CHAPTER 1
INTRODUCTION

In the present time, the medical stores are looking for the services that are accurate and reliable for providing services to the customers and workers. Every store is making efforts to computerize their activities for providing better services to the customers. The medical store management system is the system used for medicine stock inventory in the medical stores. This system enables the manager of the store to record and manage all the activities of the medical shop.

1.1 Background

A medical store management system is a software application designed to streamline the operations of a pharmacy or a medical store. This system enables pharmacists and store managers to efficiently manage various aspects of their business, including inventory management, sales tracking, prescription management, customer records, and more.

In today's fast-paced world, the healthcare industry is evolving rapidly, and the demand for efficient management systems in medical stores is increasing. Traditionally, managing a medical store involved manual processes, such as maintaining paper records, tracking inventory levels, managing prescriptions, and handling sales transactions. These manual methods were time-consuming prone to error, and often inefficient, leading to challenges in inventory management, tracking expiration dates, and ensuring accurate prescription processing. With the advent of technology, Medical Store Management Systems have transformed the way pharmacies and medical stores operate.

1.1 Motivation

Medical store management systems allow us to practice our programming skill in a real-world application. A Medical Store Management Systems serves as the backbone for efficient and effective operations within a pharmacy or medical store. An automated system can streamline the day-to-day operations of a medical store by managing inventory, sales, purchases, and other processes efficiently. It reduces manual errors and redundancy in tasks.

The real motivation to make the medical management system is to make it more secure and trustworthy. To reduce number of errors which are essential in medicine field.

1.2 Statements of Problems

The existing medical store management system lacks efficient management of medicines and medicine records on paper-based is becoming complex due to manual process. The current manual system used in managing the medical store is inefficient and prone to errors.

- Lack of efficient management of medicine.
- Poor record keeping of medicine.
- Time consumption
- Inaccurate stock levels.
- Error in calculation.

1.4 Objectives

The objective of the medical store management system may be different according to the developer. But the main objective of this project is to manage the details of medical shop, stocks, purchase and sales.

- Provides a systematic medicine management.
- Implement digital system for accurate and secure record keeping.

1.5 Application

Mainly this project is developed focusing pharmacy, medical stores. By using this system, store owner or pharmacists can improve their inventory management, improve workflow, and increase profitability. Also, this system will help to improve patient satisfaction, improve data security. So, this project is designed in such a way that it is user friendly.

1.6 Scope

This project is mainly used for pharmacy and medical stores where numbers of medicinal records can be managed.

- This system helps in analyzing the location of the specific medicine available in the medical store.
- The detail of medicine which is available in medical store is easily managed and organized by using this system.

CHAPTER 2
LITERATURE REVIEW

Medical store management system is the system that is designed to help medical stores run smoothly and efficiently which replaces old, manual ways of managing the store with an easier, automated system. In this literature review, we have done the research related to medical store management system.

- “Improving medical stores management through automation and effective communication” by Lt col Ashok Kumar, Marwaha Vishal, Mudera P Cariappa, Maj Gen Mukti Sharma (2015): This study shows that the inventory management system which they developed was simple and user friendly in its interface, no special training was required and the staff adopted the system without any hassles.
- “Medical management system” by prof. R.A Bharatiya, Yogeshri Babari, Kedar Kenjale, Nayan Khade, Nikita Patil (2023): In this study, the medical management system will help in effectively managing the medical store or shop, providing the statictics about medicine or drugs which are in stocks which data can also be updated and edited. It works as per the requirement of the user and has options accordingly.
- “Evaluation of pharmaceutical inventory management challenges at public healthcare facilities” in king Cetshwayo district, Kwazulu-Natal, South Africa by Sibusiso mabizela, Hima N. Nakambale (2023): This study highlights challenges in inventory management, particularly regarding stockouts, overstocking and expiry related wastages in the evaluated healthcare facilities.
- “Survey on Pharmacy management system” by Madhav Mali, Sandhya Alibade, Rajdeep Parbhane, Aparna Awade, Aruna Yadav (2021): This study shows the automate process of collecting, retrieving information and improving the response time of the sales.

After reviewing above articles, I assure that our project will fulfill all the loopholes and gaps of the existing medical store management system by implementing automated system that helps to maintain the medicines records which ultimately lead to time savings, operational efficiency, and heightened customer satisfaction.

CHAPTER: 3

PROJECT MANAGEMENT AND SYSTEM ANALYSIS

Project management is the process of leading a team to achieve specific goals and objectives within a defined timeline. It involves planning, organizing, monitoring all the aspects of a project.

Basically, this project will handle by following time schedule and activity of group members. For programming this system, we collaborated and do coding together which enables us to complete our project before deadline. With effective communication and coordination among the group members, project became successful.

3.1 Time Schedule and Activities of Group Member

A project management timeline is a schedule for your entire project from inception to completion. Here, is the time schedule and activities of group member:

Name	Role	Activities	Working days of maximum 35 days
Kriti Khadka Chhetri	Team leader, designer, coder and documentation	Develop project plan, design and write code according to the project requirements and documentation.	35 days
Purnima Sigdel	Coder, designer and documentation	Design, write code according to project requirements and documentation.	35 days
Vyshnavi Chhetri	Programmer, designer and documentation	Design, write code according to project requirements and documentation.	35 days

Table 1: Time Schedule of This Project

3.2 Work Schedule (Gantt Chart)

A work schedules is a time table that organizes tasks, resources and due dates in an ideal sequence so that a project can be completed on time. Here, is the work schedule of our project:

	Total number of weeks				
Activities	**Week 1**	**Week 2**	**Week 3**	**Week 4**	**Week 5**
System analysis	🟩	🟩			
Design		🟪			
Programming or coding			🟦	🟦	
Testing and Documentation				🟨	🟨

Table 2: Work Schedule of This Project

3.3 Requirements

To run the provided C Medical Store Management System, you'll need the following hardware and software requirements:

3.3.1 Hardware Requirements:

1. Computer: A desktop, laptop
2. Processor: Any modern processor (e.g.: Intel Core i3/i5/i7)
3. Memory (RAM): At 4GB of RAM is recommended for basic functionality. More GB RAM may be beneficial for handling larger datasets.
4. Storage: Sufficient storage space to store the program files, medicine records, and any additional data generated by the system.

