Hospital Management System

Undergraduate Project

Submitted in partial fulfilment of the requirements of software development project 1 for the degree of B.Sc. Engineering in CSE.

Under Supervision of

Md. Saddam Hossain

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Bangladesh University of Business and Technology

Hospital Management System

Group Member List

Name	ID	Intake
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Declaration of Authorship

We, Fariya Ahmed, Md.Nabil Rahman, Shanto Sikder, Mosharof Parves, and Md. Amzad Hosen declare that-

1. This project titled, " Hospital Management System" and the work presented in it is our own.

2. We confirm that: This work was done entirely while in candidature for a B.Sc Engineering in CSE degree at this University.

3. We own every single part of this Software.

_____

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Date

Certificate

This is to certify that the project entitled, "Hospital Management System" and submitted by Fariya Ahmed, Md.Nabil Rahman, Shanto Sikder, Mosharof Parves, and Md. Amzad Hosen. ID No. 2021120317, 20211203047, 20211203048, 20211203050, 20211203053
in partial fulfillment of embodies and their requirements work under my supervision.

Md. Saddam Hossain

Lecturer , Department of C.S.E

Bangladesh University of Business and Technology Technology

Date:

Dedication

Dedicated to our parents for all their love and inspiration.

Abstract

Hospital management system is a computer system that can be used to manage the information of any Hospital. The admin panel has full control over the software and it can be fully customized according to the specific needs of any
Hospital management system. And also The User panel can know some info for their needs. That's why it's a universal project to manage the info.

Approval

This project " Hospital Management System " was submitted by Fariya Ahmed, Md.Nabil Rahman, Shanto Sikder, Mosharof Parves, and Md. Amzad Hosen. ID No. 2021120317, 20211203047, 20211203048, 20211203050, 20211203053. Department of Computer Science andEngineering (CSE), Bangladesh University of Business and Technology (BUBT) underthe supervision of Md. Saddam Hossain; Lecturer, Department of C.S.E has been accepted as satisfactory for the partial fulfillment of the requirement for the degreeof Bachelor of Science (B.Sc. Engg.) in Computer Science and Engineering and approved as to its style and contents.

_____

Md. Saddam Hossain

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Content

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Chapter - 1

Introduction

This chapter gives an overview about the aim, objective and operation environment of the system.

Project Aim and Objective

The project aims and objectives that will be achieved after completion of this project are discussed in this subchapter. The aims and objectives are as follow:

- To be familiar with resource reusability by making user defined function.
- Admin login page where admin can add Patients, Doctors, also can view them.
- A search column to search availability of Patient.
- User login page where user can find Doctor Information, and Doctor Booking Information.
- To make the program easy while running it.
- To concise the memory of program as far as possible.
- To get an idea about making a simple project using C++.
- To be able to work in a group as a team sharing different responsibilities.

Operation Environment

In computer software, an operating environment or integrated applications environment is the environment in which users run application software. The environment of a user interface is provided by an application manager and usually an application programming interface (API) to the application manager.

We used Code::Blocks-20.03 for our development.

Chapter – 2

System Analysis

System Requirement and Specification

In order to run this software we are going to need Code::Blocks-20.03 And GNU GCC Compiler.

Existing VS Proposal

The proposed system is intended to make life easy. The main purpose of the project is to build a software which make everything easy. It's is so simple to use and various important task like add Patient and Doctors also can view and delete them. And also can manage the Hospital.

