

PURBANCHAL UNIVERSITY



DEPARTMENT OF COMPUTER ENGINEERING

**KHWOPA ENGINEERING COLLEGE
LIBALI-08, BHAKTAPUR**

FINAL PROJECT REPORT

ON

CANTEEN MANAGEMENT SYSTEM

Project work submitted in partial fulfillment of requirements for the award of the degree of
Bachelor of Engineering in Computer Engineering (Third Semester)

SUBMITTED BY

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DEPARTMENT OF COMPUTER ENGINEERING

KHWOPA ENGINEERING COLLEGE

LIBALI, BHAKTAPUR

CERTIFICATE

This is to certify that the project entitled “Canteen Management System” submitted by Ms. Anisha Karki, Ms. Roji Prajapati, Ms. Shreeya Shrestha, Ms. Sumina Awa in a partial fulfillment of the requirements for the award of the Degree of Bachelor Engineering in a Computer Engineering of Purbanchal University, is a bona fide work to the best of our knowledge and may be placed before the examination board for their consideration.

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ACKNOWLEDGEMENT

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And big thanks to those who have directly or indirectly guided us during the completion of our project.

ABSTRACT

Canteen is a place where people gather to enjoy their lunch; meals etc. and spend time together. This report details the development of the Canteen Management System that is written in the C and C++ programming language. The aim of this management system is to computerized canteen system. In addition, the report details the implementation of a complex algorithm used in the development of this system.

Our project Canteen Management system that is a reflection of our own college's canteen includes menu displaying, billing system, financial report generation, food ordering. It also includes customer information. The Canteen Management System can be accessed by both user and admin. It is accessed by administration through a login system. The information can be retrieved easily and also a sales report can be easily generated. Finally, the report summarizes the overall achievements of the application development.

Keywords: *billing, ordering, financial report*

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CHAPTER 1

INTRODUCTION

1.1 Background

The traditional way of managing college canteen is quite chaotic, erroneous, and at the same time, sluggish. In the long-run, such management practices, even if they are restricted to the cafeteria, can foster an impression of the college being negligent and insincere in its operations. It would be fair to say that transparency is the most important aspect of conducting business and no one would like to work with an organization that doesn't seem trustworthy. An automated or digital canteen management system provides you with the power of tracking every transaction to its source, maintaining flawless records, capping unauthorized usage, and advanced management features to make the experience of dining in the canteen better. [1]

A Canteen Management System is a computerized system that helps to manage the various operations of a canteen. It can be used to manage customers and orders, payments, and process invoice. Canteen management systems can be applied in both small and large canteens.

The goal of the canteen management system is to ensure that the food is served in convenient way to customers every day. It eliminates the need for manual entries and provides a more accurate and timely record of the food consumption. Before, these records were generated using paper-based methods which were very time-consuming and prone to errors.

A Canteen Management System is a tool that helps a manager to process the activities and transactions of a canteen with high accuracy. It is designed to automate the process of managing and running the canteen.

1.2 Motivation

The motivation behind this was to understand the management system of canteen better. In the modern world that we live in, technology has undeniably become integrated into every aspect of our life. So, the traditional way of waiting on a line in canteen has been replaced with digital way of ordering and billing which has turned out to be convenient and easy. Also the traditional system has the financial report manually done but through this project, we can generate the report digitally. This project will enable us to challenge the knowledge we have gained at our class and provide us an opportunity to strengthen them, and learn something new on the way.

1.3 Statement of Problem

In the modern era where time management has become a challenge for everyone, waiting in a long queue in a canteen may pose various problems. The concept of waiting in a line itself is flawed. This makes the management sloppy, tedious and inefficient. Thus, the existing system of Canteen is in desperate need of an upgrade. As such, the idea of having an intelligent and efficient Canteen Management system is very essential to provide a more effective service to its users, save time, make the work less tedious and increase efficiency.