3.3.2 Software Requirements:

1. Operating System: The program should be compatible with various operating systems including:
    - Windows
2. C Compiler: You'll need a C compiler to compile and run the provided source code.
    - For Windows: Dev cpp with C compiler.

CHAPTER 4
METHODOLOGY

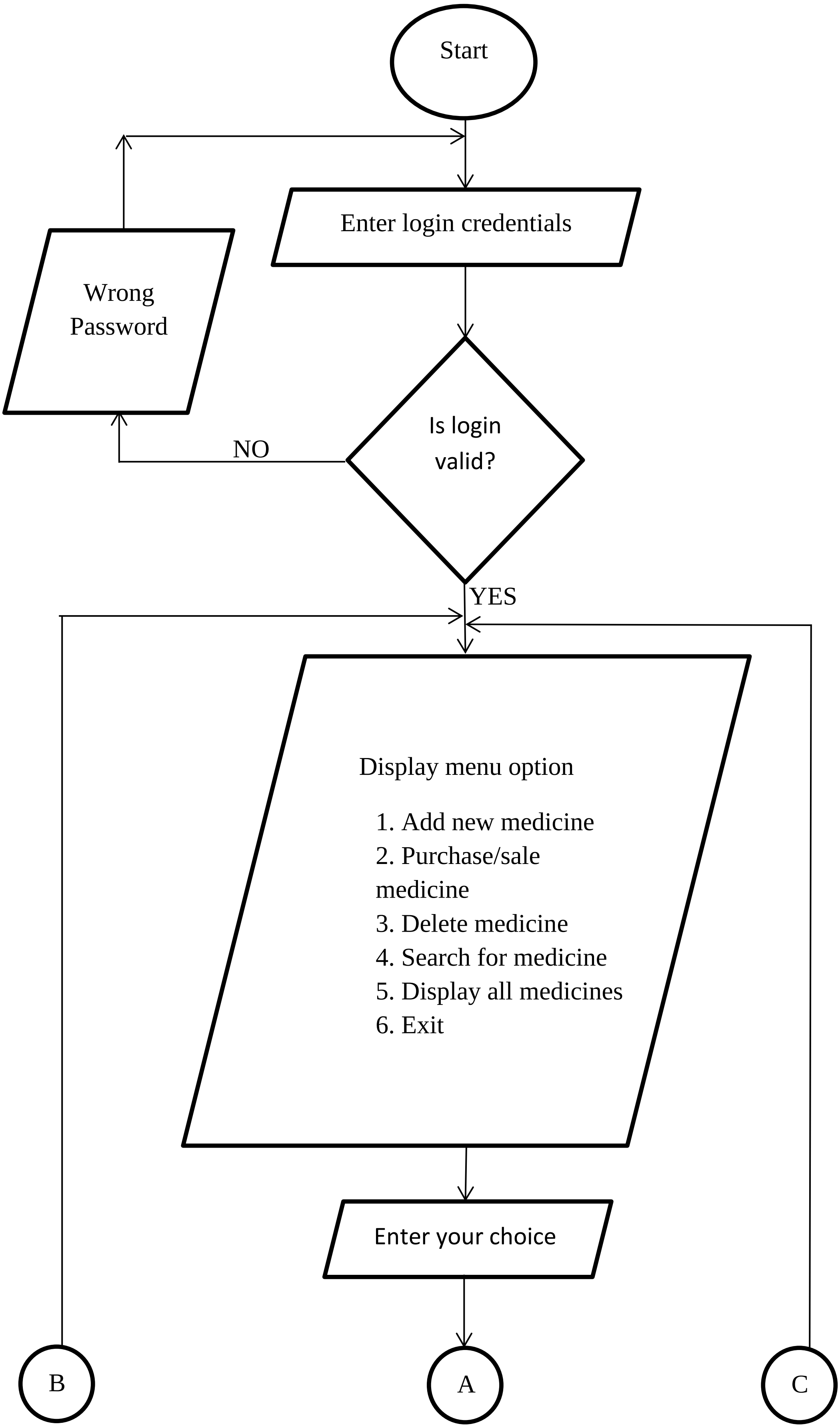
4.1 Algorithm

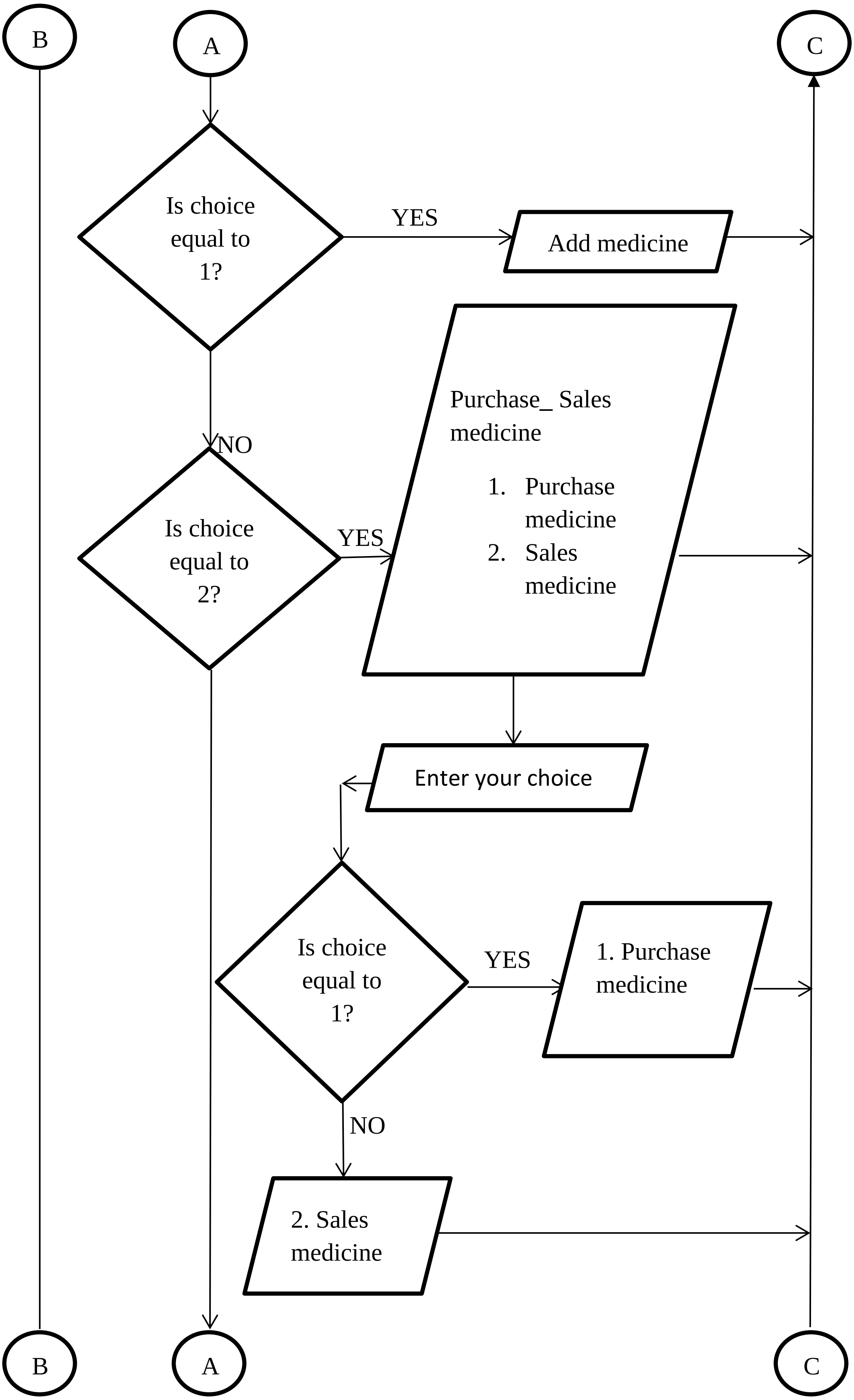
The algorithm of Medical Store Management system given below:

```
Step 1: Start
Step 2: Enter login credentials.
Step 3: Check whether the login Id is valid or not.
        If yes, go to step 4.
        If no, display wrong password and go to step 2.
Step 4: Display menu options for the user:
        1. Add new medicine
        2. Purchase/sale medicine
        3. Delete medicine
        4. Search for medicine
        5. Display all medicines
        6. Exit
Step 5: Enter your choice.
Step 6: If choice equals to 1, add new medicine and goto step 7.
        If choice equals to 2, purchase/sales medicine and goto step 8.
        If choice equals to 3, delete medicine and goto step 9.
        If choice equals to 4, search for medicine and goto step 10.
        If choice equals to 5, display all medicine and goto step 4.
        If choice equals to 6, exit.
        If no, display invalid input and go to step 4.
Step 7: Enter id, name, quantity, price and rack and goto step4.
Step 8: Press 1 for purchase medicine and 2 for sales medicine and goto step 4.
Step 9: Enter id to delete medicine and goto step 4.
Step 10: Enter id to search medicine and goto step 4.
Step 11: Stop
```

4.2 Flowchart

The Flowchart of Medical Store Management system given below:


Start
Enter login credentials
Wrong
Password
Is login
valid?
NO
YES
Display menu option
1. Add new medicine
2. Purchase/sale
medicine
3. Delete medicine
4. Search for medicine
5. Display all medicines
6. Exit
Enter your choice
B
A
C


B
A
C
Is choice equal to 1?
YES
Add medicine
NO
Is choice equal to 2?
YES
Purchase_ Sales medicine
1. Purchase medicine
2. Sales medicine
Enter your choice
Is choice equal to 1?
YES
1. Purchase medicine
NO
2. Sales medicine
B
A
C

