we can filter any data of a table by date range and export the report in PDF format.

## 1.7 Organization of This Project

In chapter 2 explains existing system, existing or supporting literature and analysis of existing system. In existing system we will discuss about how restaurant run in Bangladesh. Moreover, in this part we will also discuss about the many types of existing restaurent and functionalities of the existing restaurent. In supporting literature we will describe about the all types of tools that we have used in our system. From analysis of existing system we will come to know proses and cons of online shopping system.

Chapter 3 consists of the feasibility study, requirement analysis, system design and implementation. In feasibility study part we will discuss technical feasibility, economical feasibility, operational feasibility, behavioral feasibility and legal feasibility. In this chapter next part is requirement analysis. Here, we will discuss about the functional and non-functional requirements. Then next part is system design. In this part we will describe how we have designed our system. In implementations part of this chapter we will discuss about front end, forms design, report design, back end, database design.

Chapter 4 explains about the experimental results of our project and analysis of the result and also discuss about the applications of our project. In result analysis part we will discuss about the report or output of our system and we will know about the daily, weekly and yearly sales chart of our system. In application part we will describe about the real time uses and financial benefits of our system.

Chapter 5 discusses about the system requirements, user interfaces or the screenshots of our system. In system requirements part we will discuss about the hardware requirements and software requirements for client and server. In user interfaces part we will give all the screenshots of our system.

Chapter 6 concludes the report of our system. In this chapter we will discuss about limitation and future works. In limitation part we will discuss about the limitation of our system. In future works we will discuss about the modules which we will develop in future.

## 1.8 Conclusion

The main objective of the project is to establish an integrated restaurant management system which enables us to automate the dynamic Administrative process in the restaurant. Establishing a strong and effective Management System. Achieving integration between developed management system and other available systems. Preparing electronic data that enable the process entering and converting data.

# CHAPTER 2

# EXITING SYSTEM

## 2.1 Introduction

This chapter will mainly discuss on the study that are done by previous research of other authors in the similar area of the present study. Throughout this chapter, there will be comprehensive discussion on theoretical and practical views of previous studies done in restaurant management system digitally and manual restaurant for apparels.

## 2.2 Existing System

The current system is paper based. Papers are used in restaurants for displaying the traditional menu cards, writing down the orders of customers, storing the records of customers. The disadvantages of paper based system are that papers can get easily damaged by stain marks; they can be lost due to fire or accidents or can get lost in general. Hence, time and money is wasted. As traditional menu cards are paper based, any changes that need to be made in the menu will require reprinting of the entire menu card, leading to wastage. For small changes, reprinting the entire menu card is impossible. Changes in the menu card cannot be made dynamically. It is inefficient to access a particular record from the stack of papers. This system is time consuming. One has to call a waiter number of times till he notices it, and wait for him to arrive at their table to take their order. Also the waiter can misinterpret the customer’s order since he is writing the order on paper, and the case of serving a wrong dish is possible. For placing any orders customers have to visit hotels or restaurants to know about food items and then place order and pay. In this method time and manual work is required. Every restaurant needs a system so that they can take the order in there system and keep the information.

## 2.3 Supporting Literature

Nowadays, many management systems are having developed rapidly. Those management systems are developed on the purpose to overcome the problems that faced by manual method and it is also can ease up the user to do their daily work. Development of computer-based system provides more benefits and influences that can shape and create the work culture more systematic and can change the administrative structure of an organization to be more quickly and effectively. Hence, we would like to propose the idea of Restaurant Management System. Restaurant Management System is a system that develops to change manual system used in restaurant. It can be applying by customers who comes in restaurant. Through this system, user will be able to record all information about and complaint that was made into single database. Besides, they also can use this system to keep tracking about their sales item, item rate etc. Every data can be search, add, and also delete. they could only do update their profile, view activities, records and export them as PDF. If they forget their password, they can reset it by using the admin approval. Additionally, Restaurant Management System software is easier to use.

### 2.3.1 Used Diagrams

- Entity Relationship Diagram
- Entity
- Weak entity
- Attribute
- Multi valued attribute
- Derived attribute
- Relationship

**Mapping Cardinality of ERD**

Explain with example

One to One

An entity in A is associated with, at most, one entity in B, and an entity in B is associated with, at most, one entity in A.

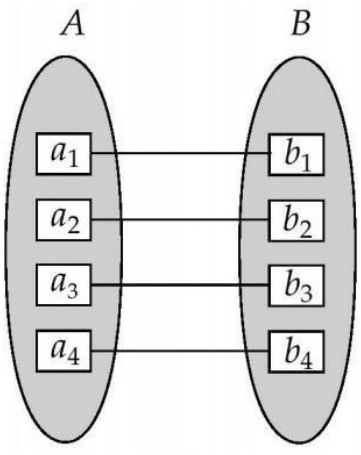



**Figure 3.2:** One to One Mapping Cardinality

ii. One to Many

An entity in A is associated with any number of entities in B. An entity in B, however, can be associated with, at most, one entity in A.

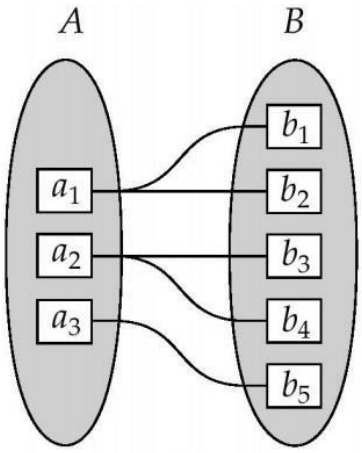



**Figure 3.3:** One to Many Mapping Cardinality

iii. Many to One

An entity in A is associated with, at most, one entity in B. An entity in B can be associated with any number of entities in A.

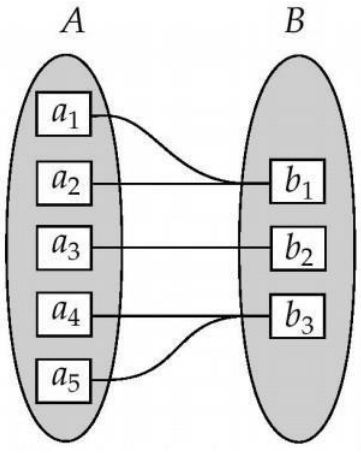



**Figure 3.4:** Many to One Mapping Cardinality

iv. Many to Many

An entity in A can be associated with any number of entities in B. An entity in B can be associated with any number of entities in A.

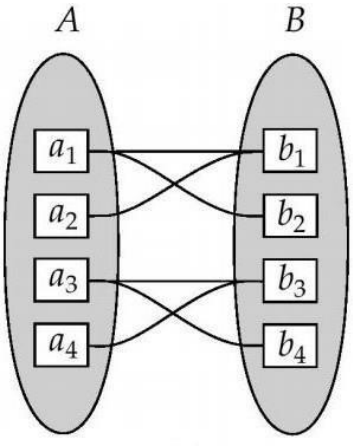



**Figure 3.5:** Many to Many Mapping Cardinality

### 2.3.1 Data Flow Diagram (DFD)

A Data Flow Diagram (DFD) is a structured analysis and design tool that can be used for flowcharting [50]. A DFD is a network that describes the flow of data and the processes that change or transform the data throughout a system. This network is constructed by using a set of symbols that do not imply any physical implementation. It has the purpose of clarifying system requirements and identifying major transformations. So it is the starting point of the design phase that functionally decomposes the requirements specifications down to the lowest level of detail [50]. DFD can be considered to an abstraction of the logic of an information-oriented or a process-oriented system flow-chart. For these reasons DFD's are often referred to as logical data flow diagrams [50].

DFD graphically representing the functions, or processes, which capture, manipulate, store, and distribute data between a system and its environment and between components of a system [53].

The visual representation makes it a good communication tool between User and System designer. Structure of DFD allows starting from a broad overview and expand it to a hierarchy of detailed diagrams [53]. DFD has often been used due to some reasons such as logical information flow of the system, determination of physical system construction requirements, simplicity of notation, establishment of manual and automated system requirements

### 2.3.2 Components of DFD

DFDs only involve four symbols. They are:

i. Process

ii. Data Object

iii. Data Store

iv. External entity

**Process** Transform of incoming data flow(s) to outgoing flow(s).
**DataFlow** Movement of data in the system.
**DataStore** Data repositories for data that are not moving. It may be as simple as a buffer or a queue or a s sophisticated as a relational database.
**ExternalEntity** Sources of destinations outside the specified system boundary.

## 2.5 Analysis of Existing System

Everyday they open the restaurant at 10am and close it at 11pm.Employees Is buying raw materials for cooking menu or list. Waiter take the order from customer and make the food and serve them. Waiter give the bill in manual system to customer. Manager keep the sales and buying information daily basis. Owner pay the salary to employee in monthly. Everything is manual. They calculate bills and total sales manually. They don't keep any member records. They keep the sales data in khata.

## 2.6 Conclusions

Everything is manual. They calculate bills and total sales manually. They don’t keep any member records. They keep the sales data in khata.

# CHAPTER 3

# PROPOSED MODEL

## 3.1 Introduction

Requirements analysis in systems engineering and software engineering. encompasses those tasks that go into determining the needs or conditions to meet for a new or altered product, taking account of the possibly conflicting requirements of the various stakeholders, such as beneficiaries or users. Another requirement you need to have to be a software manager you need to know how to pleasure your boss. But in financing you also need to pleasure your boss. Requirements analysis is critical to the success of a development project. Requirements must be documented, actionable, measurable, testable, related to identified business needs or opportunities, and defined to a level of detail sufficient for system design. Requirements can be architectural, structural, functional, and non-functional .

## 3.2 System Analysis

System analysis is the process of gathering and interpreting facts, diagnosing problems and using the information to recommend improvements on the system. System analysis is a problem-solving activity that requires intensive communication between the system users and system developers. System analysis or study is an important phase of any system development process. The system is viewed as a whole, the inputs are identified and the system is subjected to close study to identify the problem areas. The solutions are given as a proposal. The proposal is reviewed on user request and suitable changes are made. This loop ends as soon as the user is satisfied with the proposal.

The existing system is not totally automated. Though the system is computerized to a particular extent, it has not to do a lot of manual work. The different processes involved are:

i. User friendly.
ii. Less human error.

iii. High security.
iv. Easy data uploading.
v. Easy record keeping.
vi. Backup data can be easily generated.

## 3.2 Feasibility Study

The objective of feasibility study is to determine whether or not the proposed system is feasible. A feasibility study is a preliminary investigation of a proposed system to decide whether the system can run smoothly with the organization, will the organization realize the benefits that are expected and to decide will the organization go for it.

Feasibility is defined as the practical extent to which a project can be performed successfully. To evaluate feasibility, a feasibility study is performed, which determines whether the solution considered to accomplish the requirements is practical and workable in the software. Information such as resource availability, cost estimation for software development, benefits of the software to the organization after it is developed and cost to be incurred on its maintenance are considered during the feasibility study. The objective of the feasibility study is to establish the reasons for developing the software that is acceptable to users, adaptable to change and conformable to established standards. Various other objectives of feasibility study are listed below.

 To analyze whether the software will meet organizational requirements

 To determine whether the software can be implemented using the current technology and within the specified budget and schedule

 To determine whether the software can be integrated with other existing software.

