Green University of Bangladesh

Department of Computer Science and Engineering (CSE)

Faculty of Science and Engineering

Semester: 3rd(Fall semester / Year: 2022), BSc in CSE (Day)

Lab Project Report

Course Title: Data Structured Lab

Course Code: CSE 106 / Section: DE -221

Lab Project Tittle: Medical Store Management system.

Student Details

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Submission Date: 28 / 12 / 2022

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[For Teachers Use Only: **Don't Write Anything inside this box**]

<u>Project Tittle :</u>

Medical Store Management system.

<u>Introduction:</u>

The purpose of this project is to improve the maintenance and manipulation of the drugs in the medicals. This project will be used to minimize the time and resource by maintaining the details of the drug systemically so that the data can be used in possible quickest time. So that's why I choose this project which is called "MEDICAL STORE MANAGEMENT SYSTEM".

<u>Objective :</u>

The objective of this project is to organize the medical store details like stocks, medicines, expense, sales and others. The project is mainly developed at the administrative end and therefore it only provides access to the administrator of the store. This project aims to design and develop software that provides ease and improvement from the manual inventory system used by medical stores.
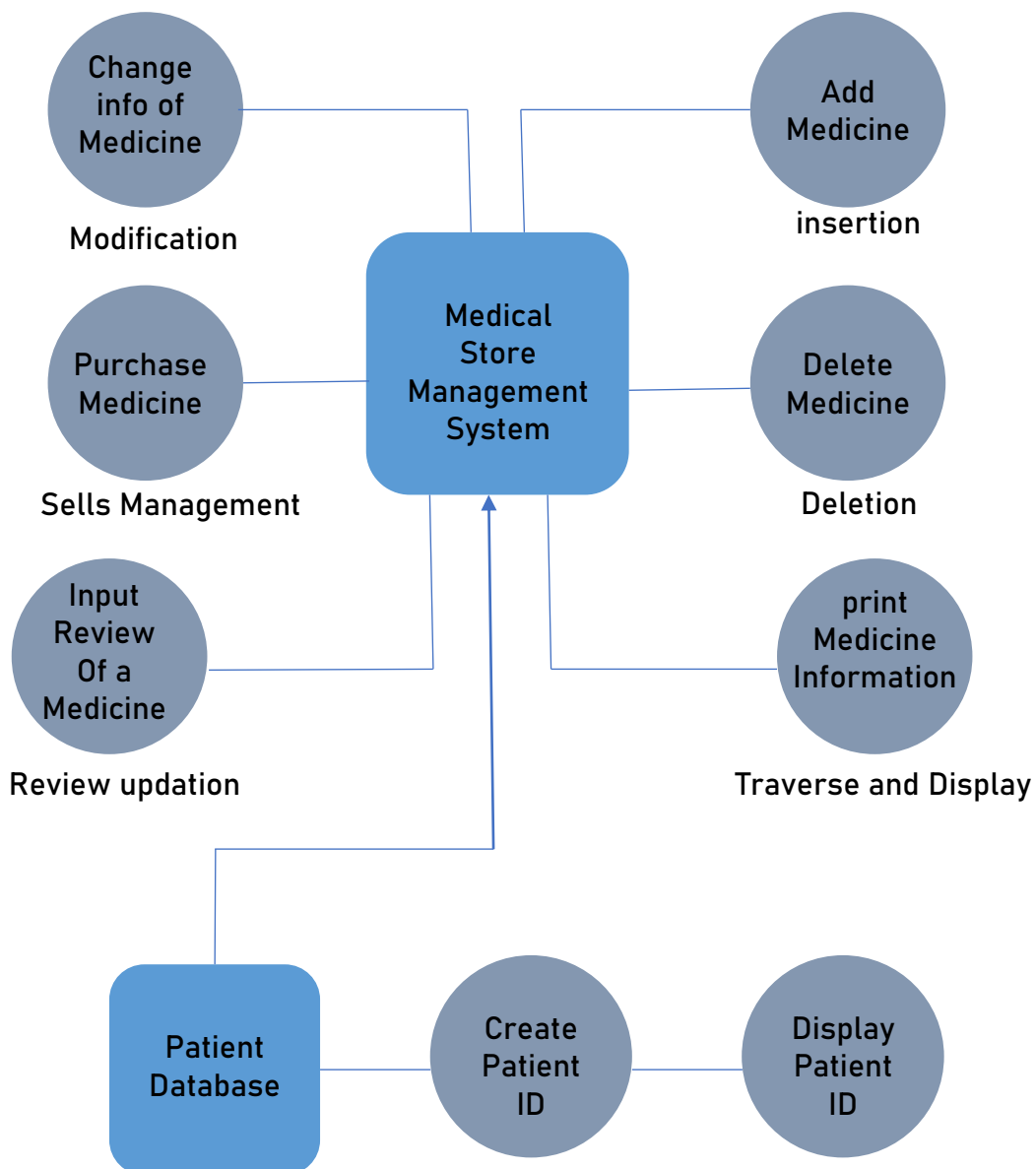
The Medical Store Management System Also Has Following Objectives:

- To keep track and manage all information.