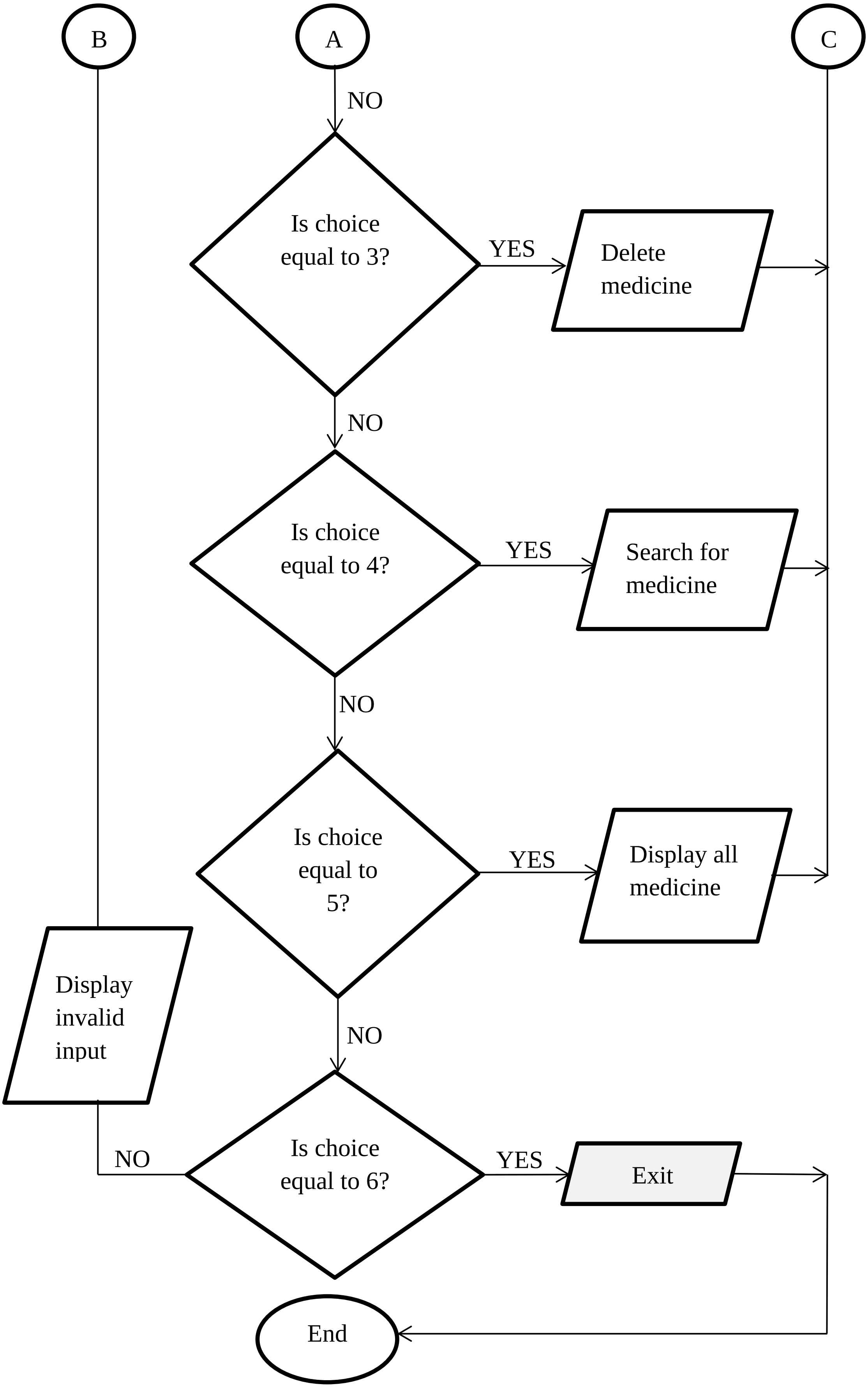


Fig: Flowchart of Medical Store Management System

4.4 Coding

```
#include <stdio.h>
#include <conio.h>
#include <string.h>
#include <windows.h>
void Add_new_medicine();
void Purchase_Sales_medicine();
void Delete_medicine();
void Search_for_medicine();
void Display_all_medicine();
void Exit();
int main()
 {
char pass[30];
int ch, i;
printf("\t\t\t\t\t WELCOME TO MEDICAL STORE MANAGEMENT
SYSTEM\n\n\n");
abc:
printf("\t\t\t Enter Password:");
i = 0;
while ((pass[i] = getch()) != '\r') {
printf("*");
i++;
}
pass[i] = '\0';
if (strcmp(pass, "lumbini") == 0){
printf("Login successfully!!!");
getch();
xyz:
system("cls");
printf("\t\t\t\tWELCOME TO MEDICAL STORE MANAGEMENT
SYSTEM\n\n\n");
printf("\t\t\t\tMENU\n\n");
printf("\t\t\t1. Add new medicine\n");
printf("\t\t\t2. Purchase/Sales medicine\n");
printf("\t\t\t3. Delete medicine\n");
printf("\t\t\t4. Search for medicine\n");
printf("\t\t\t5. Display all medicine\n");
printf("\t\t\t6. Exit\n\n");
printf("\t\t\tEnter your choice:\t");
scanf("%d", &ch);
switch (ch) {
case 1:
Add_new_medicine();
system("cls");
goto xyz;
break;
case 2:
Purchase_Sales_medicine();
system("cls");
goto xyz;
break;
case 3:
Delete_medicine();
system("cls");
goto xyz;
break;
case 4:
Search_for_medicine();
system("cls");
goto xyz;
break;
case 5:
Display_all_medicine();
getch();
system("cls");
goto xyz;
break;
case 6:
Exit();
break;
default:
printf("Invalid Input\n");
getch();
goto xyz;
}
} else {
system("cls");
printf("\t\t\tWrong Password\n");
goto abc;
}
getch();
return 0;
}
void Add_new_medicine()
 {
char name[40];
int id, quantity, rack, check_id;
float price;
FILE *ptr1, *ptr2;
medicine_id:
ptr1 = fopen("medicine.txt", "a+");
ptr2 = fopen("new.txt", "w");
system("cls");
printf("\n Enter id:");
scanf("%d", &check_id);
while (fscanf(ptr1, "%d%s%d%f%d", &id, name, &quantity, &price, &rack) != EOF)
{
if (check_id == id) {
printf("!!ID already exists!! You can't add the same ID!!\n\n");
goto last;
}
```

```
}
id = check_id;
printf("\nEnter name:");
scanf("%s", name);
printf("\nEnter quantity:");
scanf("%d", &quantity);
printf("\nEnter price:");
scanf("%f", &price);
printf("\nEnter Rack Number:");
scanf("%d", &rack);
fprintf(ptr1, "%d\t%s\t%d\t%f\t%d\n", id, name, quantity, price, rack);
fclose(ptr1);
printf("!!Medicine added successfully!!\n");
last:
getch();
}
void Purchase_Sales_medicine()
{
char name[40];
int choice, test = 0, check_id, id, quantity, newquantity, rack;
float price, newprice;
FILE *ptr1, *ptr2;
ptr1 = fopen("medicine.txt", "r");