Three Types of feasibility study

1. Technical Feasibility.

2. Operational Feasibility.

3. Economical Feasibility.

### 3.2.1 Technical feasibility

In this, one has to test whether the system can be developed using existing technology or not. It is evident that necessary hardware and software are available for development and implementation of proposed system. We acquired the technical knowledge of working in languages, and then only we have started designing our project. The system is self-explanting 5

and does not need any entire sophisticated training. A system has been built by concentrating on the graphical user interface concepts, the application can also be handled very easily with a novice uses. The overall time that a user needs to get trained is less than 15 minutes.
The system has been added with features of menu device and button interaction methods, which makes him the master as he starts working through the environment. As the software that were used as developing this application are very economical and are readily available is the market the only time that is lost by the customer is just installation time. Technical feasibility performs following tasks.

I. Analyzes the technical skills and capabilities of the software development team members.

II. Determines whether the relevant technology is stable and established.

III. Ascertains that the technology chosen for software development has a large number of users so that they can be consulted when problems arise or improvements are required.

IV. It mentions new hardware requirements of proposed system.

V. It Mentions Computer with new configuration requirements of proposed system.

VI. It mentions new software requirements of the proposed system.

### 3.2.2 Economical Feasibility

Economic feasibility is a measure of the cost-effectiveness of a project or solution. As a part of this, the costs and benefits associated with the proposed system are compared and the project is economically feasible only if tangible and intangible benefits outweigh the cost. The cost for proposed online shopping system is outweighing the cost and efforts involved in maintaining the registers, books, files and generation of various reports. The system also reduces the administrative and technical staff to do various jobs that single software can do. So, this system is economically feasible. Economical feasibility also performs following tasks.

I. Cost incurred on software development to produce long-term gains for an organization.

II. Cost required to conduct full software investigation (such as requirements elicitation and requirements analysis).

III. Cost of hardware, software, development team, and training.

IV. Cost of phones & mobile communication equipment.

V. Cost of salaries of employee.

VI. Cost of maintenance of equipment.

### 3.2.3 Operational Feasibility

Operational feasibility means how much the system is user interactive. In this project, the management will know the details of each project where he may be presented and the data will be maintained as decentralized and if any inquires for that particular contract can be known as per their requirements and necessaries. Operational feasibility also performs following tasks.

I. Determines whether the problems anticipated in user requirements are of high priority.

II. Determines whether the solution suggested by the software development team is acceptable.

III. Analyzes whether users will adapt to a new software.

IV. Determines whether the organization is satisfied by the alternative solutions proposed by the software development team.

V. It finds if any job reconstruction is required or not?

VI. Watches the feelings of the customers as well as user.

VII. System should provide right & accurate information to user or customer at right place as well as at right time.

## 3.3 System Requirements

A Software requirements specification report basically describes and environment for software/application under development. It completely describes the yield, cost, nature of the software/application.

### 3.3.1 Functional Requirements:

i. System will have 2 types of user called Manager and Admin.
ii. System will have secure Login and Registration functionality.
iii. Everyone will have a unique name.
iv. Admin can add, view, delete, remove member from the system.
v. Manager can view item list and make bill only.
vi. Manager can setup receipt and calculate total bill.
vii. Everyone can choose their items.
viii. Admin has permission to see other customer's activities.
ix. Admin can see total amount and judge every item and rating.

### 3.3.2 Non-Functional Requirements

**i. Safety Requirements**

If there is extensive damage to a wide portion of the database due to catastrophic failure, such as a disk crash, the recovery method restores a past copy of the database that was backed up to archival storage (typically tape) and reconstructs a more current state by reapplying or redoing the operations of committed transactions from the backed-up log, up to the time of failure.

**ii. Security Requirements**

Security systems need database storage just like many other applications. However, the special requirements of the security market mean that vendors must choose their database partner carefully.

**iii. Software Quality Attributes**

a. **Correctness:**

   The system should generate an appropriate report about different activities of the mess and should keep track of all records.

b. **Maintainability:**

   The system should maintain item and calculate item rate correctly.

c. **Usability:**

   The system should satisfy a maximum number of user's needs.

## 3.4 System Design

We have used System design model in RMS. Now we are going to tell about the model briefly.

### 3.4.1 Agile Method

Agile methodology is a type of project management process, mainly used for software development, where demands and solutions evolve through the collaborative effort of self-organizing and cross-functional teams and their customers.

Stemming from the values and principles of the Agile Manifesto, it was created as a response to the inadequacies of traditional development methods such as the Waterfall method. The software industry is a highly competitive market due to the fact that software is something that can be continuously upgraded. This means that developers need to constantly improve and innovate their products to keep on top of the game—and the linear, sequential approach of the Waterfall method just wasn't cutting it [5]

### 3.4.2 Data Flow Diagram

Also known as DFD, Data flow diagrams are used to graphically represent the flow of data in a business information system. DFD describes the processes that are involved in a system to transfer data from the input to the file storage and reports generation.

Data flow diagrams can be divided into logical and physical. The logical data flow diagram describes flow of data through a system to perform certain functionality of a business. The physical data flow diagram describes the implementation of the logical data flow**.**[6]

## Context level:

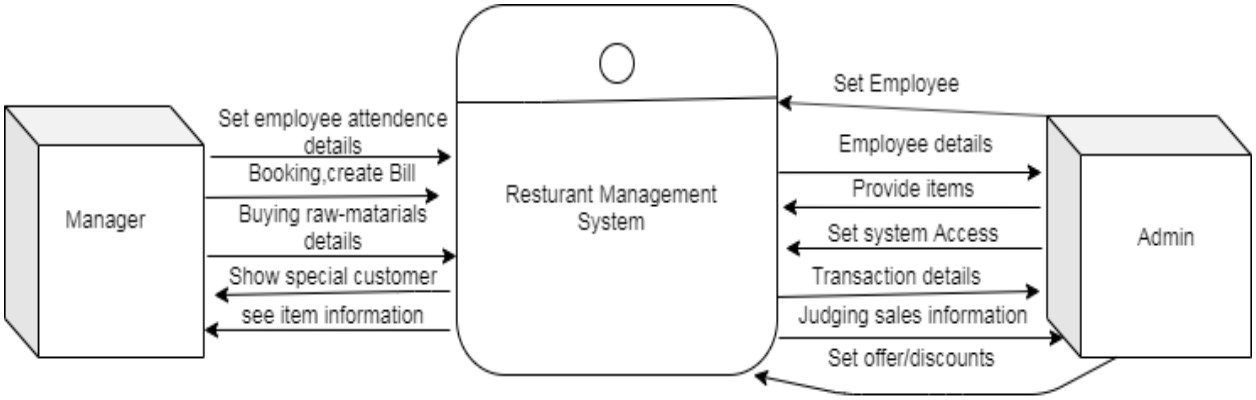
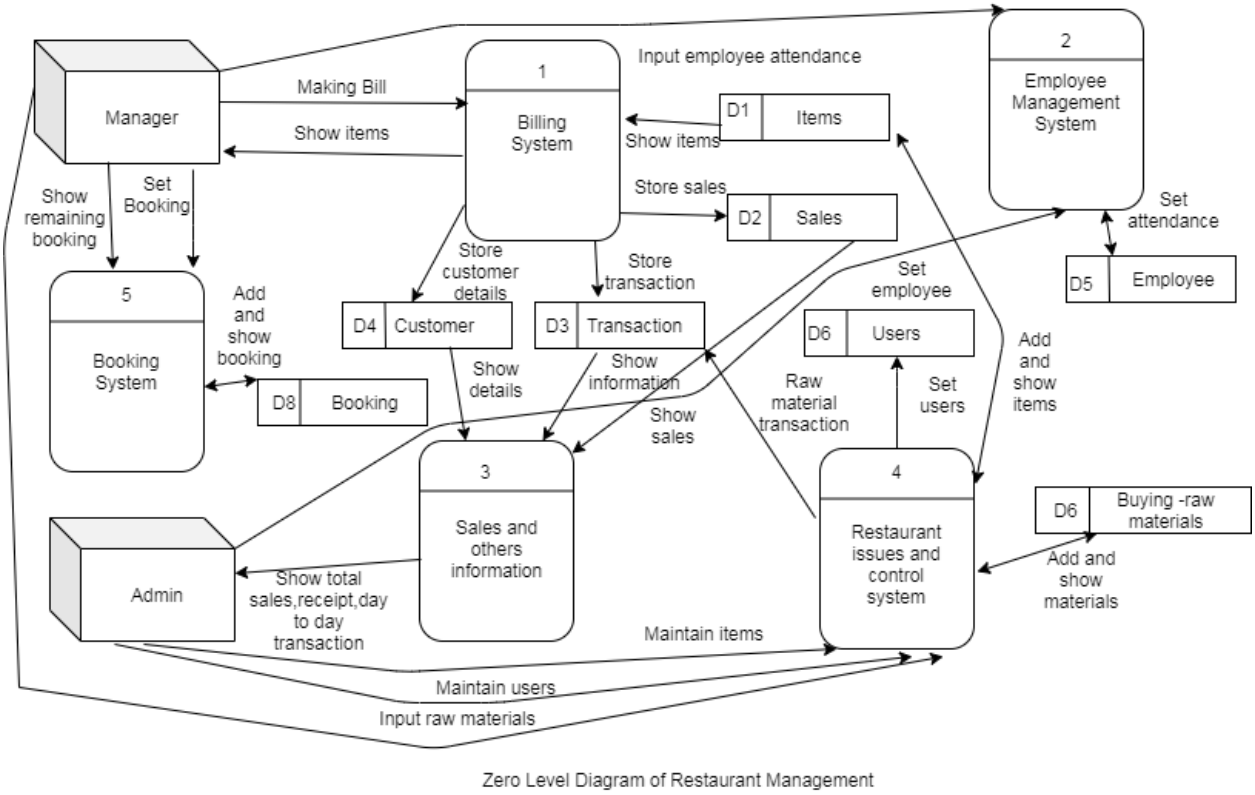