- To show the description and information of the stocks and others.

- To enhance the efficiency of management in medical store.

- To monitor the information regarding the transaction of the sales.

- To improve the function of edit, insertion, deletion and update the records for the proper resource management.

Tools and Technologies :

Medical Store Management System is specially designed for purpose of adding medical information records like Supplier's, Medicine Records in Medical Stores. This system elaborates the basic concept for storing and generating all the records stored. Whole project is designed in 'C' language, by using Code Blocks IDE and also different variables and strings have been used for the development of this project. It's easy to operate and understand by users.

Project Diagram :

<u>Conclusion :</u>

Practical Implications:

- This is a generic Software which can be used in variety of outlets (retalers/ wholesalers) to automate manual process of keeping records and manage inventory and so on. As this is an automated system shopkeeper can maintain their records more efficiently and in organized form.

- This software helps users to manage day to day activities of Medical store more effectively.

- Also Medical store Management System Project helped us understanding about the development phases of a project and software development life cycle. We learned how to test different features of a project.

- Medical store Management System Project has given us great satisfaction in having designed an application which can be implemented to any medical distribution and shops selling various kinds of products by simple modifications.

Future Scope :

- <u>Integration with other systems</u>: A medical store management system could be integrated with other systems, such as a hospital information system or an electronic health record (EHR) system, to provide a more comprehensive view of patient care and streamline processes.

- <u>Cloud-based deployment</u>: A medical store management system could be deployed on the cloud, allowing users to access it from any location and on any device with an internet connection.

- <u>Enhanced security measures</u>: As the medical store management system handles sensitive data such as patient information and financial transactions, it is important to implement strong security measures to protect against data breaches and unauthorized access.

- <u>Mobile app development</u>: A mobile app could be developed to allow users to access the medical store management system remotely and perform tasks such as placing orders, checking inventory levels, and tracking shipments.