ptr2 = fopen("newmedicine.txt", "w");
printf("Enter ID to Purchase/Sales medicine\n");
scanf("%d", &check_id);
while (fscanf(ptr1, "%d%s%d%f%d", &id, name, &quantity, &price, &rack) != EOF)
{
if (check_id == id)
{
test = 1;
printf("Medicine found!\n");
printf("1. Purchase\n");
printf("2. Sale\n");
printf("Enter your choice: ");
scanf("%d", &choice);
system("cls");
if (choice == 1)
{
printf("Enter the quantity to purchase: ");
scanf("%d", &newquantity);
quantity=quantity+newquantity;
fprintf(ptr2, "%d\t%s\t%d\t%f\t%d\n", id, name, quantity, price, rack);
printf("!!Purchased successfully !!\n");
}
else if(choice==2)
{
printf("Enter the quantity to sale: ");
scanf("%d", &newquantity);
if (newquantity<=quantity)
{
quantity=quantity-newquantity;
fprintf(ptr2, "%d\t%s\t%d\t%f\t%d\n", id, name, quantity, price, rack);
printf("!!Sold successfully !!\n", quantity, id);
}
else
{
fprintf(ptr2, "%d\t%s\t%d\t%f\t%d\n",id,name, quantity, price, rack);
printf("Not enough stock to sale.\n");
}
}
}
else
{
fprintf(ptr2, "%d\t%s\t%d\t%f\t%d\n",id,name, quantity, price, rack);
}
}
getch();
```

```
fclose(ptr1);
fclose(ptr2);
remove("medicine.txt");
rename("newmedicine.txt", "medicine.txt");
if (test == 0) {
system("cls");
printf("!!Medicine ID %d not found!!\n", check_id);
}
getch();
}
void Delete_medicine()
 {
char name[40];
int id, check_id,quantity,rack,test=0;
float price;
FILE*ptr1,*ptr2;
ptr1=fopen("medicine.txt","r");
ptr2=fopen("newmedicine.txt","w");
printf("Enter id to delete medicine:\n");
scanf("%d",&check_id);
while(fscanf(ptr1,"%d%s%d%f%d",&id,name,&quantity,&price,&rack)!=EOF)
{
if(check_id!=id)
{
fprintf(ptr2,"%d\t%s\t%d\t%f\t%d\n", id, name, quantity, price,rack);
}
else
{
printf("!!Medicine Deleted Successfully!!\n");
test++;
getch();
}
}
fclose(ptr1);
fclose(ptr2);
remove("medicine.txt");
rename("newmedicine.txt","medicine.txt");
if(test==0)
{
printf("Medicine not found\n");
}
}
void Search_for_medicine()
 {
char name[40];
int id, check_id, quantity, rack, test = 0;
float price;
FILE *ptr1;
ptr1 = fopen("medicine.txt", "r");
printf("\n Enter ID to search for medicine: ");
scanf("%d", &check_id);
while (fscanf(ptr1, "%d%s%d%f%d", &id, name, &quantity, &price, &rack) != EOF)
{
if (check_id == id) {
system("cls");
test = 1;
printf("\t\tMedicine Details\n");
printf("\nName: %s", name);
printf("\nQuantity: %d", quantity);
printf("\nPrice: %f", price);
printf("\nRack Number: %d", rack);
}
}
if (test == 0) {
system("cls");
printf("\t\t\t!!Medicine ID %d Does not exist!!\n", check_id);
}
getch();
```