**Figure 3. 2.1: Context level**

## Zero level:




Zero Level Diagram of Restaurant Management

**Figure 3. 2.2: Zero level**

### 3.4.3 ER Diagram

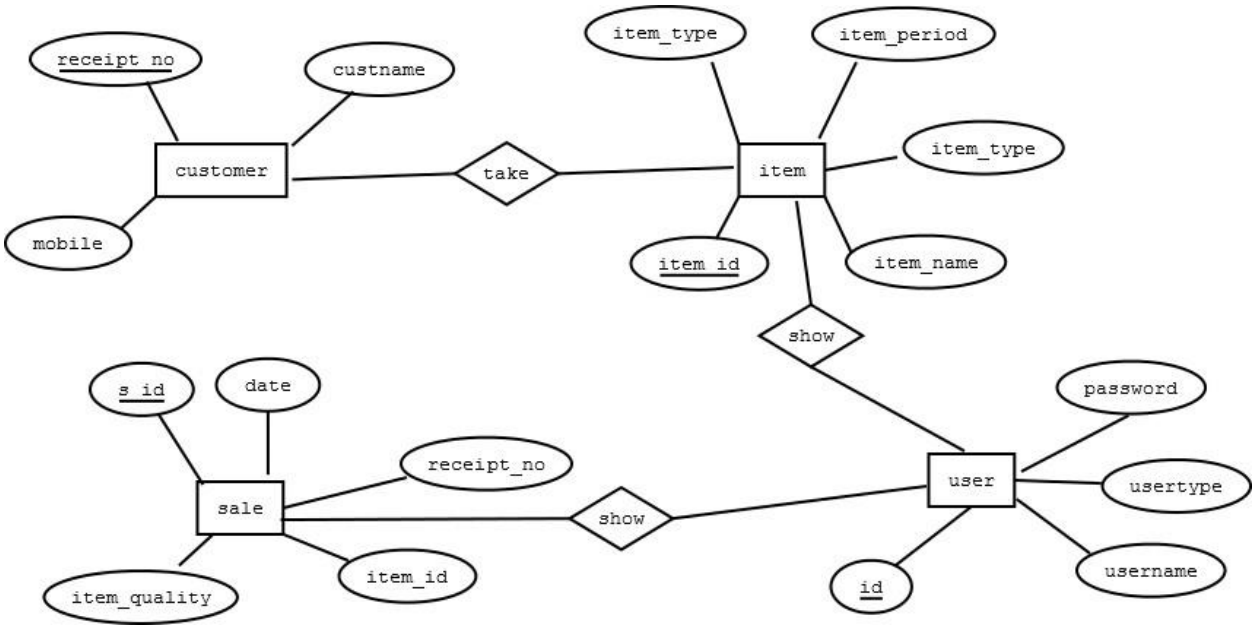



**Figure 3. 4.3: ER Diagram**

### 3.4.4 Use Case Diagram

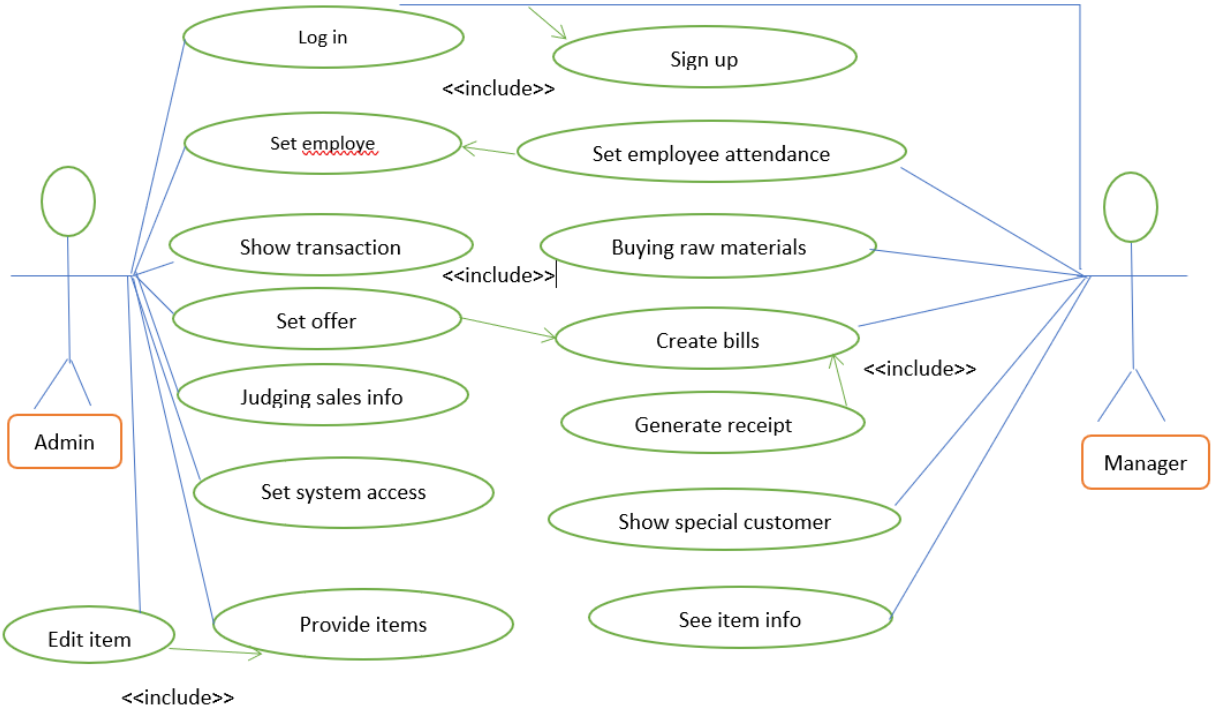



**Figure 3. 4.5: Use case**

### 3.4.5 Activity Diagram

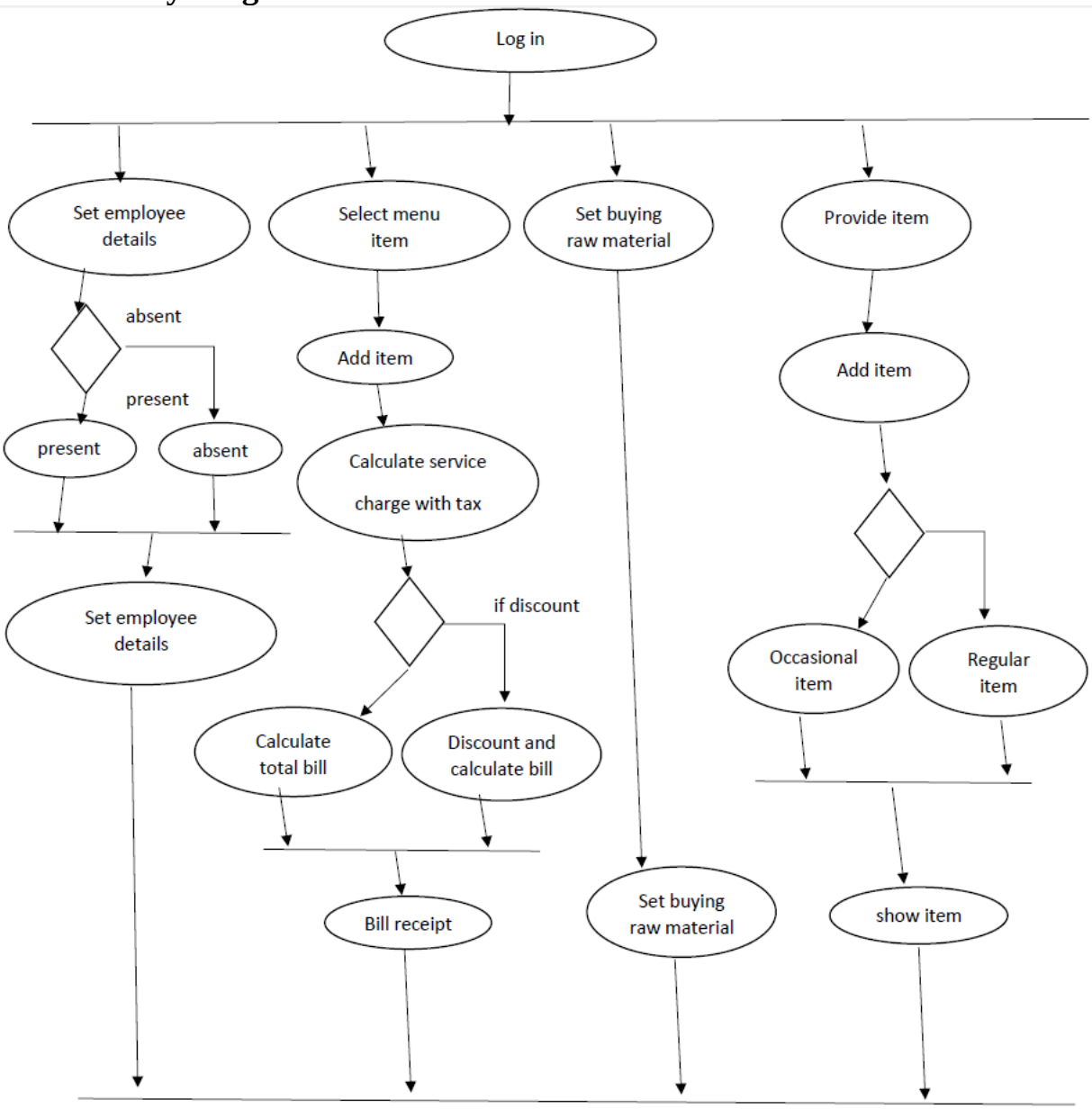



**Figure 3. 4.7: Activity Diagram**

### 3.4.6 Sequence Diagram

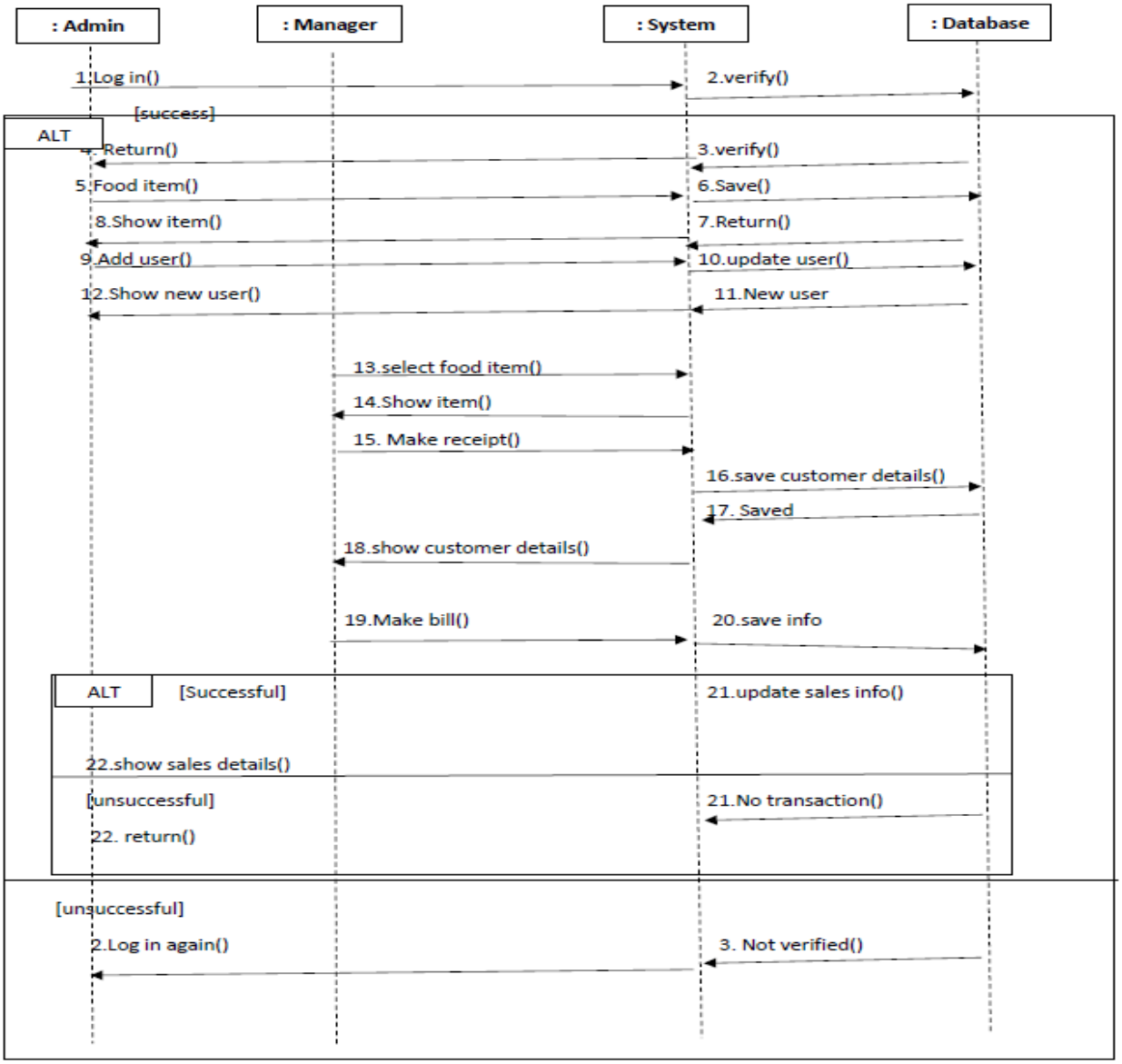



**Figure 3. 4.7: Sequence Diagram**

## 3.5 Implementations

Implementation is the stage where the theoretical design is turned into a working system. The most crucial stage in achieving a new successful system and in giving confidence on the new system for the users that it will work efficiently and effectively. The system can be implemented only after through testing is done and if it is found to work according to the specification. It involves careful planning, investigation of the current system and its constraints on implementation, design of methods to achieve the changeover and an evaluation of change over methods a part from planning. Two major tasks of preparing the implementation are education and training of the users and testing of the system. The more complex the system being implemented, the more involved will be the systems analysis and design effort required just for implementation. The implementation phase comprises of several activities. The required hardware and software acquisition is carried out. The system may require some

software to be developed.
The website, designed as online shopping center is separated into two parts: front end and back end. We have implemented our project with these two parts. Now we are describing about these two parts in the following.

