Siddaganga Institute of Technology, Tumakuru

(An Autonomous Institution affiliated to Visvesvaraya Technological University, Belagavi, Approved by AICTE, New Delhi, Accredited by NAAC and ISO 9001:2015 certified)

A Report on Open Ended Problem titled

"MediZone –A Pharmaceutical

Management System"

submitted
in the partial fulfillment of the requirements for IV semester
Bachelor of Engineering
In
Computer Science and Engineering

by

SAMEER KUMAR KALYANSHETTI - 1SI20CS099

SUDESH S KINI - 1SI20CS114

SATHVIK K R - 1SI20CS101

Department of Computer Science & Engineering

(Program Accredited by NBA)

Siddaganga Institute of Technology

B.H Road, Tumakuru-572 103, Karnataka, India.
Web:www.sit.ac.in

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CERTIFICATE

This is to certify that open ended problem titled "MediZone -A Pharmaceutical Management System" is a bonafide work carried out by Sameer Kumar Kalyanshetti (1SI20CS099) Sudesh S Kini (1SI20CS114) Sathvik K R (1SI20CS101) of IV semester Bachelor of Engineering in Computer Science andEngineering of the SIDDAGANGA INSTITUTE OF TECHNOLOGY (An Autonomous Institution, affiliated to VTU, Belagavi, Approved by AICTE, New Delhi, Accredited by NAAC and ISO 9001:2015 certified) during theacademic year 2021-2022.

Name of the Panel Members   Signature with Date

   1.   Mr. Gururaj S P
   2.   Mrs. Nousheen Taj

ABSTRACT

Pharmacists empower patients by helping them tackle illness and boosting their confidence. They impart knowledge, they motivate, they help patients to help themselves. Pharmacists are the first port of call in a health crisis, and sometimes even save lives! Care beyond prescriptions and medicine.

Pharmaceutical care is the direct or indirect responsible provision of drug-therapy for the purpose of achieving the elimination or reduction of a patient's symptoms; arresting or slowing of a disease process; or preventing a disease. The pharmaceutical industry discovers, develops, produces, and markets drugs or pharmaceutical drugs for use as medications to be administered to patients, with the aim to cure them, vaccinate them, or alleviate the symptoms. Pharmaceutical companies may deal in generic or brand medications and medical devices. They are subject to a variety of laws and regulations that govern the patenting, testing, safety, efficacy and marketing of drugs.

During these pandemic times the health of the people working in the pharmaceutical industries including medical stores, hospitals will be at high risk, they often come across interacting with patients and animals (for veterinary doc.) and the stake is health which is crucial in these days. **MediZone** would solve this problem and reducing or possibly avoiding the contact of health care workers with infected people or patients. This also helps users in diagnose their health issue with the chatBot and fetch solution from the medical experts.

TECHNOLOGY STACK

Object Oriented Programming using C++

- Class and Objects
- Friend and Inline Functions
- Constructor and Destructor
- Inheritance
- Files

Visual Studio Code Editor with GNU GCC Compiler

TABLE OF CONTENTS:

CHAPTER 1

INTRODUCTION

MEDIZONE is a pharmaceutical management system which consists of a Chatbot that helps patients in diagnosing their health issue and get help from the doctors and it's a self-checkout medical store management system in which the customer can browse through all the health care products and go on adding them to his cart and later on checkout without intervention of any worker in this process, which is very crucial in this pandemic situation. The system consists of two types of users, the first one is Admin and the second one is Customer.

The Admin possesses all the rights to Add, Delete, Update the inventory after he logs in the system using his/her pin which would be set by the same in the beginning. The Customer can explore all the health care products which would be added by the Admin and buy them according to his/her needs and make payment in cashless mode.