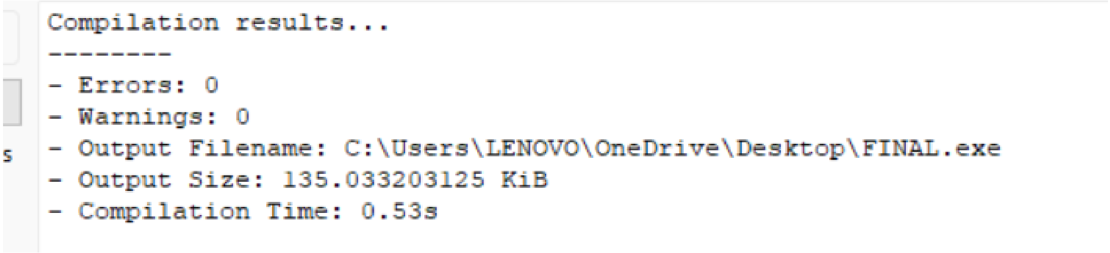
```
}
void Display_all_medicine()
{
int id, quantity, rack;
char name[40];
float price;
FILE *ptr;
ptr = fopen("medicine.txt", "r");
if (ptr == NULL) {
printf("File doesn't exist\n");
getch();
return;
}
system("cls");
printf("=======================================================
============================================\n");
printf("| %-10s | %-25s | %-10s | %-10s | %-10s |\n", "ID", "Name of Medicine",
"Quantity", "Price", "Rack");
printf("=======================================================
============================================\n");
   while (fscanf(ptr, "%d%s%d%f%d", &id, name, &quantity, &price, &rack) !=
EOF) {
printf("| %-10d | %-25s | %-10d | %-10.2f | %-10d |\n", id, name, quantity, price,
rack);
   }
printf("=======================================================
============================================\n");
fclose(ptr);
getch();
}
void Exit() {
printf("............................ !!!Program is Terminating!!!.......................");
getch();
```

CHAPTER 5
RESULT AND CONCLUSION

5.1 Result

5.1.1 Output Compile

After completion of the code, the whole code will run using F9 key and compiled and shows error at the end of the program.

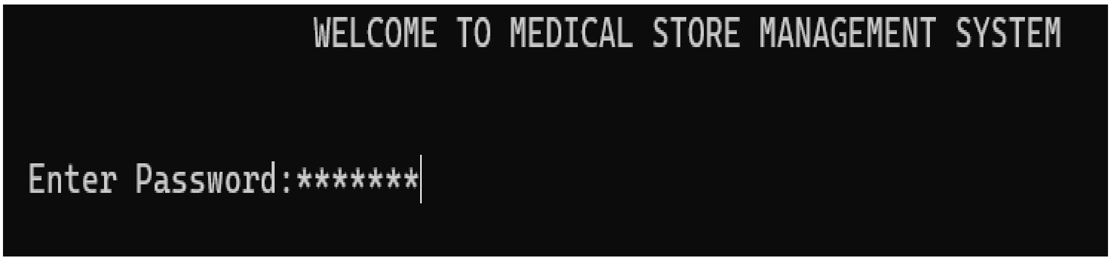


```
Compilation results...
--------
- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\LENOVO\OneDrive\Desktop\FINAL.exe
- Output Size: 135.033203125 KiB
- Compilation Time: 0.53s
```

Fig 2. Output compiled of zero error

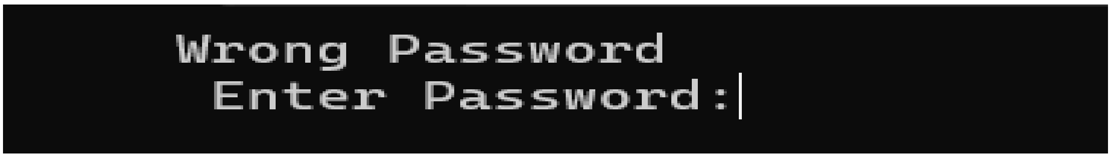
5.1.2 Login Page

Firstly, you have to enter the correct password to goto into the menu options. If you enter the wrong password, it will deny the access to enter in the menu options.



```
                WELCOME TO MEDICAL STORE MANAGEMENT SYSTEM


Enter Password:*******
```

Fig 3. Enter Password



```
        Wrong Password
         Enter Password:
```

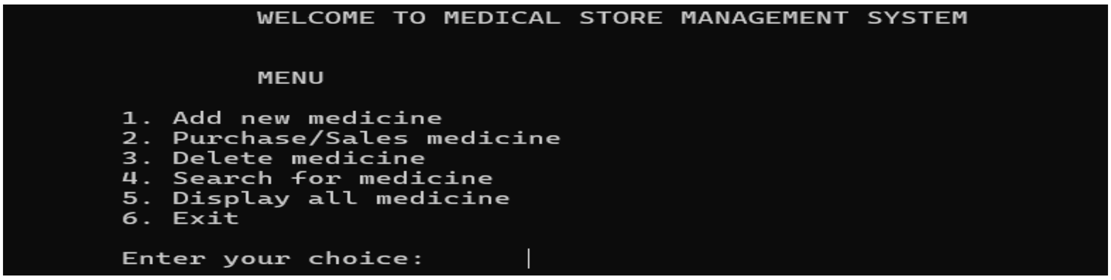
Fig 4. Access Denied

```
Login successfully!!!
```