Software Tool Used

Code Editor – Code::Blocks-20.03

Programming language – C++

Compiler - GCC compiler

Chapter - 3

System Design

3.1 Flow-Chart

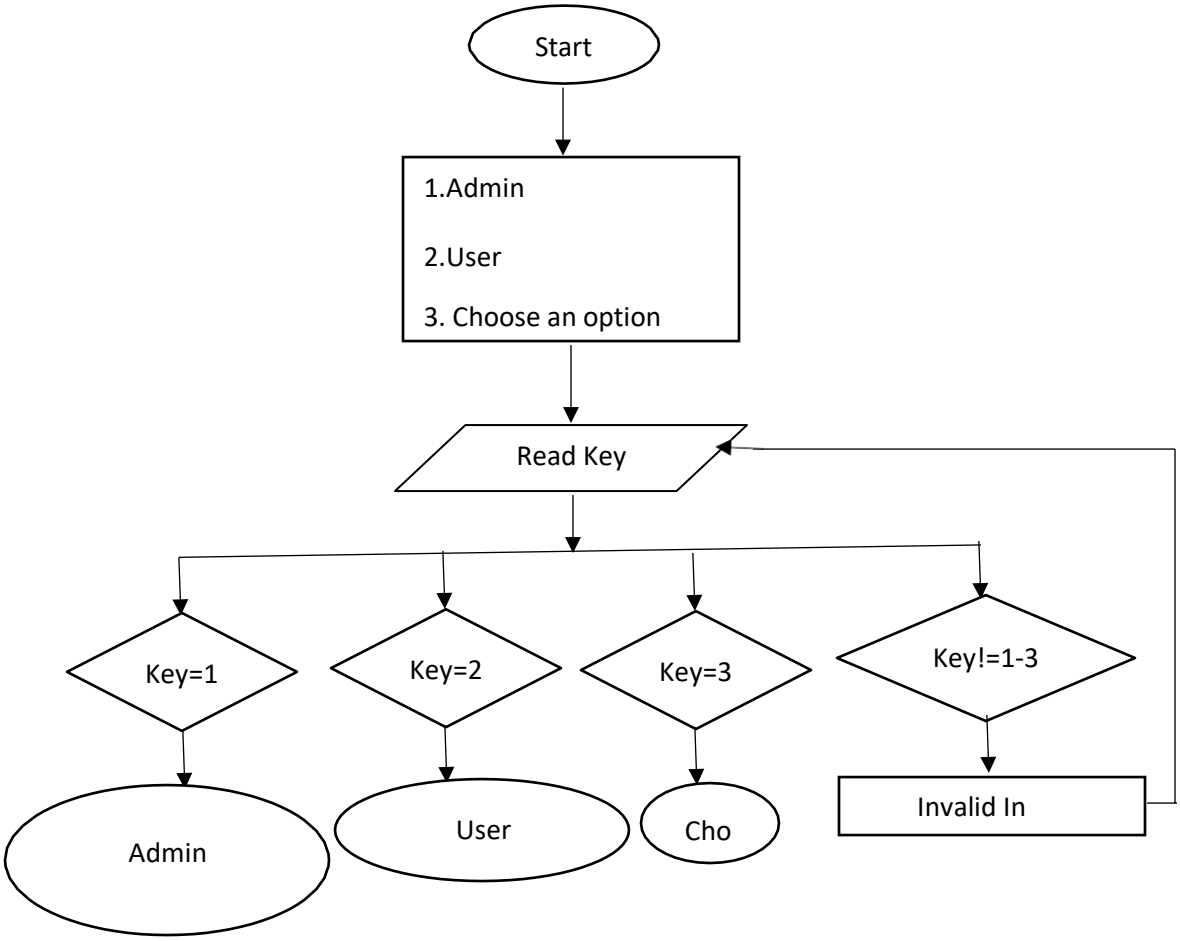
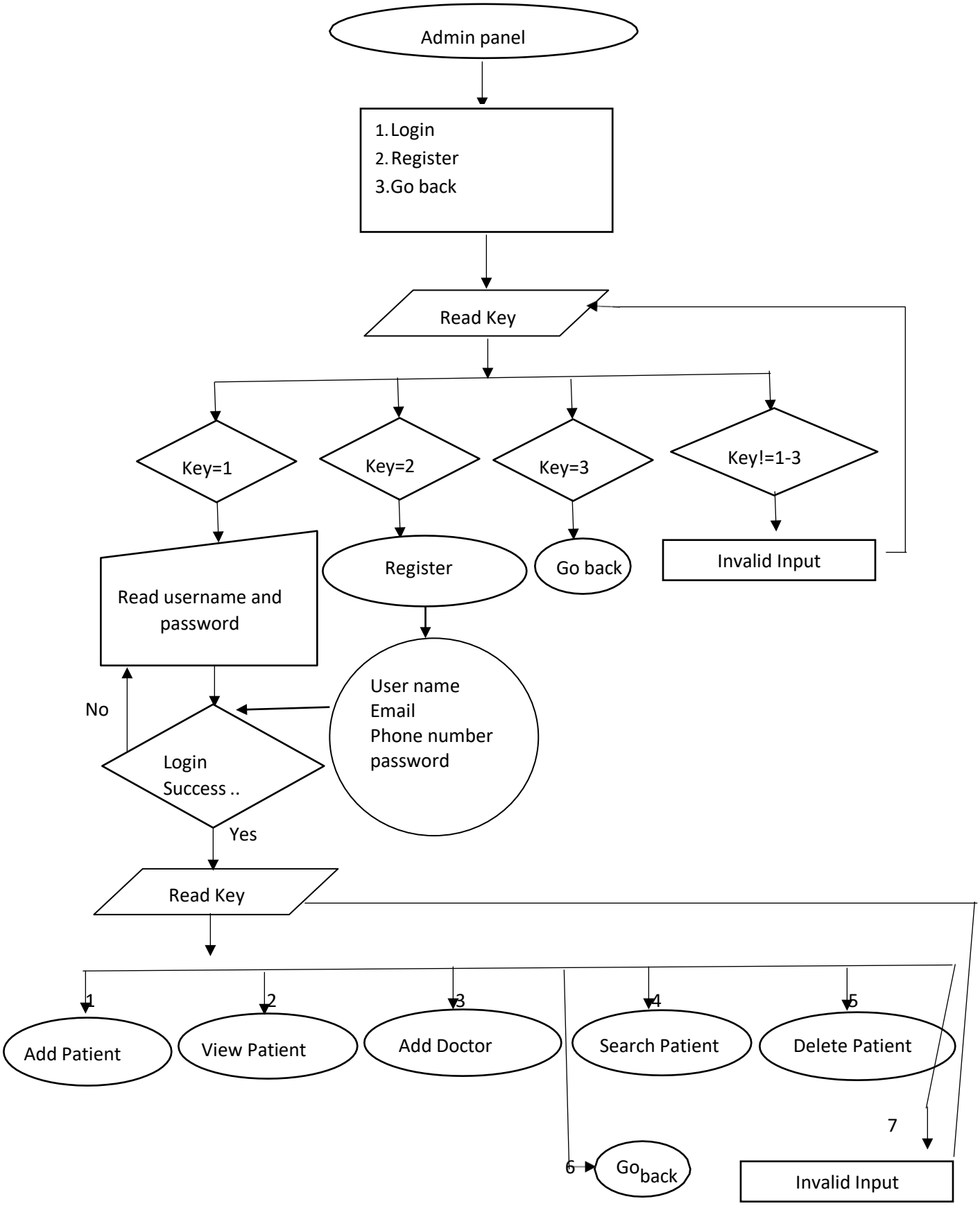