## 3.5.1 Front End

The front end part, comprising of pages which users can view, is created by using templates so that it can expedite design and loading processes. This part, in the appearance, the main menu is consistent, thus it is easy to use. Considered as the most frequently access when comparing with other parts of the website, front end pages have to use template, and in turn, saving bandwidth and number of database accesses. For database operation issue, aiming for minimizing number of accesses, it needs just four queries to display all details. Those queries consist of jointed SQL statements, which inquire merely main information from the database. This part is consists of HTML, CSS, JavaScript, JQuery etc.
In front end we have developed and designed many function modules such as admin login form, price range module, brand filtering module, checkout form, add to cart form etc. by using html, css, java script, jQuery, bootstrap etc. We have also designed many pages for showing our electronics product by their category. We have designed our project from a template. Our project has the same style of all pages. The same kind of user operations is within a single interface to complete. Clicking muse can easily realize commodity, purchase, orders, query and other functions. It is easy to understand, and to use.
If users or customers want to buy goods in our system then he or she has to put the web address of our system. After putting address customers can see the home page of our project. Home page is the starting page of our project. If anyone enters into our project at first he can see the home page. In home page customers can see all of our products, products price, products category etc. He can query the latest products and promotional items and browse information. We have developed all the products information individually. Moreover, we have developed more pages for this project. All the pages can be seen from home page. Steps of home page design are add the website logo area, add a navigation menu bar, on the left add product classification, add to cart page, contact us page etc. Finally, add a footer area at the bottom. If any customer wants to contact with us, he can contact with us by contact us page providing his information. We have implemented add to cart option in our project. If customer wants to buy
69
any product he should click on add to cart button. Then he should go to add to cart page. Here we have designed checkout form. Customer can order a product by filling up the checkout form providing his all information. Then he must press the submit button to confirm the order. We have also implemented brand filtering where customer can filter their product by clicking their favorite brand. We have also designed the price range bar where customer can choose their product by their budget. When the users can’t find the needed goods or would like to browse information, he can use search option that’s why we have developed search module for the customer to find their needed product easily. That’s all about our project designing development or front end part.

#### 3.5.1.1 Forms Design

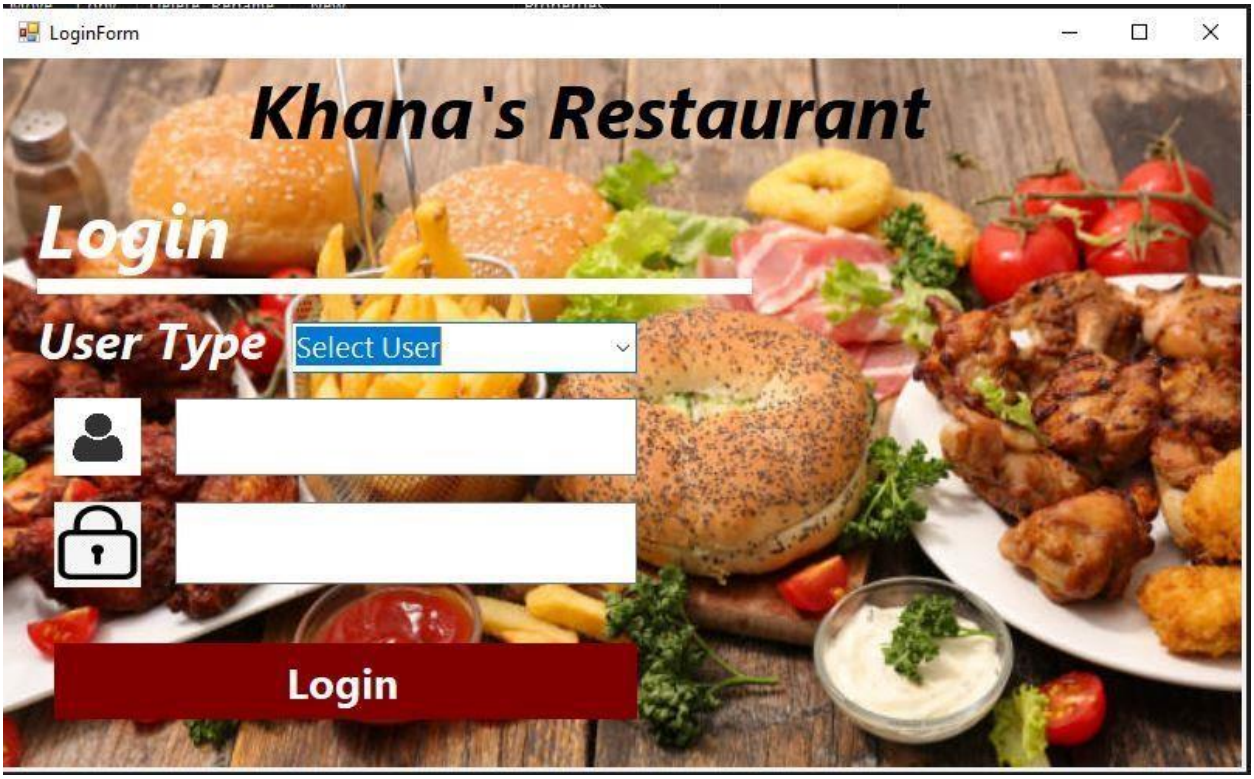



**Figure 3. 5.1.1: Forms Design**

### 3.5.1.2 Item Categories


**Figure 3. 5.1.2: Item Categories**

### 3.5.1.3 Bill page


**Figure 3. 5.1.3: Bill page**

### 3.5.1.4 Print Bill page

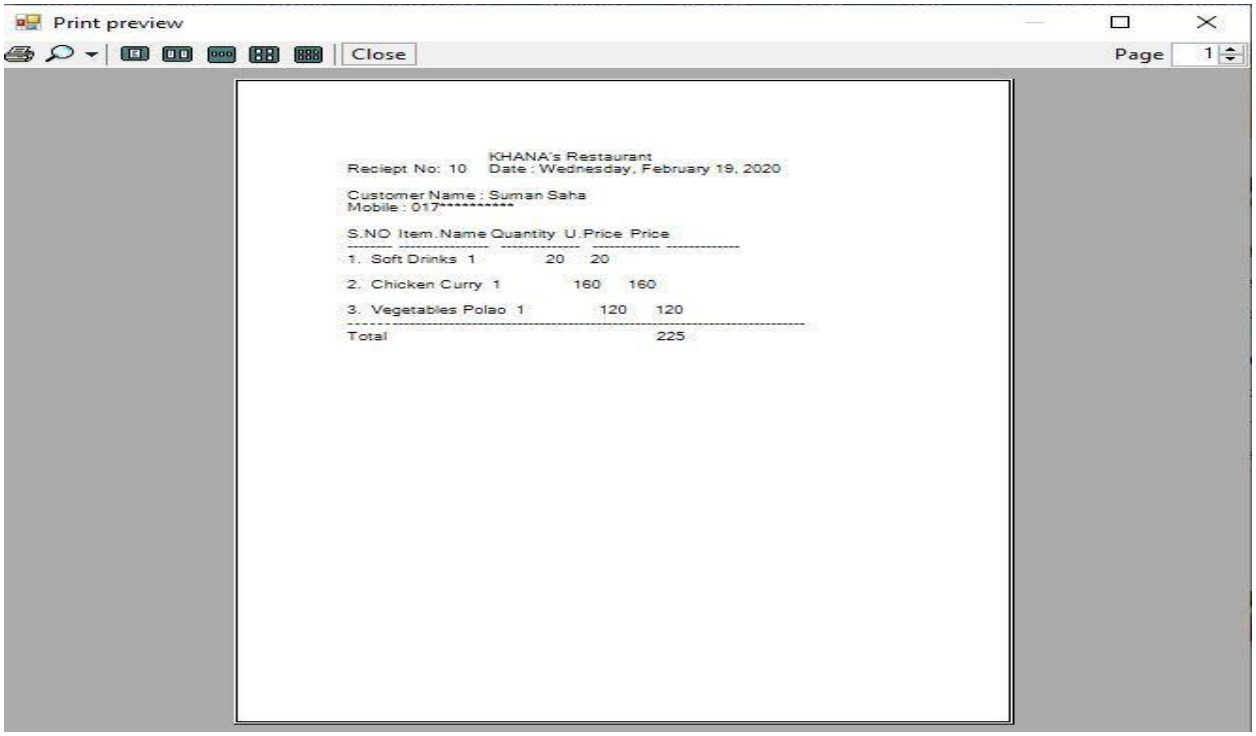



**Figure 3.5.1.4 Print Bill page**

## 3.5.2 Back End

This part provides facility for each store owner to edit and modify information in his own store. Providing validation check for member and store identification, the back end system can securely protect users' proprietary information. In addition, all page views employ session variables to deter manually defined variables by users. Applying user friendly approach, and focusing on web programming inexperience, the user can effortlessly manage his back end information. Inside the back end, users can control and view all store information. Besides that, using content management design, the back end part encompasses with these modules: product management, shop information management, web board management, shopping cart management, member management, promotion management, banner management, plaza management, poll management, currency management and article management. This part is consists of MySQL, XAMPP Server, PHP, IIS etc.

We have handled the database by using MySQL, and also handled server by XAMPP and scripting server and making dynamic and interactive web pages by PHP.
We have developed product management option for an admin so that he can add, delete and update product information. Admin can also add, delete and update the product category. Apart from admin can add, delete and update the brand name of our shop. We have developed order management for the administration. Order management enables administrators to easily see all the order information, change the orders and delete the order. We have implemented customer management so that admin can see all the information of a customer. Moreover, back end part consists of report management. Admin can see the sales report and product report so that admin can know about how much products are sold and also know about the quantity of the product. Our system has also the option for the admin to see the weekly, monthly and yearly report of the sales report by date picker option. Apart from we have developed search option for admin so that he can find information about any product. That's all about the back end development

of our system.