CHAPTER 2

PROBLEM STATEMENT

To build an application for self-check-out system for medical stores – "MediZone – A Pharmaceutical Management System by which health care workers can reduce or possibly avoid the contact with infected people or patients. The code is written using Object Oriented programming with C++ including class and objects, friend and in-line functions, constructor and destructor, inheritance concept and files in Visual Studio Code Editor with GNU GCC Compiler

OBJECTIVES

1. To provide a contactless self-checkout facility for customers (patients).

2. To help customers to diagnose their health issue with the ChatBot by answering a few basic questions.

3. To reduce the contact of medical store workers with the patients during pandemic.

4. Hassel free self-check-out system for users.

5. Easy and effortless buying of health care products

IMPLEMENTATION OF CODE

```cpp
#include<iostream>
#include<iomanip>
#include<fstream>
#include<cstring>

using namespace std;

int count=0,j=0,m=0;
class item
{
public:

    string itemname;
    float price;
    int stock;

    ~item()
    {

        stock=0;
    }
    friend void add(item a[],int h);
    friend void display(item b[],int j);
};
class person
{

protected:
    string name;
public:
    void getname()
    {
        cout<<"\n\t\t\t\t\t\tEnter your name:";
        cin>>name;
    }

};

class admin:public person
{

    string pin,cpin;
```

```cpp
public:
    admin()
    {
        cout<<"\n\t\t\t\t\tEnter your name:";
        cin>>name;
set:
        cout<<"\n\t\t\t\t\tSet your pin:";
        cin>>pin;
        cout<<"\n\t\t\t\t\tConfirm your pin:";
        cin>>cpin;

        if(pin==cpin)
        {
            cout<<"\n\t\t\t\t\tAccount created successfully.\n";
            ofstream fp;
            fp.open("admin.txt");
            fp<<cpin<<endl;
            fp.close();


        }
        else
        {
            cout<<"\n\t\t\t\t\tInvalid pin !!!\n";
            goto set;
        }

    }
    friend void update(item x[],int j,int y);
    friend void adminupdate(item x[],int j,int y);
};


class customer:public person
{
    string mail,ph;

    float bill=0;
public:
    void getdetails()
    {
        cout<<"\n\t\t\t\t\tEnter your phone number:";
        cin>>ph;
        cout<<"\n\t\t\t\t\tEnter your mail-id:";
        cin>>mail;

    }
    void buy(item o[]);
};
class cart
{
public:
```

```cpp
    string iname;
    int quant;
    float rate,sum=0;

    friend void displaybill(cart d[],int m,float bill);
    void updatecart(string a,int q,float p)
    {
        iname=a;
        quant=q;
        rate=p;
        sum=q*p;

    }
};


void update(item x[],int j,int y)
{
    x[j].stock = x[j].stock - y;
}
void adminupdate(item x[],int j,int y)
{
    x[j].stock = y;
}
void add(item a[],int h)
{
    cout<<"\n\t\t\t\t\tEnter the item name:";
    cin>>a[h].itemname;
    cout<<"\n\t\t\t\t\tEnter item price per unit:";
    cin>>a[h].price;
    cout<<"\n\t\t\t\t\tEnter the stock availability:";
    cin>>a[h].stock;
    cout<<"\n\t\t\t\t\t"<<a[h].itemname<<" is added successfully.\n";
}

void display(item b[],int j)
{
    int i;
    for(i=0; i<j; i++)
    {
        cout<<"\n\t\t\t\t\t"<<b[i].itemname<<" "<<"Stock :"<<b[i].stock<<" "<<"Price per unit:"<<b[i].price;
        cout<<"\t";
        if(i>0)
        {
            if(i%2==0)
                cout<<endl;
        }


    }
}

void customer ::buy(item o[])
```

```cpp
{
    int t,q,m=0,opt;
    cart n[99];
retry:
    cout<<"\n\t\t\t\t\tSelect the item:";
    cin>>t;
    cout<<"\n\t\t\t\t\t"<<o[t-1].itemname<<" "<<"Price per unit:"<<o[t-1].price<<" "<<"Stock :"<<o[t-1].stock<<endl;

    cout<<"\n\t\t\t\t\tEnter the quantity:";
    cin>>q;
    if(q>o[t-1].stock)
    {
        cout<<"\n\t\t\t\t\tInsufficient Stock !!!\n";
        goto retry;

    }

    bill+=q*o[t-1].price;
    n[m].updatecart(o[t-1].itemname,q,o[t-1].price);
    update(o,t-1,q);
g:
    cout<<"\n\t\t\t\t\tPress 0 to continue Shopping\n\t\t\t\t\tPress 1 to Checkout\n";
    cin>>opt;
    if(opt==0)
    {

        m++;
        goto retry;
    }
    else if(opt==1)
    {
        displaybill(n,m,bill);
    }
    else
    {
        cout<<"\n\t\t\t\t\tInvalid choice !!!\n";
        goto g;
    }

}