Figure – 1

Figure – 2


Admin panel
1. Login
2. Register
3.Go back
Read Key
Key=1
Key=2
Key=3
Key!=1-3
Read username and password
Register
Go back
Invalid Input
User name
Email
Phone number
password
No
Login Success ..
Yes
Read Key
1
2
3
4
5
Add Patient
View Patient
Add Doctor
Search Patient
Delete Patient
7
6
Go back
Invalid Input

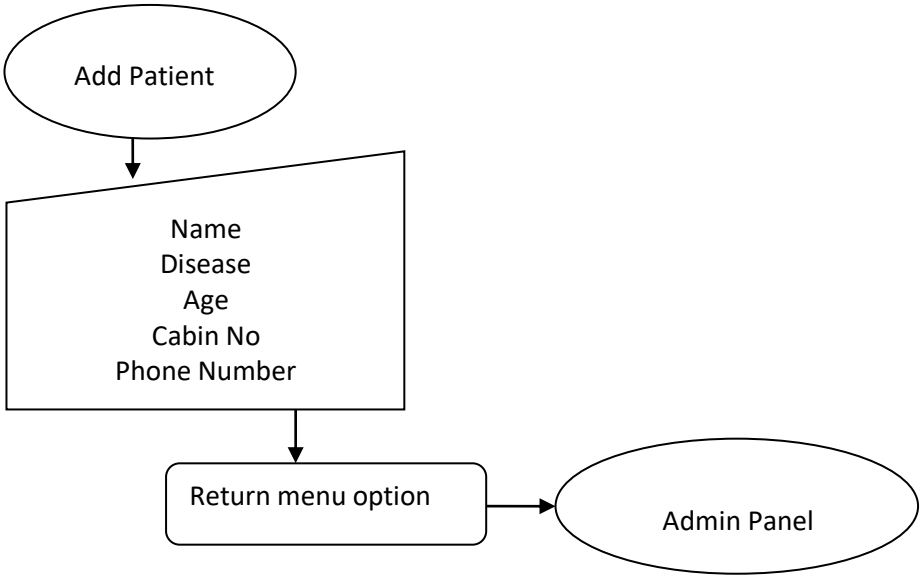


Figure – 3

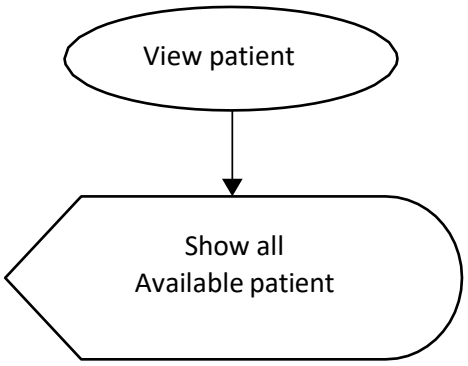


Figure – 4

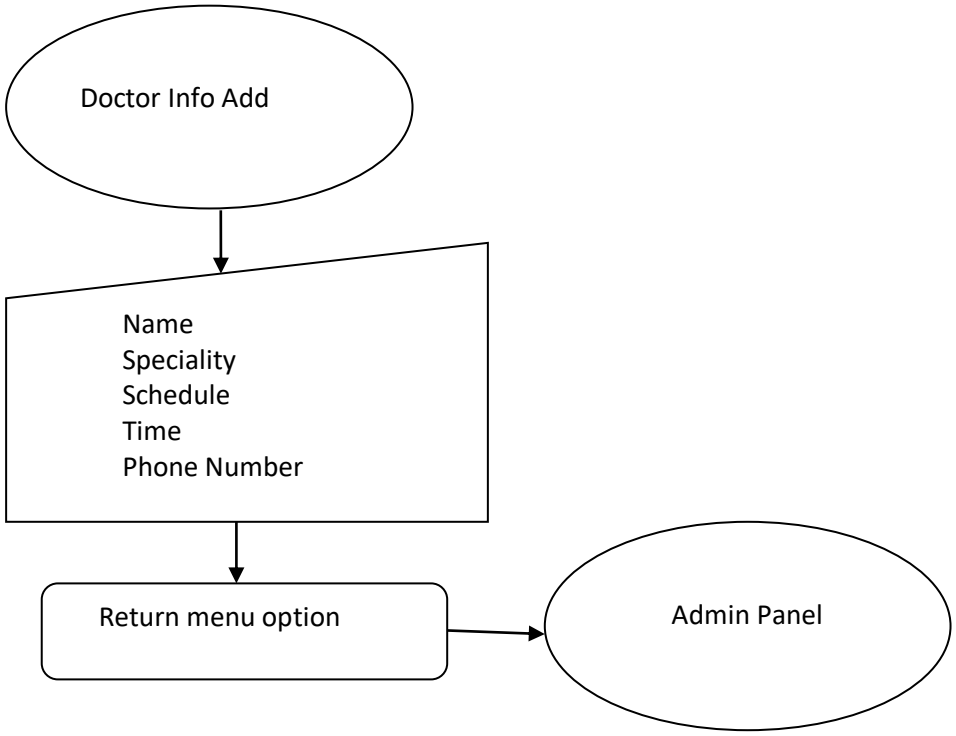


Figure – 5