### 3.5.2.1 Database Design

Data layer is also the class which gets the data from the business tier and sends it to the database or gets data from the database and sends it to business tier. This is the actual DBMS access layer or object layer also called the business object. The database backend stories information which can be retrieved by using the MySQL database connectivity. MySQL database connectivity is used to manage the communication between the middle tier and the backend database by issuing complex database queries.

### 3.5.2.2 Database Theory

A database (DB), in the most general sense, is an organized collection of data. More specifically, a database is an electronic system that allows data to be easily accessed,

manipulated and updated. In other words, a database is used by an organization as a method of storing, managing and retrieving information. Modern databases are managed using a database management system (DBMS).

### 3.5.2.3 Relational Database

A relational database is a set of formally described tables from which data can be accessed or reassembled in many different ways without having to reorganize the database tables. The standard user and application programming interface (API) of a relational database is the Structured Query Language (SQL). SQL statements are used both for interactive queries for information from a relational database and for gathering data for reports. MMS used the relational database.

### 3.5.2.4 Structured Query Language (SQL)

The Structured Query Language (SQL) is the set of instructions used to interact with a relational database. Infect, SQL is the only language that most of the database actually understands. Whenever we interact with such a database, the software translates our commands into SQL, statement that the database knows how to intercept. SQL has major three components.

i. Data Manipulation Language (DML)
ii. Data Definition Language (DDL)
iii. Data Control Language (DCL)

### 3.5.2.5 Relational Model of the Used Database (pure database table model)

The relational model used the basic concept of a relation or table. The columns or fields in the table identify the attributes.

#### 3.5.2.5.1 User Table

Here Admin can set a username and password for login processing.

After entering the login table looks like this. It can be changed into anything according to Admin's wish through change password.

| | id | username | password | usertype |
|---|---|---|---|---|
| Edit Copy Delete | 1 | Anam Mubin | 123456 | Manager |
| Edit Copy Delete | 4 | mubin | mubin | Admin |
| Edit Copy Delete | 24 | anam | anam | Manager |
| Edit Copy Delete | 25 | aminul | aminul | Admin |
| Edit Copy Delete | 26 | mehedi | mehedi | Admin |

### 3.5.2.5.2 Customers Table (pure database table model)

Here manager can enter the information of a customer's information to provide. The information are name, phone number and id.

| | receipt_no | cus_name | mobile |
|---|---|---|---|
| Edit Copy Delete | 0 | Mubin | 01517006330 |
| Edit Copy Delete | 2 | iqbal | 018 |
| Edit Copy Delete | 5 | Anam Mubin | 01517006330 |
| Edit Copy Delete | 6 | anam | 91823 |
| Edit Copy Delete | 7 | araf | 015 |
| Edit Copy Delete | 9 | sunny | 01971727971 |

### 3.5.2.5.3 Sales Table (pure database table model)

Here manager upload the every information of the customer's activities. Name, his Purchased items, the amount of bill, is rating for the actual item and date. from this table the total amount of date to date search, total amount through item search, item judgement through rating can be happened.

| | s_id | receipt_no | item_id | item_quantity | date |
|---|---|---|---|---|---|
| Edit Copy Delete | 1 | 3 | 20 | 2 | 2020-02-17 |
| Edit Copy Delete | 2 | 4 | 6 | 2 | 2020-02-17 |
| Edit Copy Delete | 3 | 5 | 13 | 3 | 2020-02-17 |
| Edit Copy Delete | 4 | 5 | 20 | 2 | 2020-02-17 |
| Edit Copy Delete | 5 | 6 | 21 | 2 | 2020-02-17 |
| Edit Copy Delete | 6 | 7 | 20 | 3 | 2020-02-17 |
| Edit Copy Delete | 7 | 7 | 20 | 3 | 2020-02-17 |
| Edit Copy Delete | 8 | 7 | 20 | 3 | 2020-02-17 |
| Edit Copy Delete | 9 | 8 | 7 | 3 | 2020-02-17 |
| Edit Copy Delete | 10 | 8 | 13 | 3 | 2020-02-17 |
| Edit Copy Delete | 11 | 9 | 4 | 3 | 2020-02-17 |
| Edit Copy Delete | 12 | 9 | 23 | 3 | 2020-02-17 |
| Edit Copy Delete | 13 | 9 | 18 | 2 | 2020-02-17 |

### 3.5.2.2 .5.4 Item Table (pure database table model)

Here is all the items name, items price and image are shown.

| | item_id | item_name | item_price | item_type | item_image |
|---|---|---|---|---|---|
| Edit Copy Delete | 2 | Borhani | 50 | Drinks | [BLOB - 5.9 KiB] |
| Edit Copy Delete | 3 | Lassi | 50 | Drinks | [BLOB - 27.5 KiB] |
| Edit Copy Delete | 4 | Soft Drinks | 20 | Drinks | [BLOB - 33 KiB] |
| Edit Copy Delete | 5 | Jhal Fry | 130 | Chicken | [BLOB - 41.5 KiB] |
| Edit Copy Delete | 6 | Chicken Curry | 160 | Chicken | [BLOB - 64 KiB] |
| Edit Copy Delete | 7 | Chicken Tandury | 160 | Chicken | [BLOB - 50.6 KiB] |
| Edit Copy Delete | 8 | Chicken Lolipop | 140 | Chicken | [BLOB - 48.2 KiB] |
| Edit Copy Delete | 9 | Chicken Fry | 80 | Chicken | [BLOB - 22.7 KiB] |
| Edit Copy Delete | 10 | Butter Chicken | 190 | Chicken | [BLOB - 56.2 KiB] |

## 3.6 Conclusions

We have discussed in this chapter about the feasibility study of online shopping system. Apart from the requirement analysis, system design and implementation are described in this chapter. In system design the entity relationship diagram and data flow diagram are described. Moreover, database design, forms design and report design are described in system design. Here, also described the screenshot of database table, form design and report design. In requirement analysis here discussed about the functional and nonfunctional requirement of our system. Moreover, in implementation here discussed how we implemented our system. That's all about the proposed system chapter of our project

# Chapter – 4

# EXPERIMENTAL RESULTS

## 4.1 Introduction:

The purpose of testing is to discover errors. Testing is the process of trying to discover every conceivable fault or weakness in a work product. It provides a way to check the functionality of components, sub-assemblies, assemblies and/or a finished product it is the process of exercising software with the intent of ensuring that the Software system meets its requirements and user expectations and does not fail in an unacceptable manner. There are various types of test. Each test type addresses a specific testing requirement.

This chapter mainly describes the qualitative practice to be used to provide data to examine the issues acknowledged and extend the understanding of consumer value creation in the framework of what and why consumers purchase online. Tentative and descriptive research can provide the multiple outlooks necessary to obtain multiple approvals of online, offline and channel switching behavior during the buying decision process. This typically involves sampling the population, surveying them and using inferential statistics to analyze the responses. The focus of the analysis is to expect the determining factors influencing, in this case, what and why consumers purchase online and offline as well, why they switch from one way to another. The data gathered during the depth interviews were used to identify common questions concerning consumer behavior as it relates to the pure online and offline buying process as well as channel switching from one trade channel to another during the buying choice process. Deepness of the interviews and concentration groups provide an efficient means of spreading and emerging theoretical concepts to improve the ultimate research design. And are used in this research to better appreciate what and why consumers use the Internet to

shop and in specific why they choose one channel over another in general. Below defines how this qualitative phase of the research is directed and classifies which of the research objectives each activity supports for both the depth interviews

Performance testing can involve quantitative tests done in a lab, or occur in the production environment in limited scenarios. Typical parameters include processing speed, data transfer rate, network bandwidth and throughput, workload efficiency and reliability. For example, an organization can measure the response time of a program when a user requests an action or the number of millions of instructions per second (MIPS) at which a mainframe functions.[9]

## 4.2 Result Analysis

In this chapter we have analyzed our system. By analyzing we can see the output of the different types of report such as sales report, product report, all product list.
By analyzing we have understood that out all the modules are working. An admin can handle our system by logged in successfully. Some of the reports are describing as follows.

### 4.2.1 Sales report:

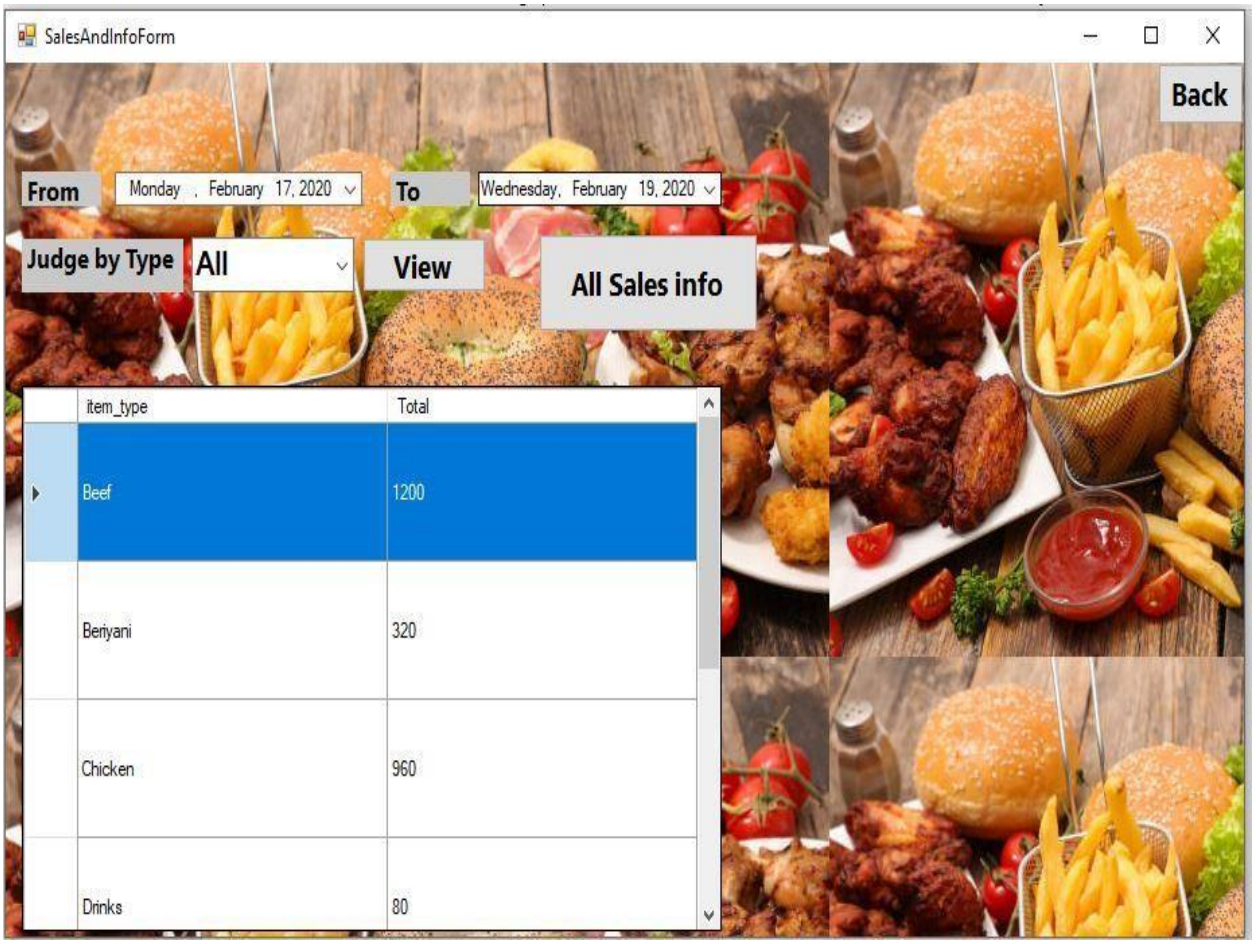



**Figure 4. 1: Sales Report**

This is the sales report of our project. Here we can see the all the sold products. Apart from, here also exists date picker where admin can select any to inquiry about the sold data and also can search the sold products.