C programming project code :

```c
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <ctype.h>
#define MAX_NAME_LEN 50

typedef struct patient {
    int id;
    char name[MAX_NAME_LEN];
    int age;
    char gender[MAX_NAME_LEN];
    char problem[MAX_NAME_LEN];
    char medicinerequired[MAX_NAME_LEN];
    char phone[MAX_NAME_LEN];
    struct patient *next;
} Patient;

Patient *head = NULL;


//7-Add patient
void add_patient() {
    Patient *new_patient = (Patient *) malloc(sizeof(Patient));

    printf("\n\tPATIENT ID INSERTION");
    printf("\n-----------------------------\n");
    // Get user input for patient ID
    printf("\nEnter patient ID        = ");
    scanf("%d", &new_patient->id);

    // Get user input for patient name
    printf("Enter patient name       = ");
    scanf("%s", new_patient->name);

    // Get user input for patient age
    printf("Enter patient age        = ");
    scanf("%d", &new_patient->age);

    // Get user input for patient gender
    printf("Enter patient gender     = ");
    scanf("%s", new_patient->gender);
```

```c
    // Get user input for patient address
    printf("Enter patient problem     = ");
    scanf("%s", new_patient->problem);

    // Get user input for patient medicine required
    printf("patient's medicine name    = ");
    scanf("%s", new_patient->medicinerequired);


    // Get user input for patient phone number
    printf("Enter patient phone number = ");
    scanf("%s", new_patient->phone);

    new_patient->next = head;
    head = new_patient;
}

Patient *find_patient(int id) {
    Patient *current = head;
    while (current != NULL) {
        if (current->id == id) {
            return current;
        }
        current = current->next;
    }
    return NULL;
}

//8-Display patient info
void print_patient(Patient *patient) {

    printf("\n\tDISPLAY PATIENT INFO");
    printf("\n-----------------------------\n");
    printf("\nID          = %d\n", patient->id);
    printf("Name         = %s\n", patient->name);
    printf("Age         = %d\n", patient->age);
    printf("Gender       = %s\n", patient->gender);
    printf("problem      = %s\n", patient->problem);
    printf("Medicine Name  = %s\n", patient->medicinerequired);
    printf("Phone Number   = %s\n", patient->phone);
}
```

```c
struct Medicine
{
    int id,price,quantity;
    char
medicneName[100],Company[100],Mfg_Date[11],Exp_Date[11],info[5000];
}
m[100];

void PurchaseMedicine(int number);
void EnterInfoAboutMedicine(int number);
void KnowInfoAboutMedicine(int number);
void AddMedicineinStore(int number,struct Medicine m[]);
void DeleteMedicineStore(int number);
void ChangeMedicineDetails(int number);

int main(int argc, char **argv) {
    int i,j,choice,number=0,c;
    for(i=0; i<100; i++)
    {
        m[i].id=0;
        m[i].price=0;
        m[i].quantity=0;
        strcpy(m[i].Mfg_Date,"");
        strcpy(m[i].Exp_Date,"");
        strcpy(m[i].medicneName,"");
        strcpy(m[i].Company,"");
        strcpy(m[i].info,"");
    }

    do
    {
        printf("\n\n=====================================");
        printf("\nMEDICAL STORE MANAGEMENT SYSTEM\n");
        printf("=====================================");
        printf("\n[1] - Add Medicine\n");
        printf("[2] - Delete Medicine\n");
        printf("[3] - Medicine Modification\n");
        printf("[4] - Insert Review of a Medicine\n");
        printf("[5] - Purchase Medicine\n");
        printf("[6] - Display Medicine Information\n");
        printf("[7] - Add Patient\n");
        printf("[8] - Display Patient info\n");
```

```c
printf("\nEnter any Number = ");
scanf("%d",&choice);

switch(choice)
{
case 1:
{
    ++number;
    AddMedicineinStore(number,m);
    break;

}
case 2:
{
    DeleteMedicineStore(number+1);
    break;

}
case 3:
{
    ChangeMedicineDetails(number+1);
    break;

}

case 4:
{
    EnterInfoAboutMedicine(number+1);
    break;

}
case 5:
{
    PurchaseMedicine(number+1);
    break;

}
case 6:
{
    KnowInfoAboutMedicine(number+1);
    break;

}
```

```c
        case 7:
        {
           add_patient();
           break;
        }



        case 8:
            printf("\nEnter patient ID to search for: ");
            int id;
            scanf("%d", &id);
            Patient *patient = find_patient(id);
            if (patient != NULL) {
               print_patient(patient);
            } else {
               printf("**Patient not found**\n");
            }
            break;

        }
        printf("\nTo  Continue  with  other  Options  Enter  1  Else  any  other
number\n");
        scanf("%d",&c);
    }
    while(c==1);
}

//1- add medicine
void AddMedicineinStore(int number,struct Medicine m[])
{
    char name[100];

    printf("\n\tADD MEDICINE");
    printf("\n---------------------------\n");
    printf("Enter Medicine Id     = ");
    scanf("%d",&(m[number].id));
    fflush(stdin);

    printf("Enter Medicine Name    = ");
    fflush(stdin);
    gets(name);
    strcpy(m[number].medicneName,name);
```

```c
    printf("Enter Company Name     = ");
    fflush(stdin);
    gets(m[number].Company);

    printf("Enter Manufactured Date = ");
    fflush(stdin);
    gets(m[number].Mfg_Date);

    printf("Enter Expiry Date       = ");
    fflush(stdin);
    gets(m[number].Exp_Date);

    printf("Enter Quantity        = ");
    fflush(stdin);
    scanf("%d",&(m[number].quantity));

    printf("Enter Price           = ");
    fflush(stdin);