Fig 5. Login Success

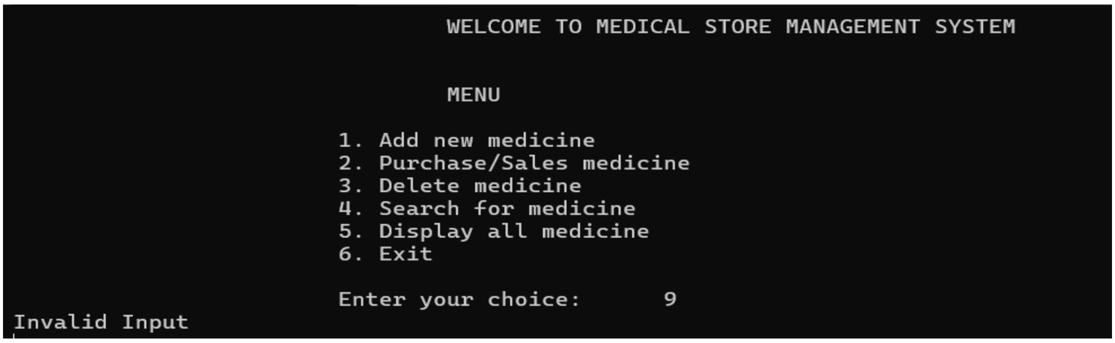
5.1.3 Menu Option

After entering the correct password, you will enter into the menu options where all the menu options are shown. Then after by entering the suitable number, you will be able to operate the given options or functions. If the users enter key except 1 to 6, then it will display invalid input.



```
          WELCOME TO MEDICAL STORE MANAGEMENT SYSTEM

          MENU

      1. Add new medicine
      2. Purchase/Sales medicine
      3. Delete medicine
      4. Search for medicine
      5. Display all medicine
      6. Exit

      Enter your choice:
```

Fig 6 . Menu Options

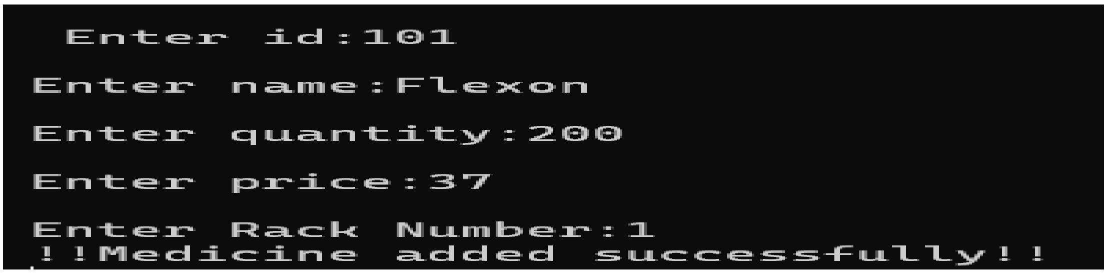


```
                         WELCOME TO MEDICAL STORE MANAGEMENT SYSTEM


                         MENU

                 1. Add new medicine
                 2. Purchase/Sales medicine
                 3. Delete medicine
                 4. Search for medicine
                 5. Display all medicine
                 6. Exit

                 Enter your choice:      9
Invalid Input
```

Fig 7. Invalid Input

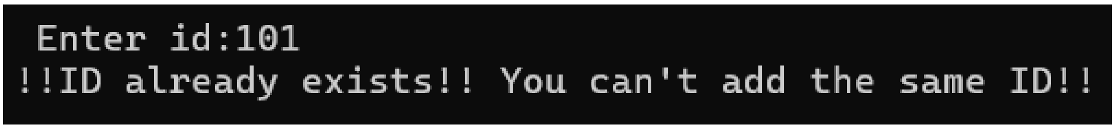
5.1.4 Add New Medicine

To add new medicine, press 1 as a choice then you have to enter Id of the medicine, name, quantity, price and rack no. respectively. After entering all the above-mentioned details, new medicine will be added.



```
  Enter id:101

 Enter name:Flexon

 Enter quantity:200

 Enter price:37

 Enter Rack Number:1
 !!Medicine added successfully!!
```

Fig 8. Add New Medicine

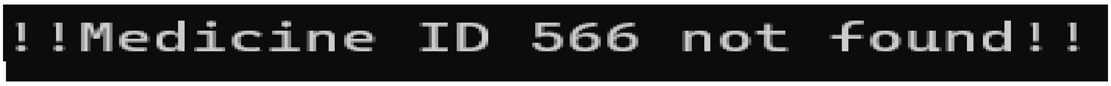


```
 Enter id:101
!!ID already exists!! You can't add the same ID!!
```

Fig 9. Already exist ID

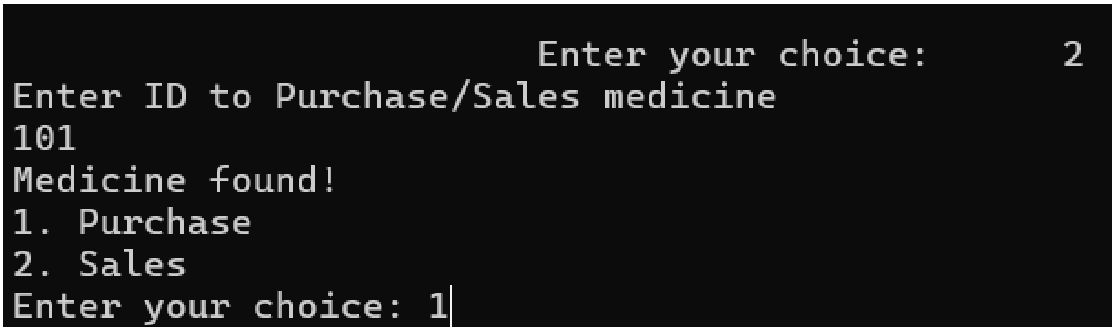
5.1.5 Purchase/Sell Medicine

If you want to purchase/sell medicine, you can just press 2. Then ,you have to enter id of those medicine which you want to purchase or sell .If id matched, two options will display 1 for purchase medicine 2 for sell medicine .If id doesnot found ,it will display medicine id not found.