### 4.2.2 Food Item list & Report:


**Figure 4. 2: Food Item List & Report**

This is called list & report . Of all products of that restaurant is here and also price. Customers order by that list . And manager just select those form item list.

### 4.2.3 Weekly Sales Report Chart

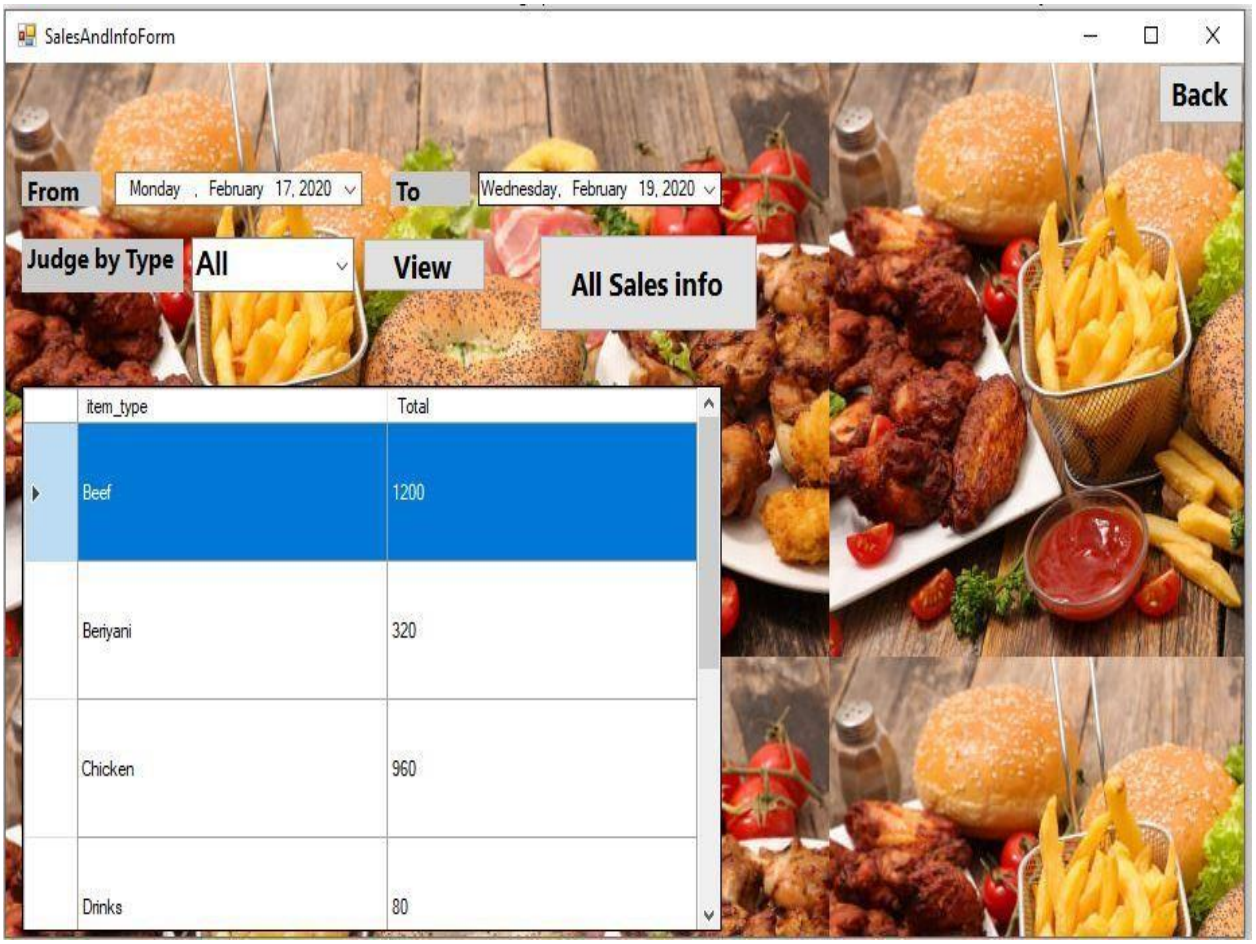



**Figure 4. 3: Weekly Sales Report Chart**

**DashBoard:**

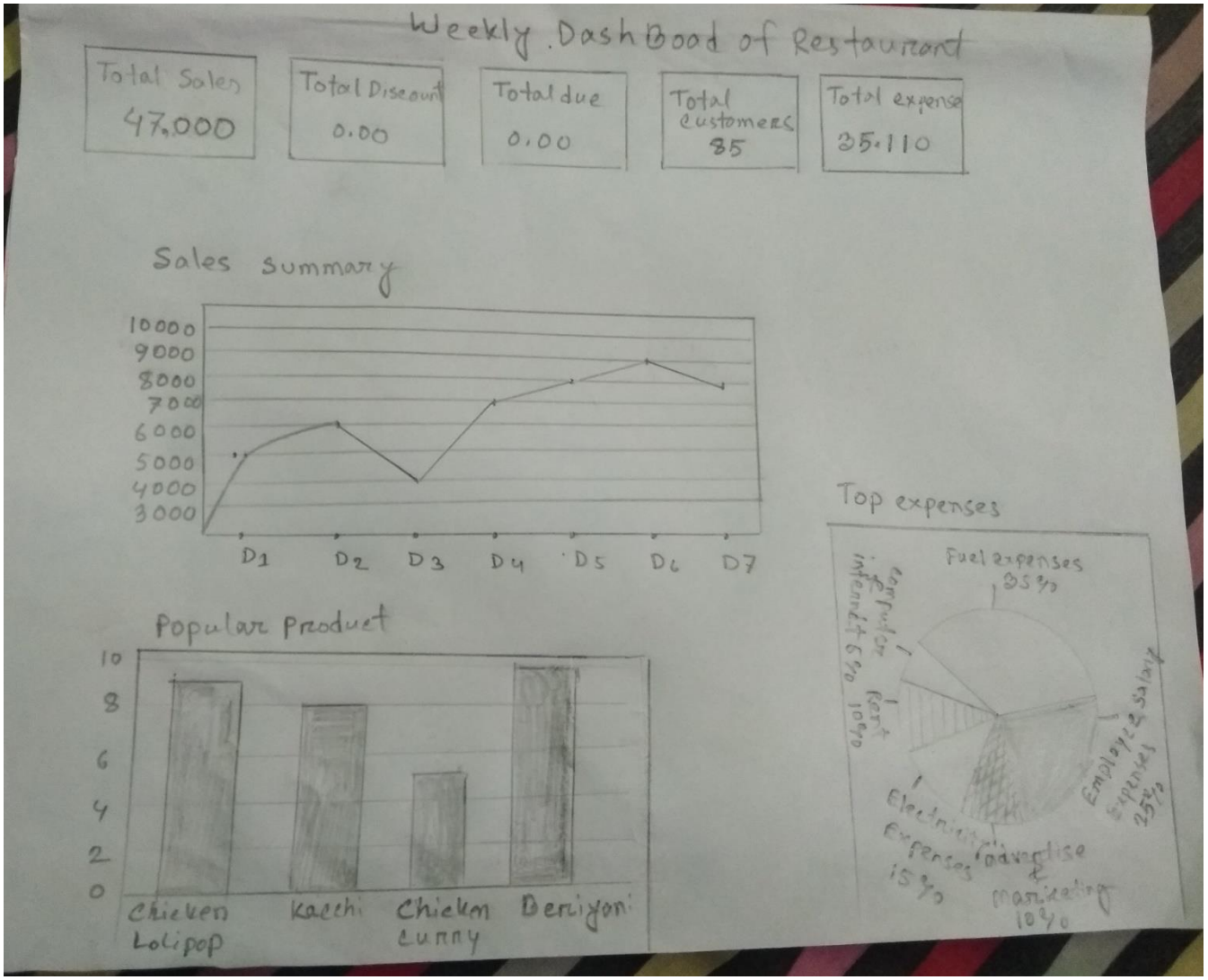



**Figure 4. 4: Weekly Dashboard**

## 4.3 Application:

In real-time, Restaurant management system is very popular system. Every Restaurant what to work in Fast and correctly . Now a day they used a software to maintain their system.
A restaurant management system and method interface is provided. In accordance with the invention, data from various restaurant operations is collected and stored for processing. The data is processed into useful metrics, such as those indicative of various categories of restaurant staffing, efficiency, performance and quality. The useful metrics can be displayed as a human-readable chart, graph or report. The data can be processed in real time, permitting managers to promptly make adjustments and to alert restaurant workers or crew members of deficiencies so that prompt and effective remedial action can be taken to improve restaurant performance. Reports may be generated that provide the performance of restaurants individually and as a combined group.[8]

This is desktop base software . Manager and admin can access that software . Admin has all Authorized for access and Manager worked as admin command. Manager input all sales items and Customers details . And Admin can change food items ,users all of things. Admin also see the sales and product details and he also calculate which week is good and which week is bad. Then he makes decision for restaurant profitable.

## 4.4 Conclusions

In this chapter we have discussed about the experimental results of our project. Here, we have analyzed the sales report and food item list and report.
Moreover we can see the weekly sales report chart, daily sales report chart, monthly sales report chart and yearly sales report chart what we want to see. We have also know about the sales report chart of the different types of chart. Here we have also analyzed that which brands products are sold more. We can know about weekly sales report of the restaurant which food item is sales good ,which is sales bad. Moreover, we have discussed about the application, financial benefits and advantages of online shopping system. That’s all about the experimental results.

# CHAPTER 5

# USER MANUAL

## 5.1 Introduction :

Our system has login form, Item category page, Admin page, Manage Item page, Manage user page, Sales judgment page. At first we make log system for access that software. We have to part of that system one is admin panel and second one is manager panel. Admin can access of all things but manager access only admin require. Admin manage make list of item and price. Manager can make bill and add customers information.

## 5.2System Requirements

### 5.2.1Hardware Requirements

The most common set of requirements defined by any operating system or software application is the physical computer resources, also known as hardware. A hardware requirements list is often accompanied by a hardware compatibility list (HCL), especially in case of operating systems. An HCL lists tested, compatibility and sometimes incompatible hardware devices for a particular operating system or application. The following sub-sections discuss the various aspects of hardware requirements.

### Hardware Requirements for Server

| | |
|---|---|
| Processor | : Intel dual Core, Core i3 |
| Ram | : 1 GB |
| Hard Disk | : 80 GB |
| CPU Speed | : 2.6 GHz |

Monitor : EGA / SVGA (display), 800 × 600 24 bits True Color.