    scanf("%d",&(m[number].price));
    strcpy(m[number].info,"");

    printf("----------------------------\n");

    printf("\nMedicine with id %d Added Successfully\n",m[number].id);
}

//2- delete medicine
void DeleteMedicineStore(int number)
{
    int id,i,flag=0,num;

    printf("\n\tDELETE MEDICINE");
    printf("\n----------------------------\n");
    printf("\nEnter Id to be deleted = ");
    fflush(stdin);
    scanf("%d",&id);
    for(i=0; i<number; i++)
    {
        if(m[i].id==id)
        {
            flag=1;
            m[i].id=0;
            m[i].price=0;
            m[i].quantity=0;
```

```c
            strcpy(m[i].medicneName,"");
            strcpy(m[i].Company,"");
            strcpy(m[i].Mfg_Date,"");
            strcpy(m[i].Exp_Date,"");
            strcpy(m[i].info,"");
            num=i;
            break;
        }
    }
    if(flag==1)
    {
        printf("***Medicine with %d is Deleted Successfully***\n",id);
    }
}

//3- Medicine Modification
void ChangeMedicineDetails(int number)
{
    int id,quantity,choice,c,i;

    printf("\n\tMEDICINE MODIFICATION");
    printf("\n-----------------------------\n");
    printf("\nEnter id to change Details = ");
    scanf("%d",&id);
    for(i=0; i<number; i++)
    {
        if(m[i].id==id && m[i].id!=0)
        {
            do
            {
                printf("\nEnter\n");
                printf("1- Change Quantity\n");
                printf("2- Change Price\n");
                printf("3- Change Name\n");
                printf("4- Change Company\n");
                printf("5- Change Manufacturing Date\n");
                printf("6- Change Expiry Date\n7- Change Info\n\nAny other
number to exit = ");


                scanf("%d",&choice);
                if(choice==1)
                {
                    int quantity;
                    printf("\nEnter Quantity to be changed = ");
```

```c
        fflush(stdin);
                scanf("%d",&quantity);
                m[i].quantity=quantity;
                printf("Quantity changed Successfully\n");
            }
            if(choice==2)
            {
                int price;
                printf("\nEnter Price to be changed = ");
                fflush(stdin);
                scanf("%d",&price);
                m[i].price=price;
                printf("Price changed Successfully\n");
            }
            if(choice==3)
            {
                char name[100];
                printf("\nEnter Name to be changed = ");
                fflush(stdin);
                gets(name);
                strcpy(m[i].medicneName,name);
                printf("Medicine Name changed Successfully\n");
            }
            if(choice==4)
            {
                char company[100];
                printf("\nEnter company to be changed = ");
                fflush(stdin);
                gets(company);
                strcpy(m[i].Company,company);
                printf("Company changed Successfully\n");
            }
            if(choice==5)
            {
                char mfg[11];
                printf("\nEnter Manufacturing date to be changed = ");
                fflush(stdin);
                gets(mfg);
                strcpy(m[i].Mfg_Date,mfg);
                printf("Manufacturing Date changed Successfully = ");
            }
            if(choice==6)
            {
                char exp[11];
```

```c
                printf("\nEnter Expiry date to be changed = ");
                fflush(stdin);
                gets(exp);
                strcpy(m[i].Exp_Date,exp);
                printf("Expiry Date changed Successfully\n");
            }
            if(choice==7)
            {
                char info[100];
                printf("\nEnter Info to be changed(Less than 100 Characters) = ");
                fflush(stdin);
                gets(info);
                strcpy(m[i].info,info);
                printf("Info changed Successfully\n");
            }
            if(choice<=0 && choice>7)
            {
                printf("\nEnter valid Choice\n");
            }
            printf("\nEnter 1 to Change other Details Else any other number\n");
            fflush(stdin);
            scanf("%d",&c);
        }
        while(c==1);

        break;
    }
  }
}

//4- Enter information about a medicine
void EnterInfoAboutMedicine(int number)
{
    int i,flag=0,c;
    char name[100],info[100];

    printf("\n\tINSERT REVIEW OF A MEDICINE");
    printf("\n----------------------------\n");
    printf("Enter Name of the medicine you want to Review or include Info = "); //need to change
    fflush(stdin);
    gets(name);
```

```c
for(i=0; i<number; i++)
    {
        if(strcmp(m[i].medicneName,name)==0)
        {
            flag=1;
            printf("\nThese are the details of Medicine");
            printf("\n_____\n");
            printf("Name            = %s\n",m[i].medicneName);
            printf("Price           = %d\n",m[i].price);
            printf("Available Quantity = %d\n",m[i].quantity);
            printf("Company         = %s\n",m[i].Company);
            printf("Mfg Date        = %s\n",m[i].Mfg_Date);
            printf("Exp Date        = %s\n",m[i].Exp_Date);


            if(strcmp(m[i].info,"")!=0)
            {
                printf("Review Already Available!\nIf you want to Add a Review Enter 1 else Any other number\n");
                fflush(stdin);
                scanf("%d",&c);