void displaybill(cart d[],int m,float bill)
{
    int i;

cout<<left<<setw(10)<<"NAME"<<left<<setw(5)<<"QUANTITY"<<left<<setw(8)<<"Price/unit"<<left<<setw(5)<<"AMOUNT"<<endl;
    for(i=0; i<=m; i++)
    {
        cout
            << left
            << setw(10)
```

```
            << d[i].iname
            << left
            << setw(5)
            <<  d[i].quant
            << left
            << setw(8)
            <<  d[i].rate
            << left
            << setw(5)
            <<  d[i].sum
            << endl;
    }
    cout<<left<<setw(50)<<"TOTAL"<<":"<<setw(10)<<bill<<endl;
    for(i=0; i<80; i++)
        cout<<"-";
    cout<<endl;
    cout<<left<<setw(50)<<"GRAND TOTAL"<<":"<<setw(10)<<(0.18*bill)+bill<<endl;
    for(i=0; i<80; i++)
        cout<<"-";
}

void chatbot()
{

    int chatc,flag=0,f;
    char b;
    while(1)
    {
        cout<<"\n\t\t\t\t\tAnswer few basic questions and get help from our experts:";
        cout<<"\n\t\t\t\t\tYour problem is related to:\n"<<endl;
        cout<<"\t\t\t\t\t 1.Eyes\n\t\t\t\t\t 2.Nose\n \t\t\t\t\t 3.Stomach\n\t\t\t\t\t 4.Muscle\n\t\t\t\t\t 5.Skip
anyway\n";
        cout<<"\n\t\t\t\t\tEnter your choice:";
        cin>>chatc;
        switch(chatc)
        {
        case 1:
            cout<<"\t\t\t\t\tDo you have itching eyes (y/n):";
            cin>>b;
            if(b=='y')
                flag++;
            cout<<"\t\t\t\t\tDo you have red/pink colored eyes (y/n):";
            cin>>b;
            if(b=='y')
                flag++;
            cout<<"\t\t\t\t\tDo you get puss at eye corners in the morning (y/n):";
            cin>>b;
            if(b=='y')
                flag++;
            cout<<"\t\t\t\t\tHow long has this been going on:";
            cin>>f;
            if(flag>2)
            {
```

```cpp
        cout<<"\n\t\t\t\t\tYou have symptoms of Allergic Conjuctivities.";
        cout<<"\n\t\t\t\t\tThese are the prescribed tablets by our doctors:";
        cout<<"\n\t\t\t\t\t 1.Fluorosine\n\t\t\t\t\t 2.Fluorometholone\n";
        return;
      }
      break;

    case 2:
      flag=0;


      cout<<"\t\t\t\t\tDo you have running nose (y/n):";
      cin>>b;
      if(b=='y')
        flag++;
      cout<<"\t\t\t\t\tDou you feel difficulty in breathing (y/n):";
      cin>>b;
      if(b=='y')
        flag++;
      cout<<"\t\t\t\t\tDo you have itching throat (y/n):";
      cin>>b;
      if(b=='y')
        flag++;
      cout<<"\t\t\t\t\tDo you have cough,fever,and headache (y/n):";
      cin>>b;
      if(b=='y')
        flag++;
      cout<<"\t\t\t\t\tHow long has this been going on:";
      cin>>f;
      if(b=='y')
        flag++;
      if(flag>=3)
      {
        cout<<"\n\t\t\t\t\tYou have symptoms of Viral Cold.";
        cout<<"\n\t\t\t\t\tThese are the prescribed tablets by our doctors:";
        cout<<"\n\t\t\t\t\t 1.Dolo 650\n\t\t\t\t\t 2.Sinarest\n\t\t\t\t\t 3.Vicks action 500\n";
        return;
      }
      else
      {
        cout<<"\n\t\t\t\t\tYou have mild symptoms of cold.";
        cout<<"\n\t\t\t\t\tThese are the prescribed tablets by our doctors:";
        cout<<"\n\t\t\t\t\t 1.Sinarest\n\t\t\t\t\t 2.Vicks action 500\n";
        return;
      }
      break;
    case 3 :
      flag=0;
      cout<<"\t\t\t\t\tDo you have burning pain in chest,bitter taste,frequent burping and hiccups,dry cough
(y/n):";
      cin>>b;
      if(b=='y')
      {
```

```
            flag++;
            cout<<"\n\t\t\t\t\tYou have symptoms of Acidity.";
            cout<<"\n\t\t\t\t\tThese are the prescribed medicine by our doctors:";
            cout<<"\n\t\t\t\t\t1.Digene\n\t\t\t\t\t 2.Eno\n";
            return;
        }
        if(b=='n')
        {
            cout<<"\n\t\t\t\t\tDo you have cramps in stomach (y/n):";
            cin>>b;
            if(b=='y')
            {
                flag++;
                cout<<"\n\t\t\t\t\tThese are the prescribed tablets by our doctors:";
                cout<<"\n\t\t\t\t\t1.Buscopan\n\t\t\t\t\t 2.Buscogast\n";
                return;
            }
            if(b=='n')
            {
                cout<<"\t\t\t\t\tDo you have dysentry (y/n):";
                cin>>b;
                if(b=='y')
                {
                    flag++;
                    cout<<"\n\t\t\t\t\tThese are the prescribed tablets by our doctors:\n";