### Hardware Requirements for Client

Processor : Pentium 4, Intel dual Core, Core i3

Ram : 512 GB

Hard Disk : 40 GB

CPU Speed : 2.6 GHz

Monitor : EGA / SVGA (display), 800 × 600 24 bits True Color.

Mobile Devices : All the mobile devices & Tabs

## 5.2.2 Software Requirements

Software Requirements deal with defining software resource requirements and pre-requisites that need to be installed on a computer to provide optimal functioning of an application. These requirements or pre-requisites are generally not included in the software installation package and need to be installed separately before the software is installed.

### Software Requirements for Server

Operating System : Windows 7/ XP/8/10

Front End : C,C#

Framework : .Net Framework

Server Side Script : PHP

Database : MySQL

Dependency Manager : Composer (If local server using)

Local server setup package : XAMPP, WAMP or other apache, MySQL servers (If local server using)

## Software Requirements for Client

| | | |
|---|---|---|
| Operating System | : | Windows 7/ XP/8/10 |
| Browsers | : | Firefox, Opera Mini, Chrome (All the browsers) |

## USER INTERFACE

### 5.3.1 Login Page:

This is the login page. Manager or Admin can login their account using their username and password. System records the username and identifies the role then display the contents according logged user's role. Admin will get access of all pages after successful login but Manager has limitation over contents.

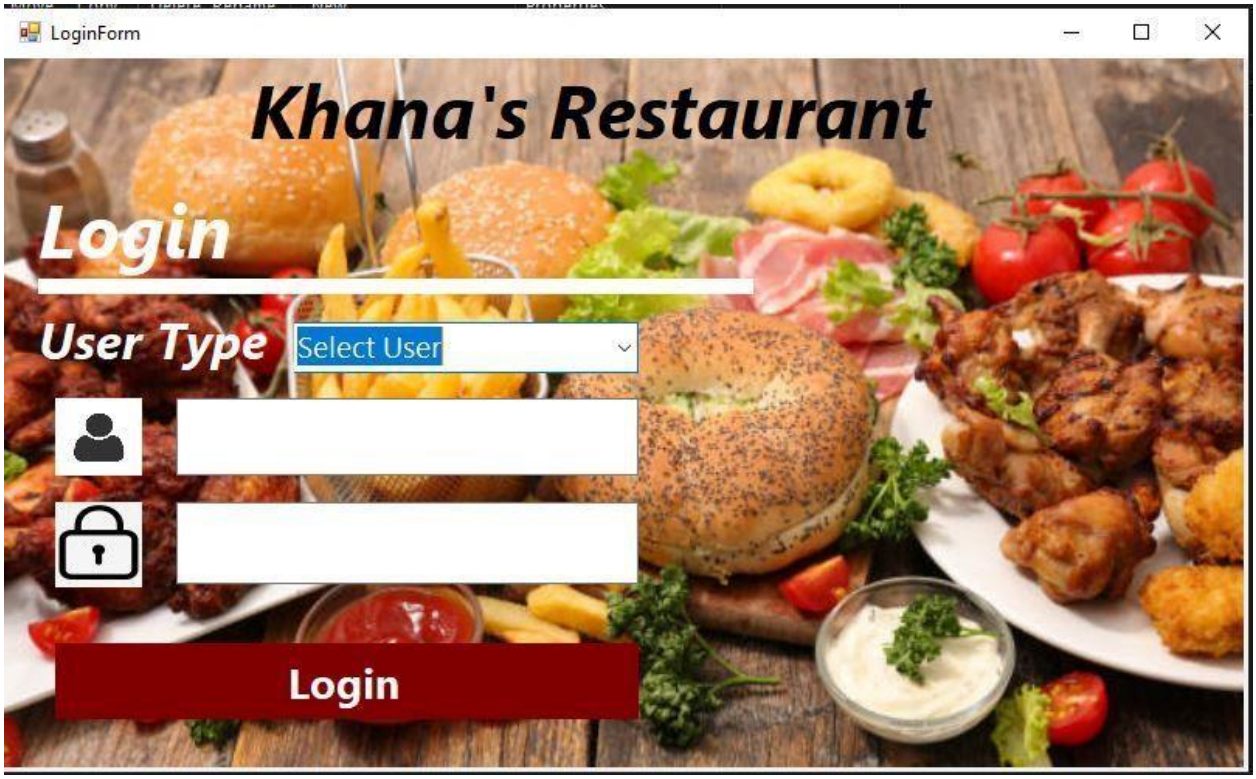



**Figure: 5.3.1 Login Page**



### 5.3.2 Item Category Page

This is item list which can only access the manager. Of all food item list is here.

Manager can see all item and he select the as customer demand.


**Figure:5.3.2 Item Category and list Page**

**5.3.3 Bill Page** Making Bill Page. When customer select food item , then manager input customer information and also input customer selected food item and price Cashier or the Manager can make bill.


**Figure:5.3.3 .1Bill page**

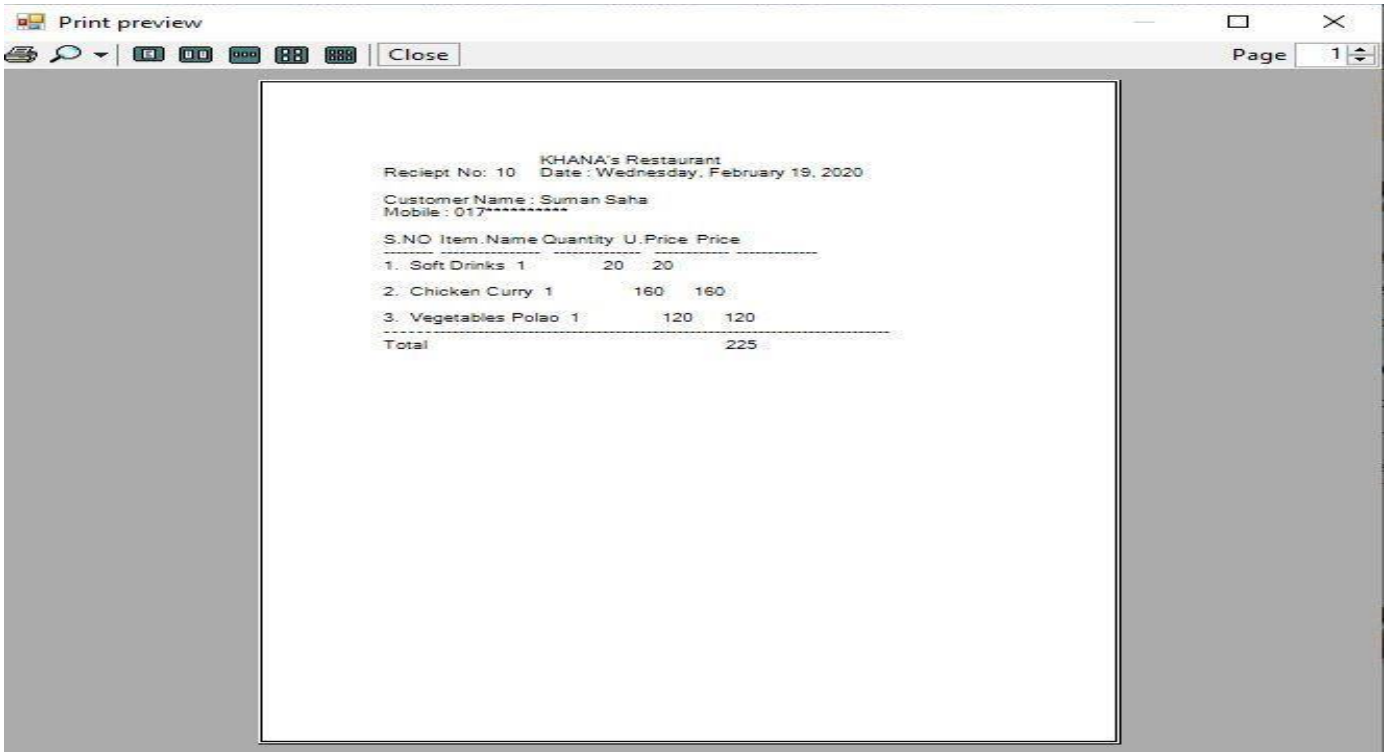



**Figure:5.3.3.2 Pdf of Bill page**

### 5.3.4 Admin Page

Admin Can Select and access in these pages from admin pages. He can access Sales and Info. He can see of all sales information. He can select users who can use this software. He can manage items . He can add item or delete item from item list.

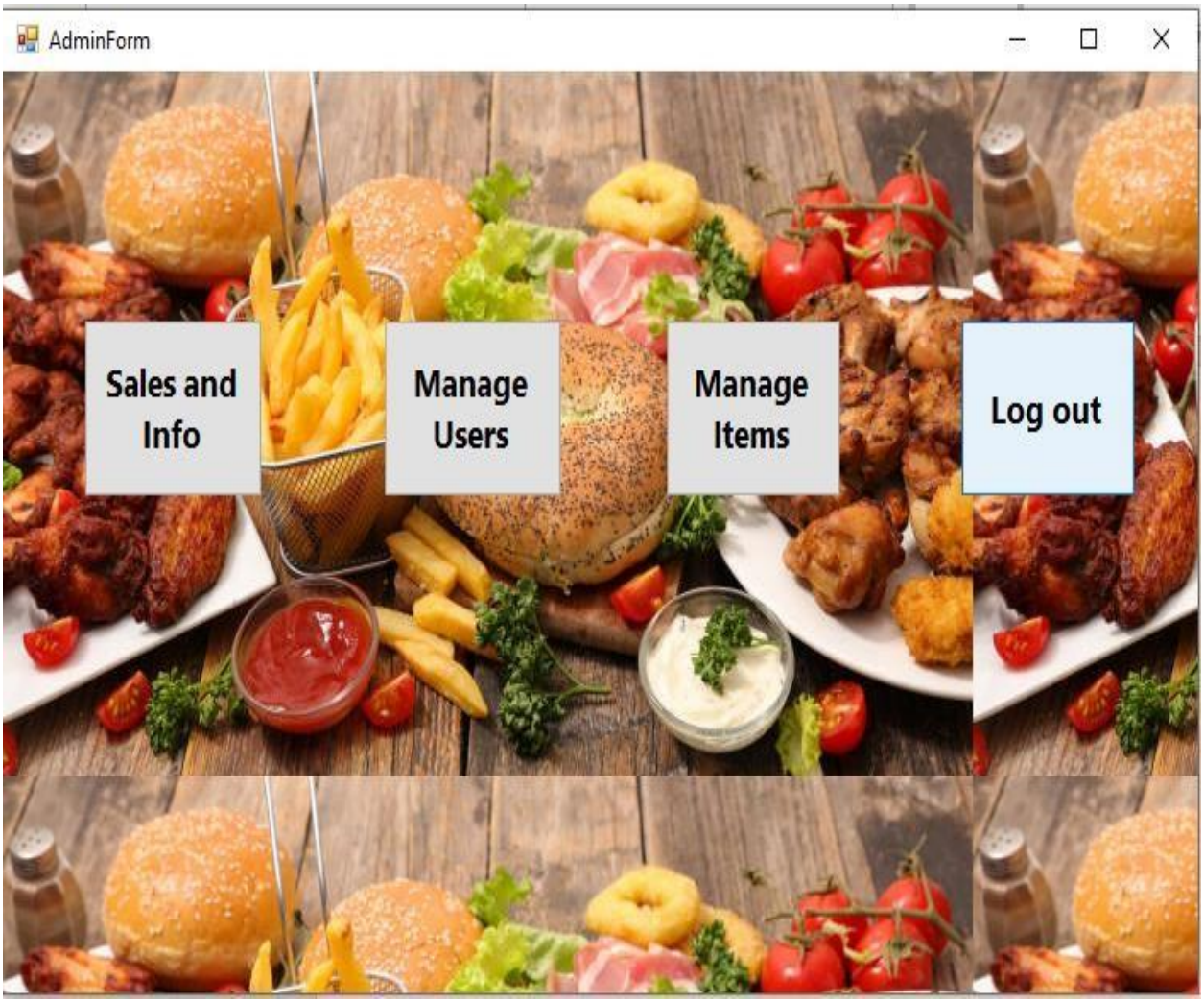



**Figure: 5.3.4 Admin Page**

### 5.3.5 Manage Items Page

From this page, Admin can insert new items, update and remove existing items.