1.4 Objectives

This project will serve the purpose:

- To computerize the canteen management system.
 - Authorization process to get access for admin.
 - Editing the menu items by admin.
 - Easy billing and order placement with invoice generation.
 - Generation of financial report which gets updated with the time when the order is placed.

1.5 Scope and Applications

- It is a convenient method for ordering food and invoice generation.
- The customers do not have to wait in queue for a long time.
- It has efficient log in system for the administration.
- Generation of the financial report.
- Easy modification of the product details by the admin.

CHAPTER 2

LITERATURE REVIEW

In the modern world that we live in, technology has undeniably become integrated into every aspect of our life. It is therefore highly important to sustain, spread and integrate this technological involvement in our lives due to its countless benefits. Taking into mind that people still love to eat at their convenience and do not like to wait in queues, and also given the fact that the pandemic has greatly reduced the available eating options, the canteen management system is necessary to help canteen get back on their feet and continue pushing orders out. This system helps to provide custom features for the clients [2]

Canteen System all started with a moldy peanut back in the 1920s in Chicago. Nathaniel Leverone was waiting for the train when he went over to the coin operated vending machine. The peanut machine dispensed moldy peanuts and the candy machine didn't even work! Since vending machines were so unreliable and subject to scams, Leverone decided to start the Chicago Automatic Canteen Corporation. Leverone sought out franchise operators and business spread through Chicago. [3]

Seeing on the past projects made by some programmers, what we found was, there was no project that generated financial report. Our project has included this which helps in knowing the state of the sales that the canteen is making.

CHAPTER 3

PROJECT MANAGEMENT

3.1 Team Members

This project is the joint effort of:

1. Anisha Karki (770302)
2. Roji Prajapati (770333)
3. Shreeya Shrestha (770342)
4. Sumina Awa (770345)

3.2 Work Breakdown Planning

S. N	Week Job Description	Duration	1st week	2nd week	3rd week	4th week	5th week	6th week
1.	Problem Identification	4days						
2.	Analysis	4days						
3.	Design	6days						
4.	Coding	21days						
5.	Implementation & testing	6days						
6.	Documentation	42days						

CHAPTER 4

METHODOLOGY

4.1 Background

The traditional canteen system is not as efficient as it should be in the digital age. Running a business is very hectic, and having a system that can help ease the burden on the employees is very important. There are so many tasks that canteen has to perform, such as managing the menu, displaying the customer's information, generating bills and making payments. This is why we have created a module that will help them automate these processes.

The customer encounters the canteen's menu directly on opening the system and can order the quantity of food they desire. Customers have the choice to place more orders; otherwise, the invoice is shown. They can visit the menu as required before placing the order. Finally, when the order is completed, the customer gets the invoice, and the payment is taken with a thankyou message at the end. While if the system is being used by an admin, they must be authorized to use it which is checked through the effective log in system and the authority for modification of the product and customer details are provided. Also the admin can watch the financial report generation made till date.