                    cout<<"\n\t\t\t\t\t1.Diasyn\n\t\t\t\t\t 2.Norflox\n";
                    return;

                }

            }

        }
        break;
    case 4:
        flag=0;
        cout<<"\t\t\t\t\tDo you have muscle ache (y/n):";
        cin>>b;
        if(b=='y')
        {
            flag++;
            cout<<"\n\t\t\t\t\tThese are the prescribed tablets by our doctors:\n";
            cout<<"\n\t\t\t\t\t 1.Crocin\n\t\t\t\t\t 2.Crampnil\n";
            return;

        }

        cout<<"\t\t\t\t\tDo you have muscle catch (y/n):";
        cin>>b;
        if(b=='y')
        {
            flag++;
            cout<<"\n\t\t\t\t\tThese are the prescribed tablets by our doctors:\n";
```

```cpp
            cout<<"\n\t\t\t\t\t\t 1.Nexneuron\n\t\t\t\t\t\t 2.Catch D3 500\n";
            return;

        }


    case 5:
        return;
        break;
    default:
        cout<<"\n\t\t\t\t\t\tInvalid choice !!!\n";
    }



    }


}


int main()
{

    item t[999];
    customer c[9999];
    int choice,opt,sel,k=0,u;
    string pin,checkpin;
    system("Color F1");
    cout<<"\n\t";
    for(int r=0; r<190; r++)
        cout<<"*";
    cout<<"\n\n\t\t\t\t\t\t\tMediZone\n\n\t";
    for(int r=0; r<190; r++)
        cout<<"*";
    cout<<"\n\n";
    chatbot();
    while(1)
    {
here:
        cout<<"\n\t\t\t\t\t 1.Admin\t\t 2.Customer\t\t 3.Chatbot\t\t 4.Exit\n";
        cout<<"\t\t\t\t\tEnter your choice:";
        cin>>choice;
        switch (choice)
        {
        case 1:
            if(count==0)
            {
                cout<<"\n\t\t\t\t\tAdmin SignUp\n";
                admin a;
                count++;
            }
            else
```

```cpp
    {
        cout<<"\n\t\t\t\t\tAdmin Login:";
jump:
        cout<<"\n\t\t\t\t\tEnter your pin:";
        cin>>pin;
        ifstream fp;
        fp.open("admin.txt");

        while ( !fp.eof() )
        {

            fp>>checkpin;
        }

        if( pin==checkpin)
        {
            cout<<"\n\t\t\t\t\tLogged in Successfully\n";
            while(1)
            {
                cout<<"\n\t\t\t\t\t 1.Add\t\t 2.Display Stock\t\t 3.Update\t\t 4.Delete\t\t 5.Log-out\n";
                cout<<"\n\t\t\t\t\tEnter your choice:";
                cin>>opt;
                switch (opt)
                {
                case 1:
                    add(t,j);
                    j++;
                    break;
                case 2:

                    display(t,j);
                    break;
                case 3:
                    cout<<"\n\t\t\t\t\tSelect the item:";
                    cin>>sel;
                    cout<<"\n\t\t\t\t\tEnter the available stock:";
                    cin>>u;
                    adminupdate(t,sel-1,u);
                    break;
                case 4:
                    cout<<"\n\t\t\t\t\tSelect the item you want to delete:";
                    cin>>sel;
                    t[sel-1].~item();
                    break;
                case 5:
                    goto here;


                default:
                    cout<<"\n\t\t\t\t\tInvalid choice !!!\n";


                }
```

```cpp
            }
          }
          else
          {

             cout<<"\n\t\t\t\t\t\tInvalid pin !!!\n";
             goto jump;
          }
        }
        break;
      case 2:
newcust:
        c[k].getname();
        c[k].getdetails();
        while(1)
        {
          cout<<"\n\t\t\t\t\t 1.Display\t\t 2.Buy\t\t 3.Exit\t\t 4.MainMenu\n";
          cout<<"\t\t\t\t\tEnter your choice:";
          cin>>opt;
          switch (opt)
          {
          case 1:
             display(t,j);

             break;
          case 2:
             c[k].buy(t);
             k++;
             cout<<"\n\t\t\t\t\t\tThanks for shopping !!!!\n";
             break;
          case 3:
             goto newcust;
             break;
          case 4:
             goto here;
             break;

          default:
             cout<<"\n\t\t\t\t\t\tInvalid choice !!!\n";
          }
        }
      case 3:
        chatbot();
        break;
      case 4:
        exit(0);

      default:
        cout<<"\n\t\t\t\t\t\tInvalid choice !!!\n";


      }
```

```
    }


    return 0;
}
```