            }
            else
            {
                printf("Enter review     = ");
                fflush(stdin);
                gets(m[i].info);
            }
            if(c==1)
            {
                printf("Enter review     = ");
                fflush(stdin);
                gets(info);
                strcat(m[i].info,"; ");
                strcat(m[i].info,info);
            }

        }
    }
    if(flag==0)
    {
        printf("Entered Name Not Found\n");
    }
}
```

```c
//5- purchase medicine function
void PurchaseMedicine(int number)
{
    int id,check,i,quantity,flag=0;
    char name[100];
    printf("\n\tPURCHASE MEDICINE");
    printf("\n-----------------------------\n");
    printf("\nEnter 1 if you know ID / else enter Name of Medicine\n");
    fflush(stdin);
    scanf("%d",&check);
    if(check==1)
    {
        printf("\nEnter Id to purchase Medicine\n");
        fflush(stdin);
        scanf("%d",&id);
        for(i=0; i<number; i++)
        {
            if(m[i].id==id)
            {
                flag=1;
                int c;

                printf("\nThese are the details of Medicine");
                printf("\n_____\n");
                printf("Name            = %s\n",m[i].medicneName);
                printf("Price           = %d\n",m[i].price);
                printf("Available Quantity = %d\n",m[i].quantity);
                printf("Company         = %s\n",m[i].Company);
                printf("Mfg Date        = %s\n",m[i].Mfg_Date);
                printf("Exp Date        = %s\n",m[i].Exp_Date);


                if(strcmp(m[i].info,"")==0)
                {
                    printf("Medicine Review   = Not Available\n");
                }
                else
                {
                    printf("Medicine Review   = Not Available\n");
                }
                printf("\nDo you want to purchase %s \nIf Yes Enter 1 else any
other number\n",m[i].medicneName);
                fflush(stdin);
                scanf("%d",&c);
```

```c
        if(c==1)
        {
            printf("\nEnter Quantity to Purchase = ");
            scanf("%d",&quantity);
            if(m[i].quantity>quantity)
            {
                printf("Total Price to be paid   = %d\n",quantity*m[i].price);
            }
            else
            {
                printf("Please Enter quantity below Available Quantity\n");
            }
        }
        break;
    }
}
if(flag==0)
{
    printf("Entered Id Not Found\n");
}
}
else
{
    printf("Enter Name to search and Purchase\n");
    fflush(stdin);
    gets(name);
    for(i=0; i<number; i++)
    {
        if(strcmp(m[i].medicneName,name)==0)
        {
            flag=1;
            int c;

            printf("\nThese are the details of Medicine");
            printf("\n_____\n");
            printf("Name              = %s\n",m[i].medicneName);
            printf("Price             = %d\n",m[i].price);
            printf("Available Quantity = %d\n",m[i].quantity);
            printf("Company           = %s\n",m[i].Company);
            printf("Mfg Date          = %s\n",m[i].Mfg_Date);
            printf("Exp Date          = %s\n",m[i].Exp_Date);
```

```c
            if(strcmp(m[i].info,"")==0)
            {
                printf("Medicine Review   = Not Available\n");
            }
            else
            {
                printf("Medicine Review   = %s\n",m[i].info);
            }
            printf("Do you want to purchase %s \nIf Yes Enter 1 else any other
number\n",m[i].medicneName);
            fflush(stdin);
            scanf("%d",&c);
            if(c==1)
            {
                printf("\nEnter Quantity to Purchase  = ");
                scanf("%d",&quantity);
                if(m[i].quantity>quantity)
                {
                    printf("Total Price to be paid = %d\n",quantity*m[i].price);
                }
                else
                {
                    printf("Please Enter quantity below Available Quantity\n");
                }
            }
            break;
        }
    }
    if(flag==0)
    {
        printf("Entered Name Not Found\n");
    }
}
}


//6-Display Medicine information
void KnowInfoAboutMedicine(int number)
{
    int i,flag=0;
    char name[100];
    printf("\n\tDISPLAY MEDICINE INFORMATION");
    printf("\n----------------------------\n");
    printf("Enter Name of the medicine you want to see Review and Info\n");
    fflush(stdin);
```

```c
gets(name);
    for(i=0; i<number; i++)
    {
        if(strcmp(m[i].medicneName,name)==0)
        {
            flag=1;
            printf("\nThese are the details of Medicine");
            printf("\n_____\n");
            printf("Name              = %s\n",m[i].medicneName);
            printf("Price             = %d\n",m[i].price);
            printf("Available Quantity = %d\n",m[i].quantity);
            printf("Company           = %s\n",m[i].Company);
            printf("Mfg Date          = %s\n",m[i].Mfg_Date);
            printf("Exp Date          = %s\n",m[i].Exp_Date);

            if(strcmp(m[i].info,"")!=0)
            {
                printf("Review or Info    = %s\n",m[i].info);
            }
            else
            {
                printf("Review or Info=Not Available\n");
            }
        }
    }
    if(flag==0)
    {
        printf("Entered Name Not Found\n");
    }
}
```
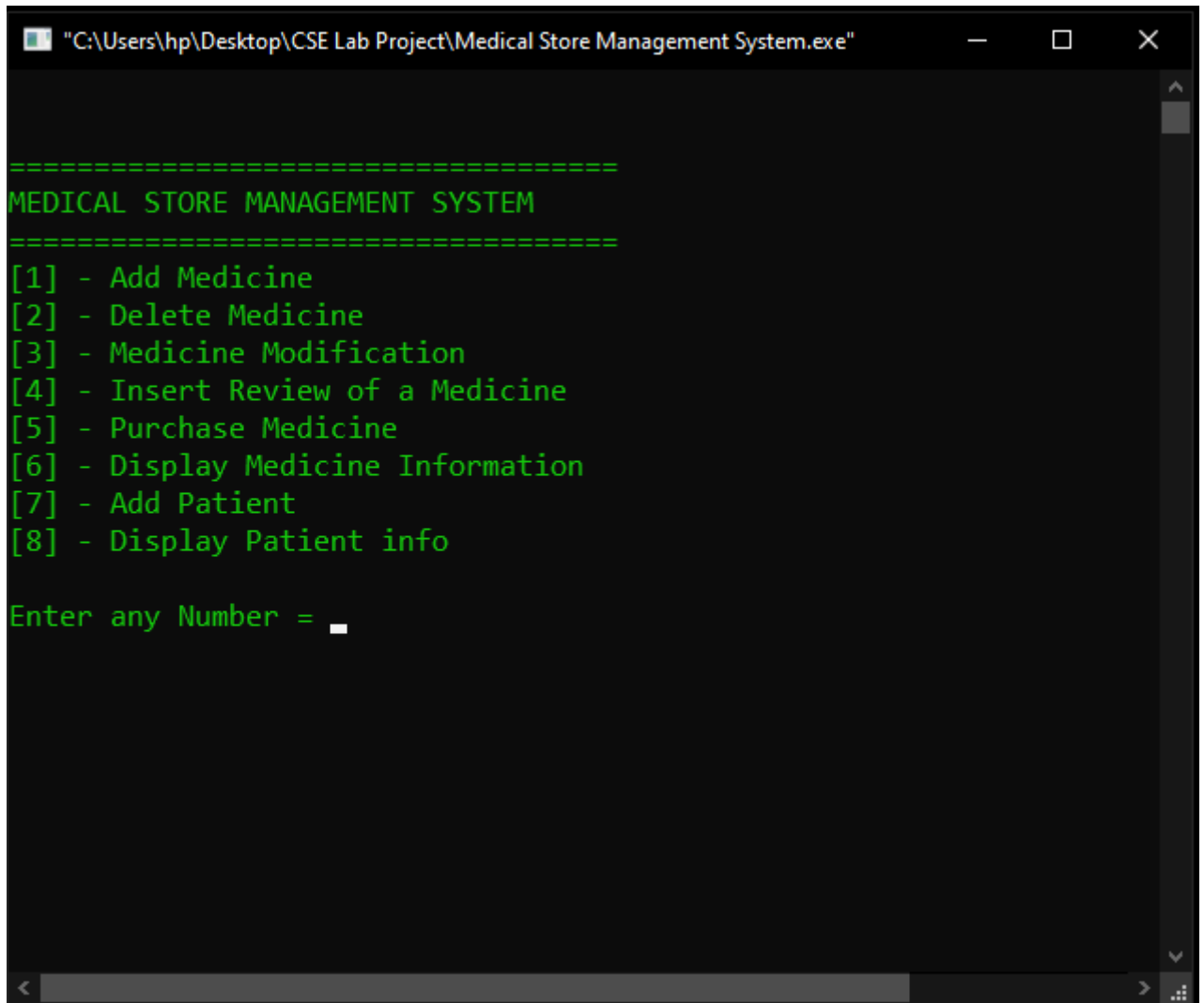
Project Output :