4.2 Block Diagram

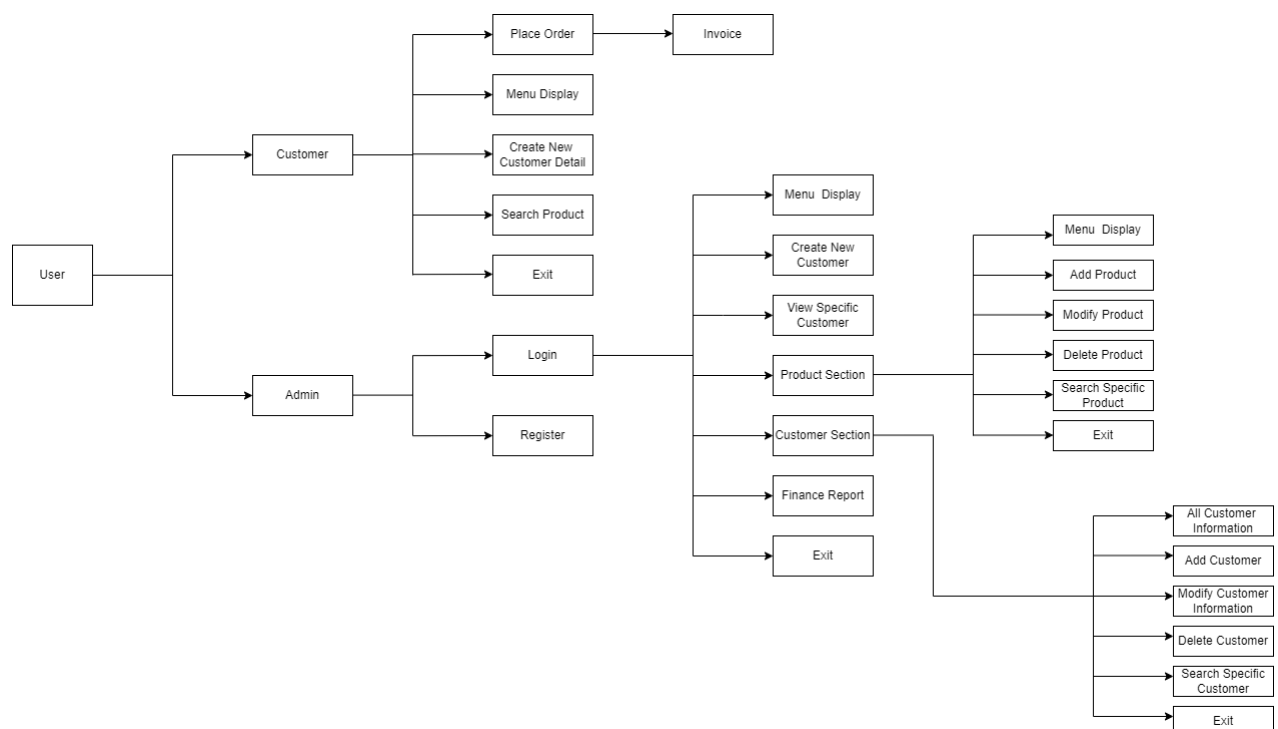


Fig. 4.2: Block Diagram of Canteen Management System

4.3 Algorithm

Our project includes the following algorithm:

Step 1: Start

Step 2: Initialize all the variables

Step 3: If user is admin, go to step 4 else go to step 8

Step 4: Display login/register

Step 5: If the user selects Register then

- if the username is already occupied by others, print username not available and go to step 4

- else display registration successful and go to step 4 for log in process

Step 6: If the user selects Login, open the admin home page if the username and password is correct i.e. go to step 7

- else print unauthorized and go to step 4

Step 7: Input the valid option from admin home page and perform the following operation according to the option inputted and then go to step 6

- if admin selects the menu, display menu

- else if admin selects create new customer, new customer information are inputted and stored in the customer file

- else if admin selects view specific customer, customer id is inputted and searched

- else if admin selects customer details, access the option for modifying customer details, displaying all customer details

- else if admin selects product information, access the option to edit menu, add menu, display menu

- else if admin select the financial report, generate the sales report

- else if admin selects exit go to step 9

Step 8: Input the valid option from the user home page and perform the following operations and then again go to step 8

- if user select the order placement option, take order and generate the invoice

- else if user select menu option, display menu

- else if user selects create new customer, details are inputted and a new id is created and submitted

- else if user selects search product, the product id is inputted from user and the searched product is displayed.