CHAPTER 4

RESULT ANALYSIS DETAILS

```
*****************************************************************************************************************************************************************
                                                  MediZone
*****************************************************************************************************************************************************************

                    Answer few basic questions and get help from our experts:
                    Your problem is related to:

                     1.Eyes
                     2.Nose
                     3.Stomach
                     4.Muscle
                     5.Skip anyway

                    Enter your choice:_
```

```
Answer few basic questions and get help from our experts:
Your problem is related to:

 1.Eyes
 2.Nose
 3.Stomach
 4.Muscle
 5.Skip anyway

Enter your choice:2
Do you have running nose (y/n):y
Dou you feel difficulty in breathing (y/n):y
Do you have itching throat (y/n):y
Do you have cough,fever,and headache (y/n):y
How long has this been going on:2

You have symptoms of Viral Cold.
These are the prescribed tablets by our doctors:
 1.Dolo 650
 2.Sinarest
 3.Vicks action 500
```

Figure 5.1: Welcome screen – ChatBot

Figure 5.1 shows the welcome screen: Here in welcome screen, we get input prompt to select needed option by the user

```
Answer few basic questions and get help from our experts:
Your problem is related to:

 1.Eyes
 2.Nose
 3.Stomach
 4.Muscle
 5.Skip anyway

Enter your choice:1
Do you have itching eyes (y/n):y
Do you have red/pink colored eyes (y/n):y
Do you get puss at eye corners in the morning (y/n):y
How long has this been going on:5

You have symptoms of Allergic Conjuctivities.
These are the prescribed tablets by our doctors:
 1.Fluorosine
 2.Fluorometholone

 1.Admin              2.Customer           3.Chatbot           4.Exit
Enter your choice:
```

Figure 5.2: Main menu screen

Figure 5.2 Here user enters faces the main menu where he can choose

either admin or customer domain after interfacing chatbot and getting info. from medical experts