"C:\Users\hp\Desktop\CSE Lab Project\Medical Store Management System.exe"

```
====================================
MEDICAL STORE MANAGEMENT SYSTEM
====================================
[1] - Add Medicine
[2] - Delete Medicine
[3] - Medicine Modification
[4] - Insert Review of a Medicine
[5] - Purchase Medicine
[6] - Display Medicine Information
[7] - Add Patient
[8] - Display Patient info

Enter any Number = _
```

Step – 1 : Project Interface

```
"C:\Users\hp\Desktop\CSE Lab Project\Medical Store Management System.exe"        —    □    ×

Enter any Number = 1

        ADD MEDICINE
----------------------------
Enter Medicine Id        = 221
Enter Medicine Name      = Actizen_500mg
Enter Company Name       = Beximco ltd
Enter Manufactured Date  = 04-05-2022
Enter Expiry Date        = 05-12-2026
Enter Quantity           = 100
Enter Price              = 10
----------------------------

Medicine with id 221 Added Successfully

To Continue with other Options Enter 1 Else any other number
■
```

Step – 2 : Add Medicine

```
■ "C:\Users\hp\Desktop\CSE Lab Project\Medical Store Management System.exe"          —     □     ✕

[4] - Insert Review of a Medicine
[5] - Purchase Medicine
[6] - Display Medicine Information
[7] - Add Patient
[8] - Display Patient info

Enter any Number = 7

        PATIENT ID INSERTION
----------------------------


Enter patient ID           = 221902353
Enter patient name         = Khondokar_Saim
Enter patient age          = 22
Enter patient gender       = Male
Enter patient problem      = Fever,cold,cough
patient's medicine name    = Actizen_500mg,Napa_peracitamol_5mg
Enter patient phone number = 01608908147

To Continue with other Options Enter 1 Else any other number
```