- else if user select exit go to step 9

Step 9: Stop

4.4 Flowchart

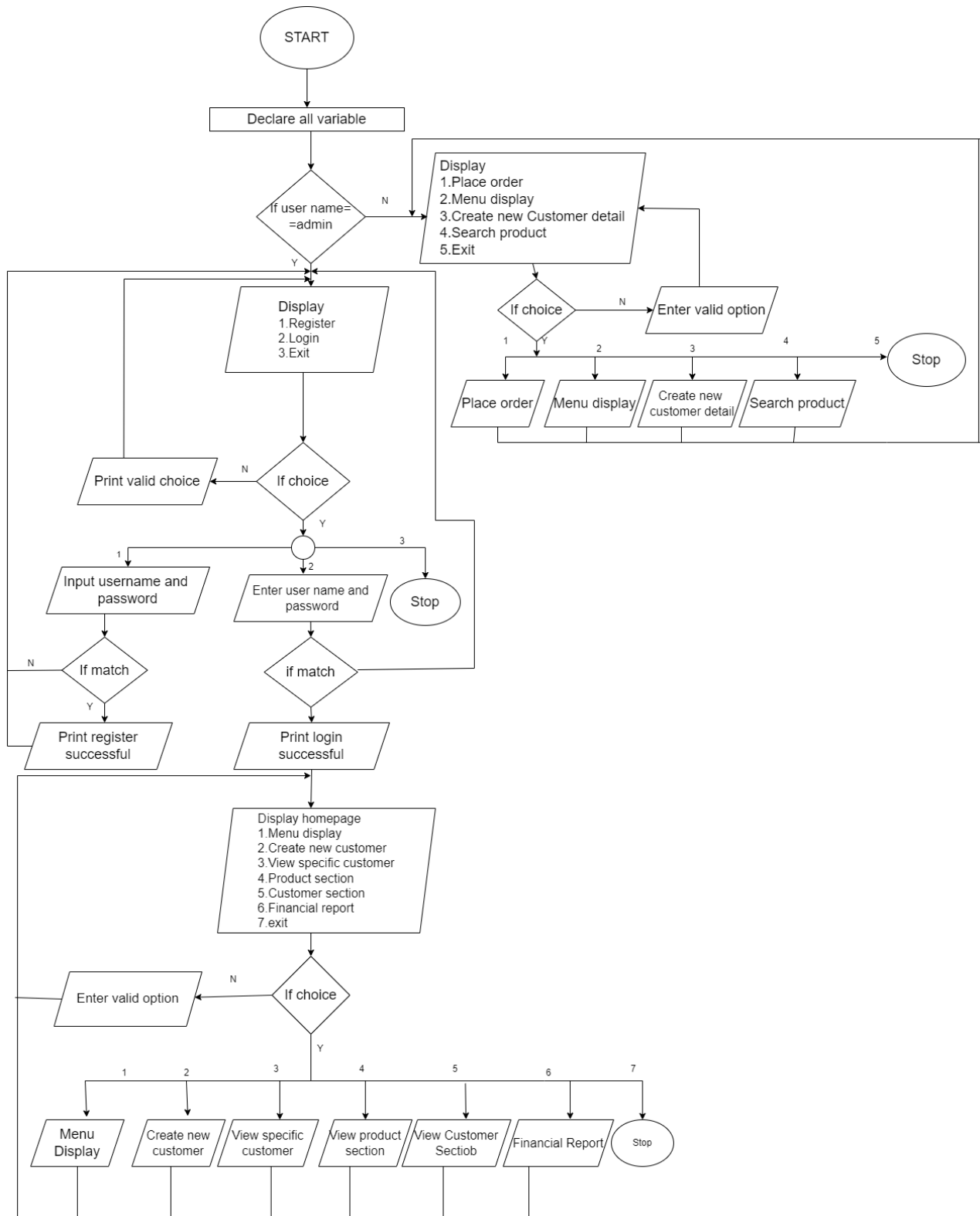


Fig 4.4: Flowchart of Canteen Management System

4.5 Context Diagram

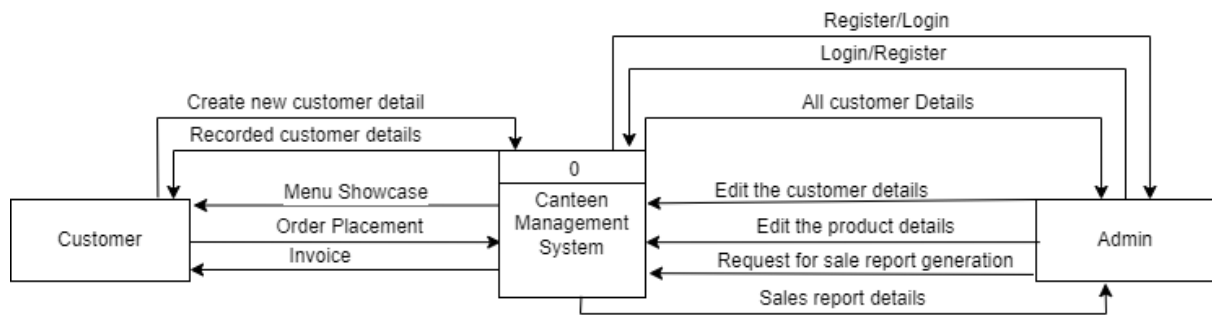


Fig 4.5: Context Diagram of Canteen Management System

4.6 Data Flow Diagram

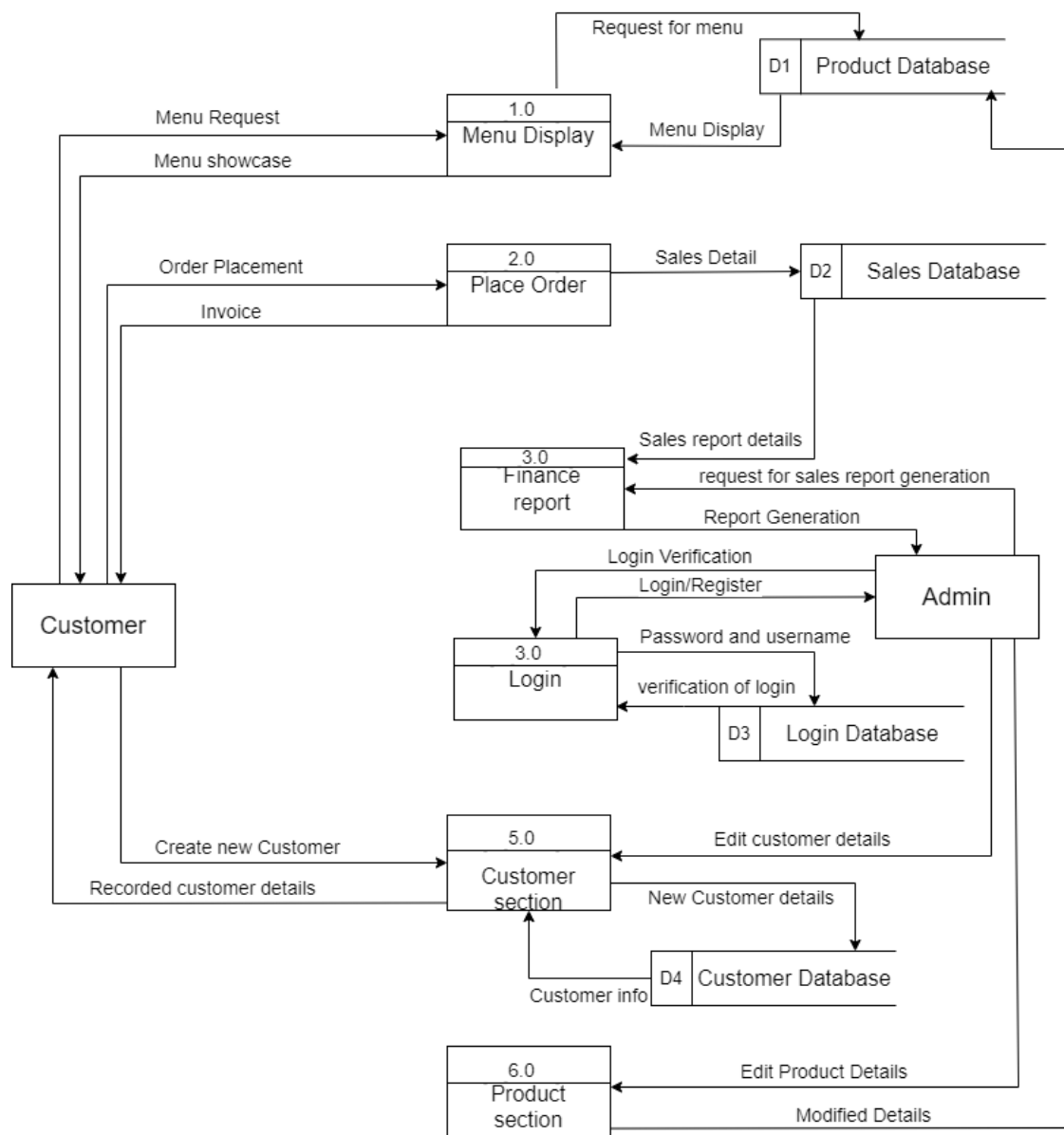


Fig 4.6: Data flow Diagram of Canteen Management System

4.7 Tools & Platforms

Software: Dev C++

Platform: Windows

CHAPTER 5

RESULT AND DISCUSSION