Figure 5.3 Admin Domain

Figure 5.3 Here system shows the user after he selects admin domain and creates his/her account by entering valid details and this would be stored in a .txt file named "admin"

```
Logged in Successfully
 1.Add          2.Display Stock          3.Update          4.Delete          5.Log-out
Enter your choice:1
Enter the item name:Paracetamol
Enter item price per unit:5
Enter the stock availability:100
Paracetamol is added successfully.
 1.Add          2.Display Stock          3.Update          4.Delete          5.Log-out
Enter your choice:1
Enter the item name:Antacid
Enter item price per unit:10
Enter the stock availability:20
Antacid is added successfully.
 1.Add          2.Display Stock          3.Update          4.Delete          5.Log-out
Enter your choice:1
Enter the item name:Ibuprofen
Enter item price per unit:20
Enter the stock availability:10
Ibuprofen is added successfully.
 1.Add          2.Display Stock          3.Update          4.Delete          5.Log-out
Enter your choice:1
Enter the item name:PainKiller500mg
Enter item price per unit:10
Enter the stock availability:40
PainKiller500mg is added successfully.
 1.Add          2.Display Stock          3.Update          4.Delete          5.Log-out
Enter your choice:
```

```
 1.Add          2.Display Stock        3.Update        4.Delete        5.Log-out

Enter your choice:2

Paracetamol Stock :100 Price per unit:5
Antacid Stock :20 Price per unit:10
Ibuprofen Stock :10 Price per unit:20

PainKiller500mg Stock :40 Price per unit:10
 1.Add          2.Display Stock        3.Update        4.Delete        5.Log-out

Enter your choice:4

Select the item you want to delete:3

 1.Add          2.Display Stock        3.Update        4.Delete        5.Log-out

Enter your choice:2

Paracetamol Stock :100 Price per unit:5
Antacid Stock :20 Price per unit:10
Ibuprofen Stock :0 Price per unit:20

PainKiller500mg Stock :40 Price per unit:10
 1.Add          2.Display Stock        3.Update        4.Delete        5.Log-out

Enter your choice:■
```

Figure 5.4 Admin manipulating items in the stock

Figure 5.4 Here admin can manipulate the stock depending upon his/her wish.

```
 1.Add            2.Display Stock          3.Update          4.Delete          5.Log-out

Enter your choice:5

 1.Admin              2.Customer          3.Chatbot          4.Exit
Enter your choice:2

Enter your name:Sathvik

Enter your phone number:1112223333

Enter your mail-id:sat@gmail.com

 1.Display              2.Buy          3.Exit          4.MainMenu
Enter your choice:1

Paracetamol Stock :100 Price per unit:5
Antacid Stock :20 Price per unit:10
Ibuprofen Stock :0 Price per unit:20

PainKiller500mg Stock :40 Price per unit:10
 1.Display              2.Buy          3.Exit          4.MainMenu
Enter your choice:_
```

```
 PainKiller500mg Stock :40 Price per unit:10
  1.Display              2.Buy          3.Exit          4.MainMenu
 Enter your choice:2

 Select the item:1

 Paracetamol Price per unit:5 Stock :100

 Enter the quantity:10

 Press 0 to continue Shopping
 Press 1 to Checkout


 Select the item:2

 Antacid Price per unit:10 Stock :20

 Enter the quantity:1

 Press 0 to continue Shopping
 Press 1 to Checkout
```

Figure 5.5 Customer Domain

Figure 5.5 Here, customer can buy add items to his/her cart depending upon his/her needs and he can manipulate the cart as well.

```
NAME      QUANTITYPrice/unitAMOUNT
Paracetamol10    5        50
Antacid   1    10        10
TOTAL                                       :60
--------------------------------------------------------------------------
GRAND TOTAL                                 :70.8
--------------------------------------------------------------------------
                                 Thanks for shopping !!!!
```

Figure 5.6 Billing Section

Figure 5.6 Here, customer can get his bill generated along with 18% GST included on Medicine .

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CONCLUSION

MediZone – A Pharmaceutical Management System helps in easy and effortless buying of health care products and helps user in reducing the contact with infected individuals and helps in diagnosis of the health issue of the patients with the help of ChatBot and fetch help from the medical experts which is very crucial in these days.

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