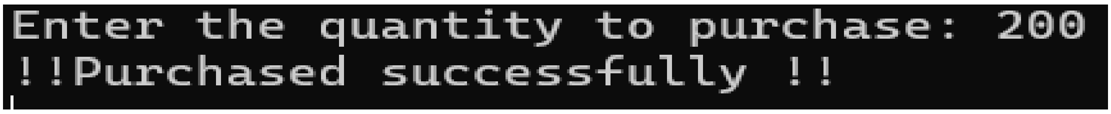
```
!!Medicine ID 566 not found!!
```

Fig 10. Medicine Id not found



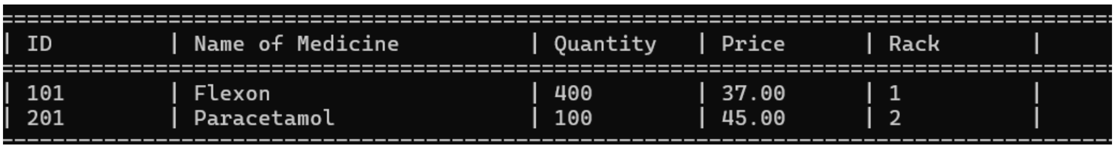
```
                                Enter your choice:      2
Enter ID to Purchase/Sales medicine
101
Medicine found!
1. Purchase
2. Sales
Enter your choice: 1
```

Fig 11. Choice for Purchase medicine



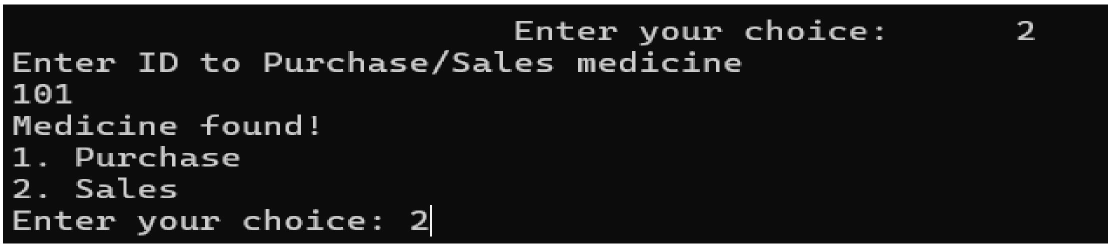
```
Enter the quantity to purchase: 200
!!Purchased successfully !!
```

Fig 12. Purchased medicine successfully



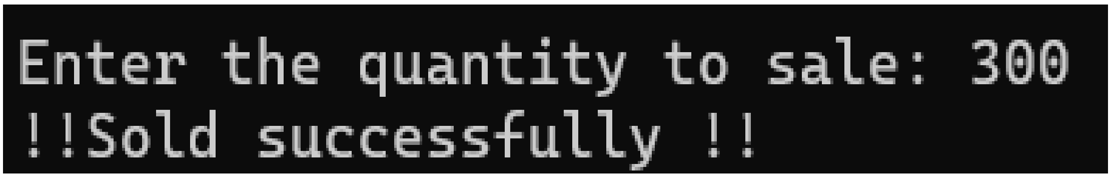
```
=============================================================================================
| ID         | Name of Medicine          | Quantity   | Price      | Rack       |
=============================================================================================
| 101        | Flexon                    | 400        | 37.00      | 1          |
| 201        | Paracetamol               | 100        | 45.00      | 2          |
=============================================================================================
```

Fig 13. Purchased medicine details



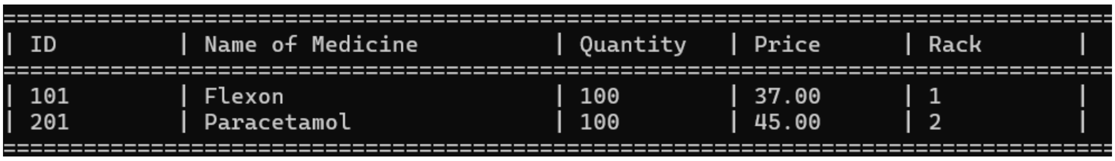
```
                                Enter your choice:      2
Enter ID to Purchase/Sales medicine
101
Medicine found!
1. Purchase
2. Sales
Enter your choice: 2
```

Fig 14. Choice for Sale Medicine



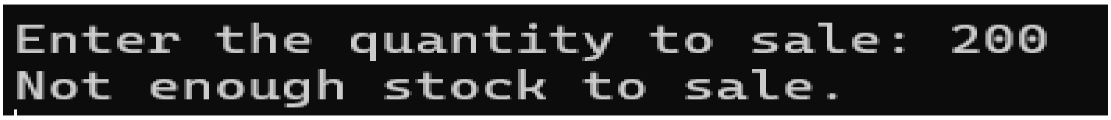
```
Enter the quantity to sale: 300
!!Sold successfully !!
```

Fig 15. Sold Successfully



```
=================================================================================
| ID         | Name of Medicine           | Quantity   | Price      | Rack      |
=================================================================================
| 101        | Flexon                     | 100        | 37.00      | 1         |
| 201        | Paracetamol                | 100        | 45.00      | 2         |
=================================================================================
```

Fig 16. Sold medicine details

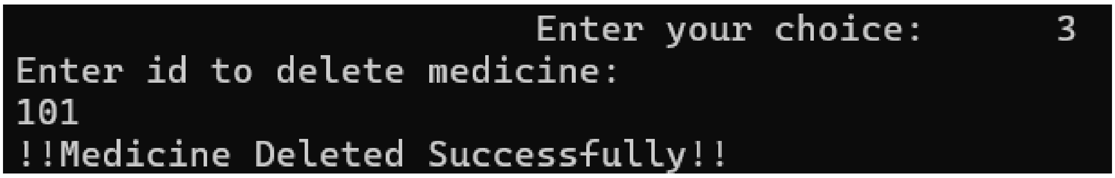


```
Enter the quantity to sale: 200
Not enough stock to sale.
```

Fig 17 .Not enough quantity to sale

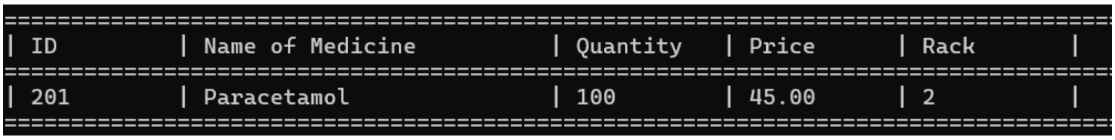
5.1.6 Delete Medicine

If you want to delete or remove the existing medicine, then press 3 as a choice so that you can simply delete medicine by entering Id of the medicine.