5.1 Result and Discussion

We have developed a Canteen Management System. It provides an efficient login/registration system for administration with customer's profile and details. This application helps in ordering food, managing customer information, managing and displaying detailed menu, providing invoice after placing order and providing reports on the sales till date. The files used in the program are customer files for storing customer information, product files for storing the menu details, login file to store the username and password for authentication process and sales files to store the order places with the amount till date. The text formats used are .csv and .txt. Some of the snapshots of the work completed are below:

The program starts with welcome section.



Fig 5.1.1: Welcome Page

When admin section is selected, a register/log in system is opened.

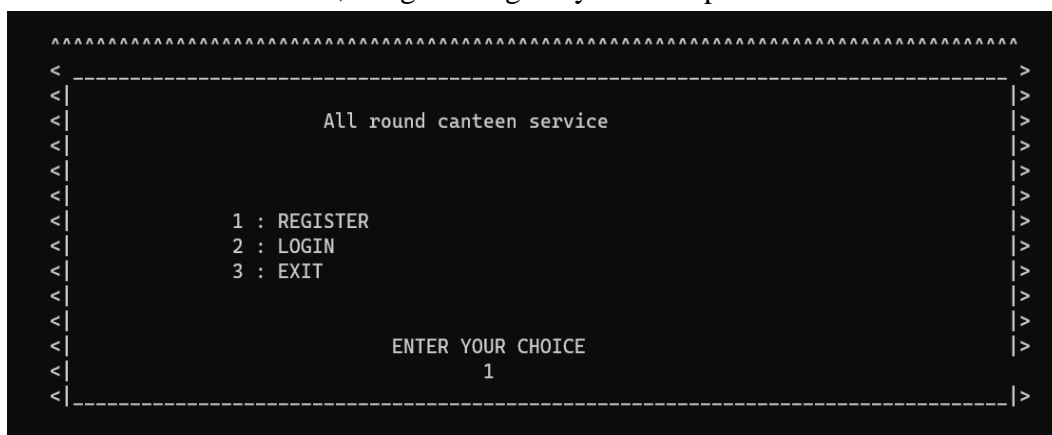


Fig 5.1.2: Registration / Login

If the login is successful then the home page is opened.