Step – 3 : Add /Create Patient ID

```
"C:\Users\hp\Desktop\CSE Lab Project\Medical Store Management System.exe"              —      □      ✕

[6] - Display Medicine Information
[7] - Add Patient
[8] - Display Patient info

Enter any Number = 8

Enter patient ID to search for: 221902353

        DISPLAY PATIENT INFO
--------------------------------

ID              = 221902353
Name            = Khondokar_Saim
Age             = 22
Gender          = Male
problem         = Fever,cold,cough
Medicine Name   = Actizen_500mg,Napa_peracitamol_5mg
Phone Number    = 01608908147

To Continue with other Options Enter 1 Else any other number

■
```

Step – 4 : Display Patient Info

```
"C:\Users\hp\Desktop\CSE Lab Project\Medical Store Management System.exe"    —    □    ×

[5] - Purchase Medicine
[6] - Display Medicine Information
[7] - Add Patient
[8] - Display Patient info

Enter any Number = 6


        DISPLAY MEDICINE INFORMATION
-----------------------------
Enter Name of the medicine you want to see Review and Info
Actizen_500mg


These are the details of Medicine
_____
Name                = Actizen_500mg
Price               = 10
Available Quantity = 100
Company             = Beximco ltd
Mfg Date            = 04-05-2022
Exp Date            = 05-12-2026
Review or Info=Not Available


To Continue with other Options Enter 1 Else any other number
```