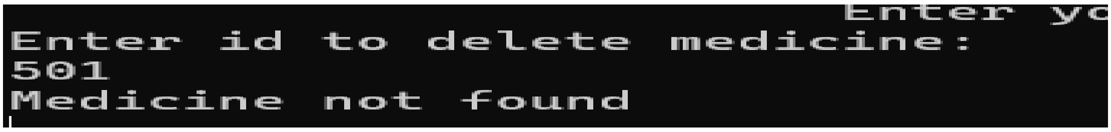
```
                        Enter your choice:     3
Enter id to delete medicine:
101
!!Medicine Deleted Successfully!!
```

Fig 18. Enter id to delete medicine



```
=================================================================================
| ID         | Name of Medicine           | Quantity   | Price      | Rack      |
=================================================================================
| 201        | Paracetamol                | 100        | 45.00      | 2         |
=================================================================================
```

Fig 19. Medicine deleted successfully

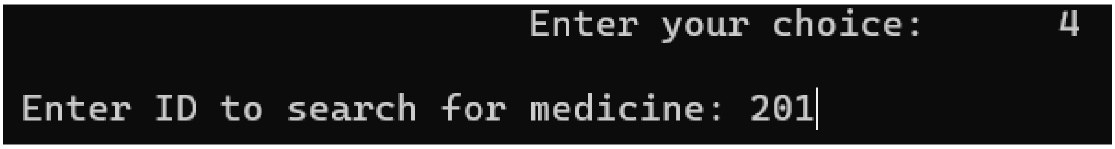


```
                                          Enter yo
Enter id to delete medicine:
501
Medicine not found
```

Fig 20. Medicine not found

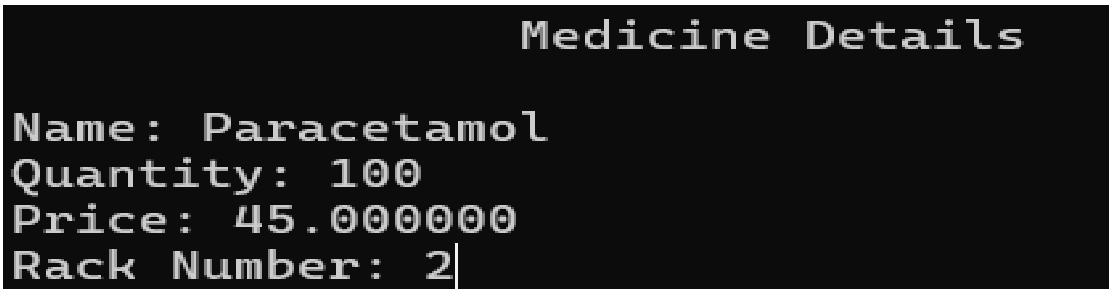
5.1.7 Search for Medicine

In order to search existing medicine, first you have to choose choice as 4, then after you can search by entering the Id of the medicine. If you enter the Id that doesn't exist, then It will show that the entered medicine Id doesn't exist.



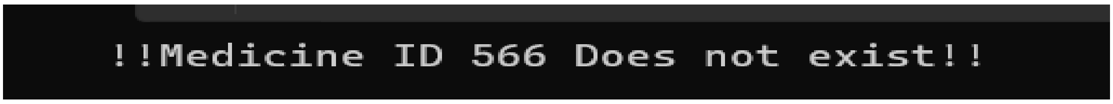
```
                        Enter your choice:      4

 Enter ID to search for medicine: 201
```

Fig 21. Enter id to search medicine



```
                        Medicine Details

Name:  Paracetamol
Quantity:  100
Price:  45.000000
Rack Number:  2
```

Fig 22. Medicine details

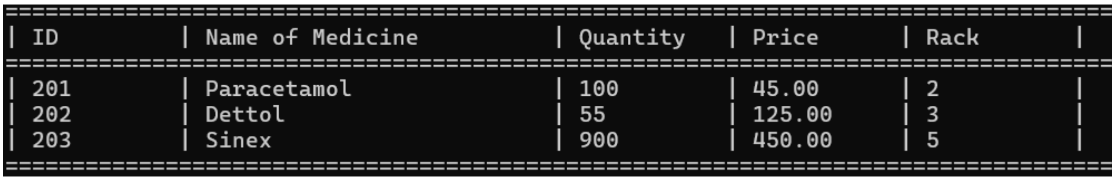


```
    !!Medicine ID 566 Does not exist!!
```

Fig 23. Medicine ID does not exist.

5.1.8 Display all Medicine

When you enter choice as 5, you will be able to see records of each existing medicine.

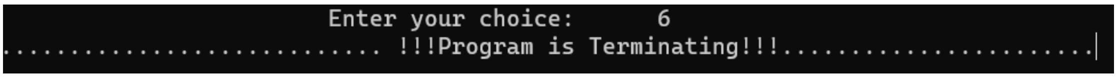


```
==================================================================================
| ID         | Name of Medicine            | Quantity   | Price      | Rack      |
==================================================================================
| 201        | Paracetamol                 | 100        | 45.00      | 2         |
| 202        | Dettol                      | 55         | 125.00     | 3         |
| 203        | Sinex                       | 900        | 450.00     | 5         |
==================================================================================
```

Fig 24. Display all Medicine

5.1.9 Exit

If you want to exit the program, you can just press 6 to exit and the program will be terminated.



```
                         Enter your choice:      6
.......................... !!!Program is Terminating!!!.....................
```

Fig 25. Exit

5.2 Conclusion

In conclusion, The whole project is designed in C language and different variables and strings have been used for the development of this project. Medical Store Management system is an automated system aims to meet the requirements of medical stores by efficiently storing and managing their valuable data and information. It offers a secure login system. This Medical store Management System has many features such as adding new medicine, purchasing/selling, deleting medicine, searching and displaying records of medicine. This system will allow users to perform above mentioned operations in order to maintain the medical store in an efficient and more secure way. This mini project is easy to operate and understand by the users.

Reference

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