[illegible]

Fig 5.1.3: Admin Homepage

On clicking the option 1, menu is displayed

PRODUCTS DETAILS				
PROD.NO	NAME	PRICE	QUANTITY	DISCOUNT
1	Roti	Rs.40	2	7%
2	Paratha	Rs.60	2	10%
3	Samosha	Rs.20	1	3%
4	Tarakari	Rs.30	1	5%
5	pakoda	Rs.40	1	4%
6	haluwa	Rs.30	1	9%
7	chatpat	Rs.50	1	2%

Fig 5.1.4: Menu Display

On clicking the option for product section, the additional processes as modification can be made on the product side.

```

^-----^
^                                         ^
^                                         ^
^                                     MENU SECTION                                     ^
^                                     Please Click the option below                     ^
^                                                                                       ^
^    1 : MENU DISPLAY                                                                ^
^    2 : ADD PRODUCT                                                                  ^
^    3 : MODIFY PRODUCT                                                               ^
^    4 : DELETE PRODUCT                                                              ^
^    5 : SEARCH SPECIFIC PRODUCT BY PRODUCT NUMBER                                ^
^    6 : RETURN TO HOME PAGE                                                         ^
^    7 : Exit                                                                       ^
^                                         ^
^                                         ^
^-----^

```

Fig 5.1.5: Product Section

Similarly, on the customer section, the additional modification on the customer can be made.

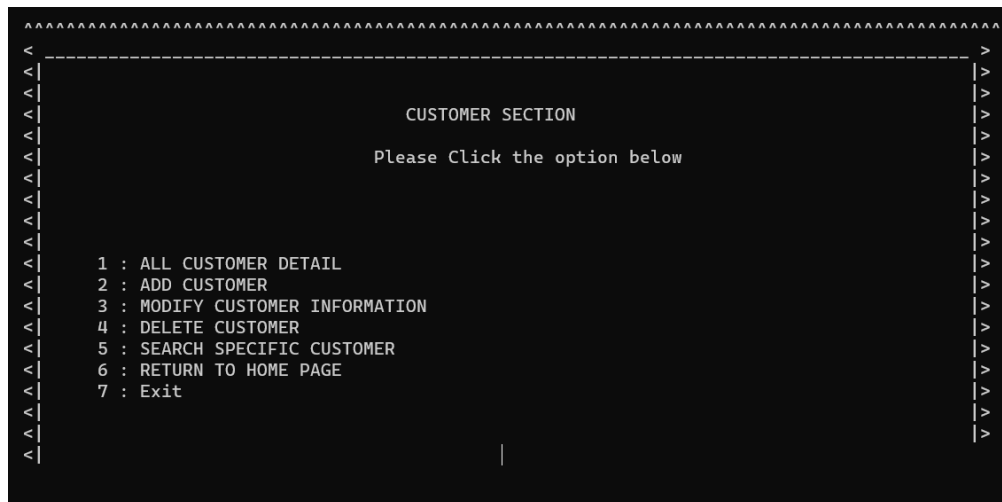


Fig 5.1.6: Customer Section

On the financial report generation, the sales report till date is published.

Time	PR.No.	NAME	Qty	Price	Amount	Amount - discount
Wed Jan 25 18:14:16 2023	2	Paratha	2	Rs.60	Rs.120	Rs.110
Wed Jan 25 18:15:49 2023	1	Roti	2	Rs.40	Rs.80	Rs.73
Wed Jan 25 18:20:50 2023	9	chatpat	1	Rs.50	Rs.50	Rs.48
Wed Jan 25 18:20:50 2023	6	haluwa	1	Rs.30	Rs.30	Rs.21
Fri Jan 27 21:43:22 2023	5	pakoda	3	Rs.40	Rs.120	Rs.116
Wed Feb 08 20:45:14 2023	4	Tarakari	2	Rs.30	Rs.60	Rs.55
Wed Feb 08 20:47:45 2023	5	pakoda	1	Rs.40	Rs.40	Rs.36
Wed Feb 08 20:47:45 2023	4	Tarakari	1	Rs.30	Rs.30	Rs.25
Sun Feb 12 17:37:31 2023	5	pakoda	2	Rs.40	Rs.80	Rs.76
Sun Feb 12 20:36:17 2023	2	Paratha	5	Rs.60	Rs.300	Rs.290
Sun Feb 12 22:08:17 2023	4	Tarakari	1	Rs.30	Rs.30	Rs.25
Sun Feb 12 22:10:04 2023	7	chatpat	1	Rs.50	Rs.50	Rs.48
Sun Feb 12 22:10:04 2023	4	Tarakari	2	Rs.30	Rs.60	Rs.55

Fig 5.1.7: Financial Report

If the login user is a customer, then without the login system the homepage is displayed.