Step – 5 : Display Medicine Info

```
        PURCHASE MEDICINE
-----------------------------

Enter 1 if you know ID / else enter Name of Medicine
1

Enter Id to purchase Medicine
221

These are the details of Medicine
_____
Name                = Actizen_500mg
Price               = 10
Available Quantity  = 100
Company             = Beximco ltd
Mfg Date            = 04-05-2022
Exp Date            = 05-12-2026
Medicine Review     = Not Available

Do you want to purchase Actizen_500mg
If Yes Enter 1 else any other number
1

Enter Quantity to Purchase = 20
Total Price to be paid     = 200

To Continue with other Options Enter 1 Else any other number
```
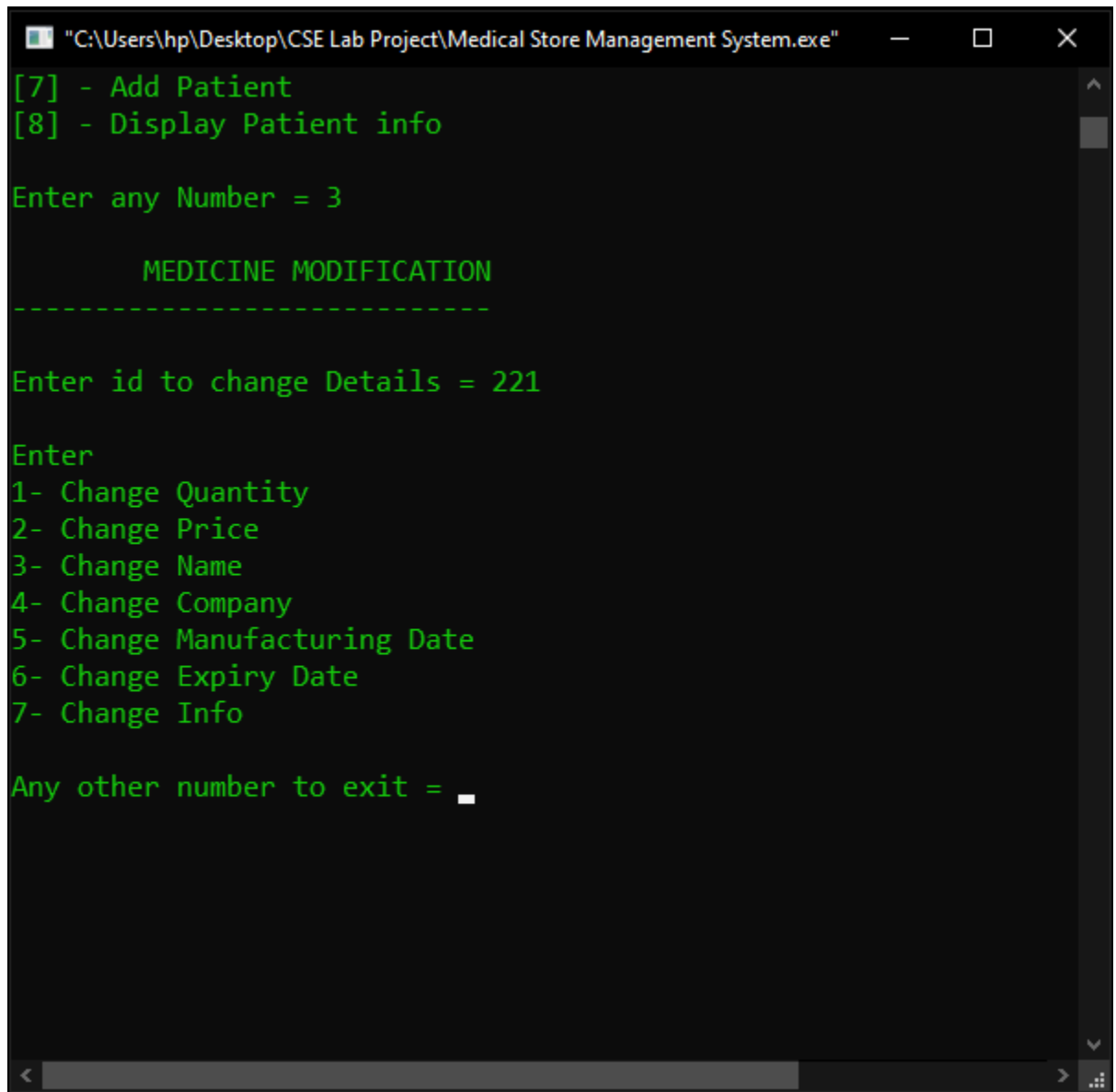
Step – 6 : Purchase Medicine

```
■ "C:\Users\hp\Desktop\CSE Lab Project\Medical Store Management System.exe"      —      □      ×

[7] - Add Patient
[8] - Display Patient info

Enter any Number = 3


        MEDICINE MODIFICATION
---------------------------

Enter id to change Details = 221

Enter
1- Change Quantity
2- Change Price
3- Change Name
4- Change Company
5- Change Manufacturing Date
6- Change Expiry Date
7- Change Info

Any other number to exit = _
```

Step – 7 : Medicine Modification Interface

```
"C:\Users\hp\Desktop\CSE Lab Project\Medical Store Management System.exe"          —     □     ×

[8] - Display Patient info

Enter any Number = 4

        INSERT REVIEW OF A MEDICINE
-----------------------------
Enter Name of the medicine you want to Review or include Info = Actizen_500mg

These are the details of Medicine
_____
Name                = Actizen_500mg
Price               = 10
Available Quantity  = 100
Company             = Beximco ltd
Mfg Date            = 04-05-2022
Exp Date            = 05-12-2026
Enter review        = Stock out! need this product as soon as possible

To Continue with other Options Enter 1 Else any other number
```

Step – 6 : Insert Review of a Medicine

```
■ "C:\Users\hp\Desktop\CSE Lab Project\Medical Store Management System.exe"    —    □    ×


===================================
MEDICAL STORE MANAGEMENT SYSTEM
===================================
[1] - Add Medicine
[2] - Delete Medicine
[3] - Medicine Modification
[4] - Insert Review of a Medicine
[5] - Purchase Medicine
[6] - Display Medicine Information
[7] - Add Patient
[8] - Display Patient info

Enter any Number = 2


        DELETE MEDICINE
---------------------------


Enter Id to be deleted = 221
***Medicine with 221 is Deleted Successfully***

To Continue with other Options Enter 1 Else any other number
■
```

Step – 5 : Delete Medicine