**Figure: 5.3.5 Manage Items Page**

### 5.3.6 Manage user Page

Here the admin can give and remove access users. He has authorized to delete any users or give permission any users to access that software.

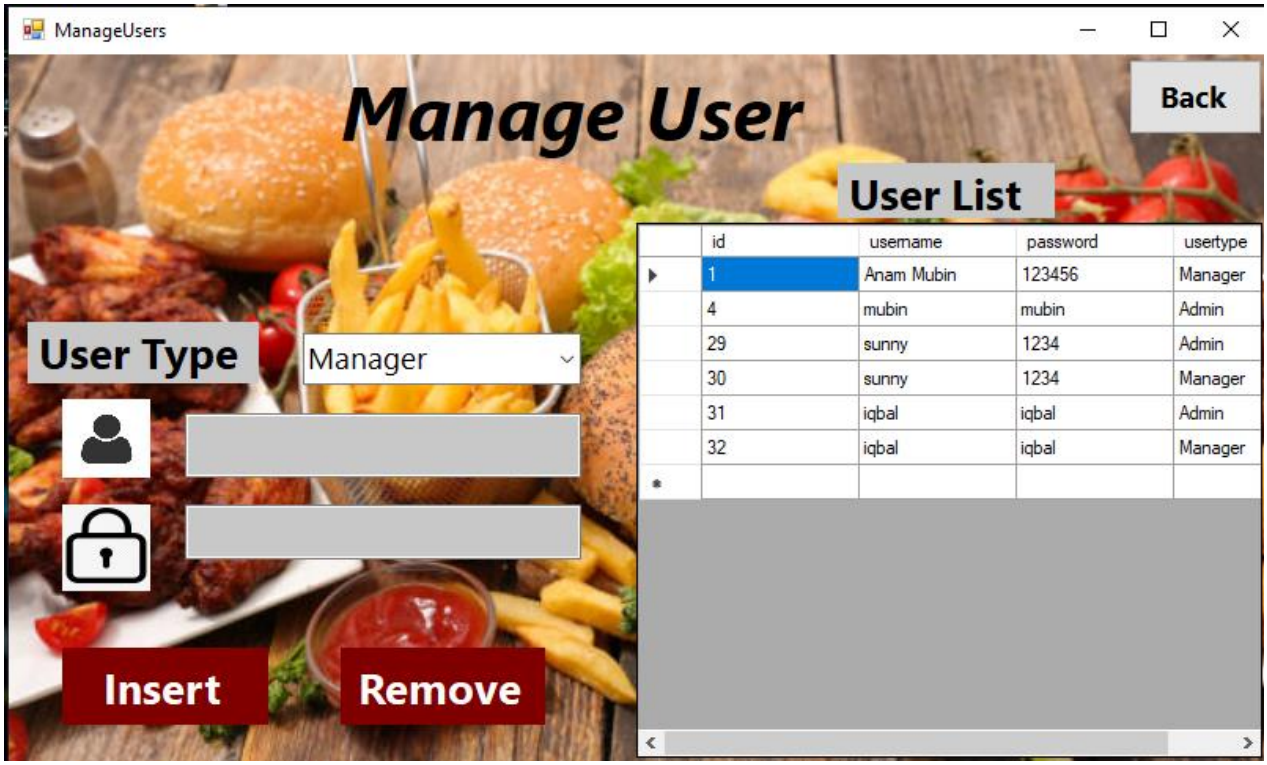



**Figure: 5.3.6 Manage Users Page**

## 5.3.7 Sales Judge Page

This is the sales information page. Day to day transactions , amount of total sales are given there. Here Admin see of all sales information in monthly or daily or weekly.

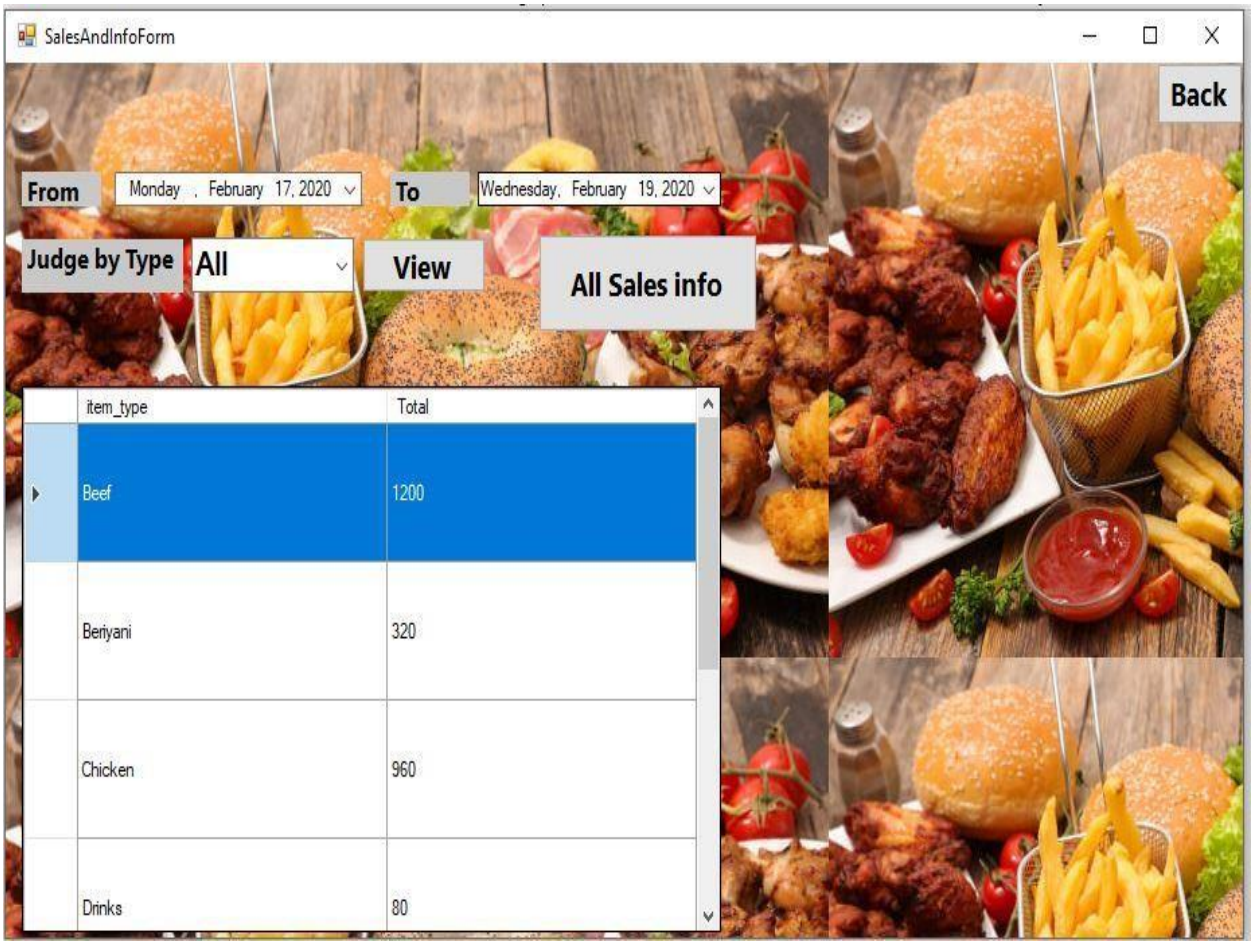



**Figure: 5.2.7 Sales Information Page**

## 5.4 Conclusions

In this chapter we have discussed about the system requirements. From there anyone can know about the hardware requirements and software requirements. Then we have putted the screenshot of our projects interface and described about the functionalities of our screenshotted pages. Apart from here we can know about the uses of our system. Our interface is very user interactive. So users can use it very easily and order any product without any hesitation

# CHAPTER 6
# CONCLUSION

## 6.1 Introduction

To conclude the description about the project: The project, developed using C# and My SQL is based on the requirement specification of the user and the analysis of the existing system, with flexibility for future enhancement. The expanded functionality of today's software requires an appropriate approach towards software development. This restaurant management software is designed for people who want to manage various activities in the restaurant. For the past few years the number of educational institutions is increasing rapidly. And hence there is a lot of strain on the person who are running the restaurant and software's are not usually used in this context. [10]

## 6.2 Limitations

There are some drawbacks and limitations in this software as it is a beta release and under future development process.

i. Need to install first on computer before using.

ii. Platform is not independent. So, it may not run on different operating systems like MacOS, Ubuntu, Linux.

iii. Some minor bugs exist

iv. Limited features, need to explore.

## 6.3 Future Goals

The project has a very fast scope in future. The project can be implemented on intranet in future. Project can be updated in near future as and when requirement for the same arises, as it is very flexible in terms of expansion. With the proposed software **Restaurant Management System** is ready and fully functional for the client is now able to manage and hence run the

entire work in a much better, accurate and error free manner. The following are the future scope for the project.

**i.** Advance records filter options.

**ii.** Records export in different formats like csv

# REFFERENCES


1. Rouse, M. (2018). Relational Database. [Blog] Search Data Management. Available at: https://searchdatamanagement.techtarget.com/definition/relational-database [Accessed 13 Sep. 2018].
2. Nattyware.com. (1999). Pixie / Nattyware. [online] Available at: http://www.nattyware.com/pixie.php [Accessed 13 Sep. 2018].
3. En.wikipedia.org. (2018). Microsoft Visual Studio. [online] Available at: https://en.wikipedia.org/wiki/Microsoft_Visual_Studio [Accessed 13 Sep. 2018]..
4. En.wikipedia.org. (2018). MySQL. [online] Available at: https://en.wikipedia.org/wiki/MySQL [Accessed 13 Sep. 2018].
5. https://zenkit.com/en/blog/agile-methodology-an-overview/
6. https://www.visual-paradigm.com/guide/data-flow-diagram/what-is-data-flow-diagram/
7. http://www.freepatentsonline.com/8620753.html https://searchsoftwarequality.techtarget.com/definition/performance-testing
8. https://www.freestudentprojects.com/asp-net-projects/asp-net-projects-asp-net-projects/restaurant-management-system/

# APPENDICES

## Tools

- SQL Server Management.
- Xampp.
- Sublime Text 3.
- Creately online tool.
- Brackets editor.