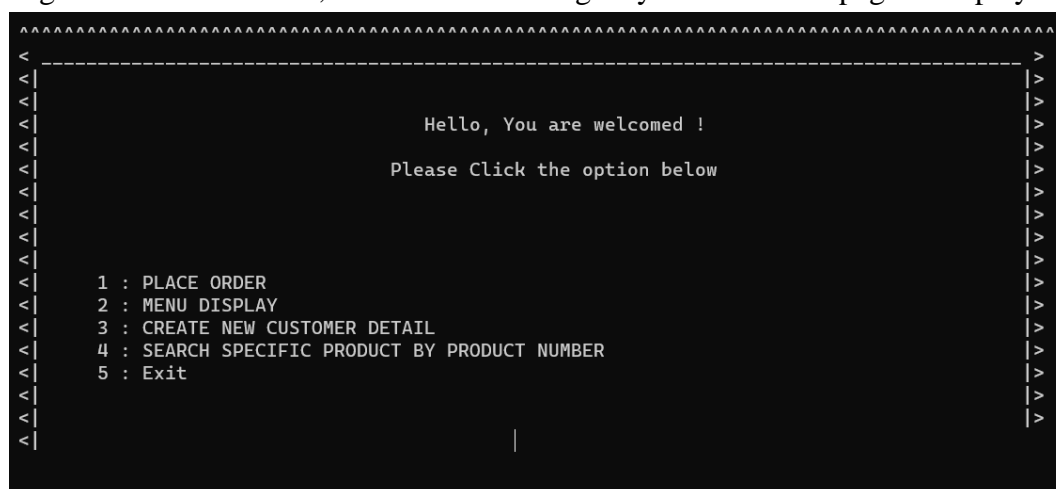


Fig 5.1.8: User Homepage

On placing the order, user is asked if the menu is to be displayed or not, also the user can order more if desire.

```

<----->
<----- PLACE YOUR ORDER ----->
<----->
ENTER THE PRODUCT NO: 4

AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
<----->
PRODUCT NO      : 4
NAME OF PRODUCT : Tarakari
PRODUCT PRICE   : 30
QUANTITY        : 1
DISCOUNT%      : 5%
<----->
Enter the Quantity to Purchase:2
Do you want purchase more ? (Yes[ y or Y ] or NO [n or N])n

```

Fig 5.1.9: Order Placement

Then finally the invoice is generated.

```

<----->
<----- INVOICE ----->
<----->
PR.No.  NAME    Qty    Price    Amount    Amount - discount
-----
  4  Tarakari    2      Rs.30    Rs.60      Rs.55

<----->
<----- TOTAL AMOUNT : Rs.55 ----->
<----->
<----- PAYMENT SUMMARY ----->
<----->
Enter CASH value : Rs.60
Change to be returned : Rs.5
<----->
<----- HAVE A NICE DAY ! ----->
<----->

```

Fig 5.1.10: Invoice

5.2 Future Enhancement

Although we had tried to include most of the features in our project, enhancement can be done. Some of the works that can be done are

- Production of the financial report generation on the specific period of time

The codes implemented in the application have been well organized and also includes comments everywhere. Therefore, we believe that the application can be developed more.

CHAPTER 6

CONCLUSION

We have created a Canteen Management System. In order to create a program, we used the concept of class, files, structure etc. Simply this program takes the order from user and generated the bill on the user side while has permission for modification of menu, customer details and add or remove products as well generation of the financial report at the admin side.

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