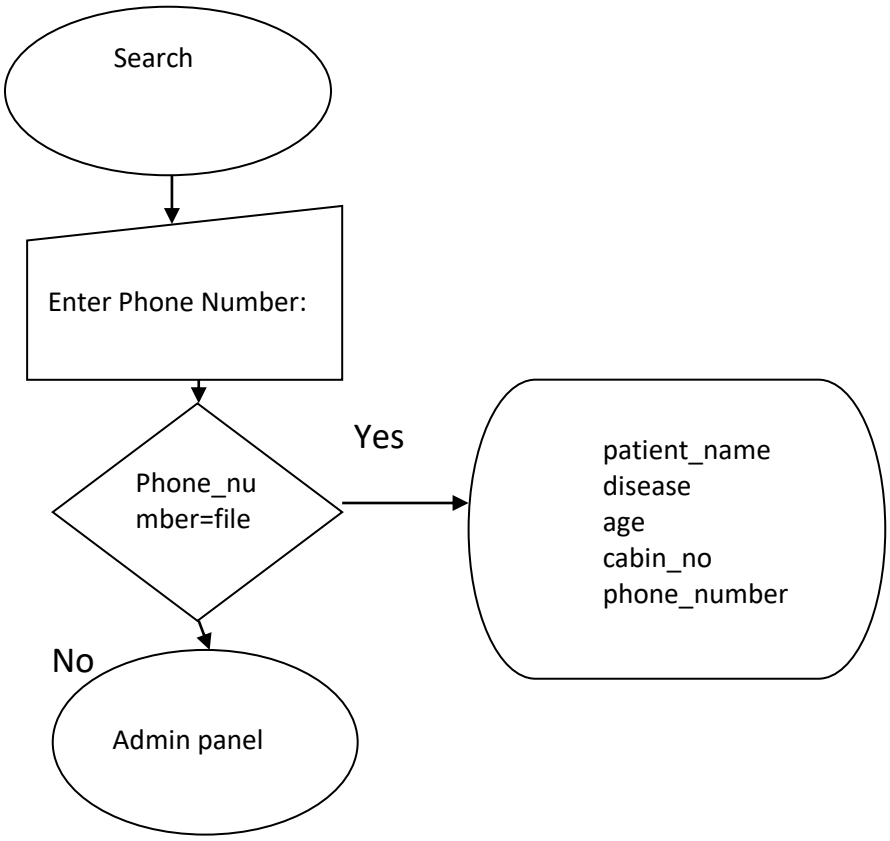


Figure – 6

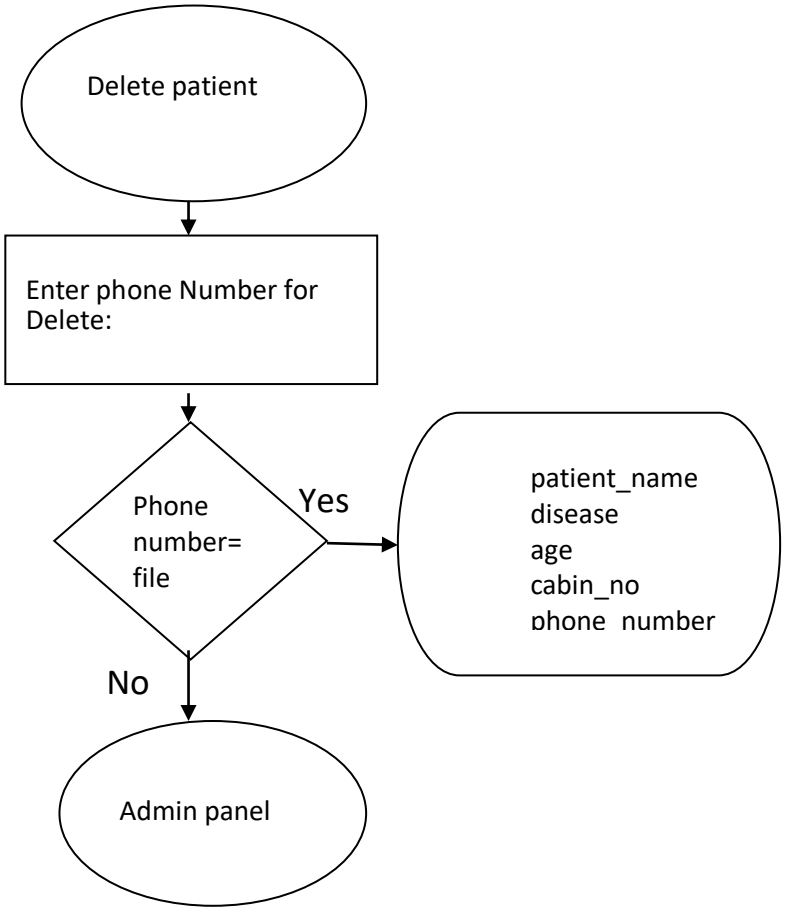


Figure – 7

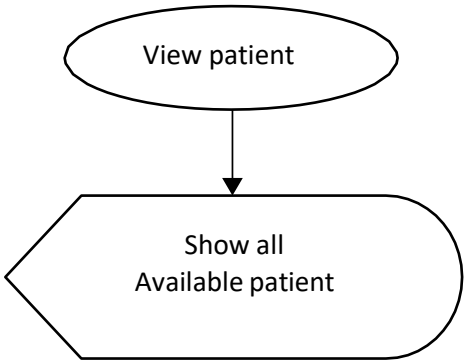
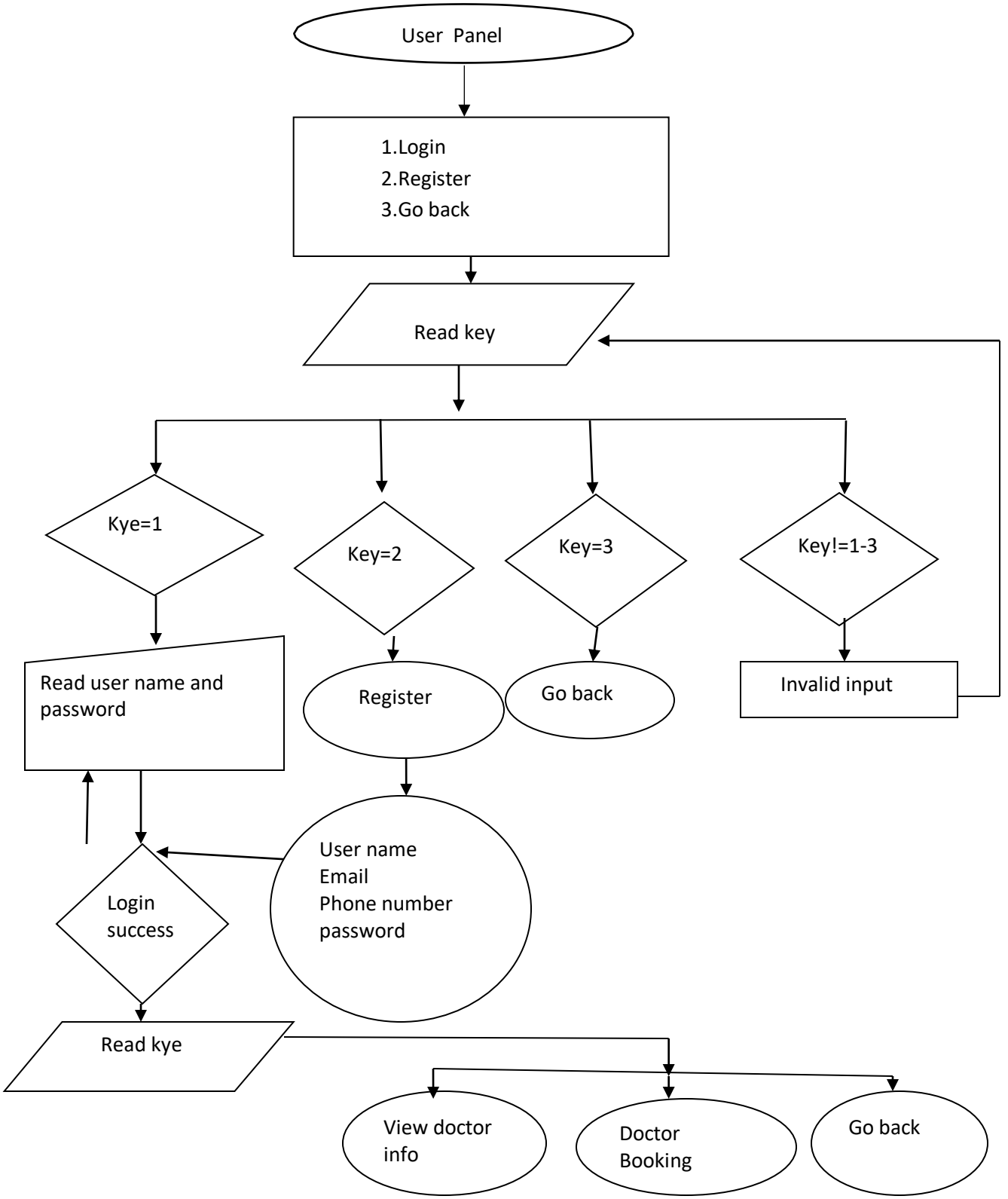


Figure – 8

Figure – 9


User Panel
1.Login
2.Register
3.Go back
Read key
Kye=1
Key=2
Key=3
Key!=1-3
Read user name and password
Register
Go back
Invalid input
User name
Email
Phone number
password
Login success
Read kye
View doctor info
Doctor Booking
Go back

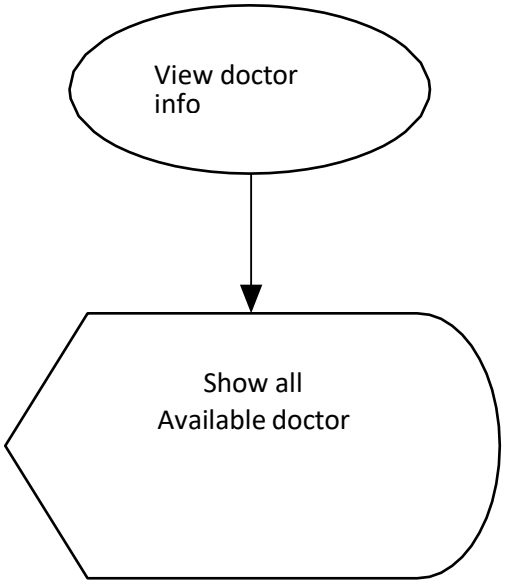


Figure –10

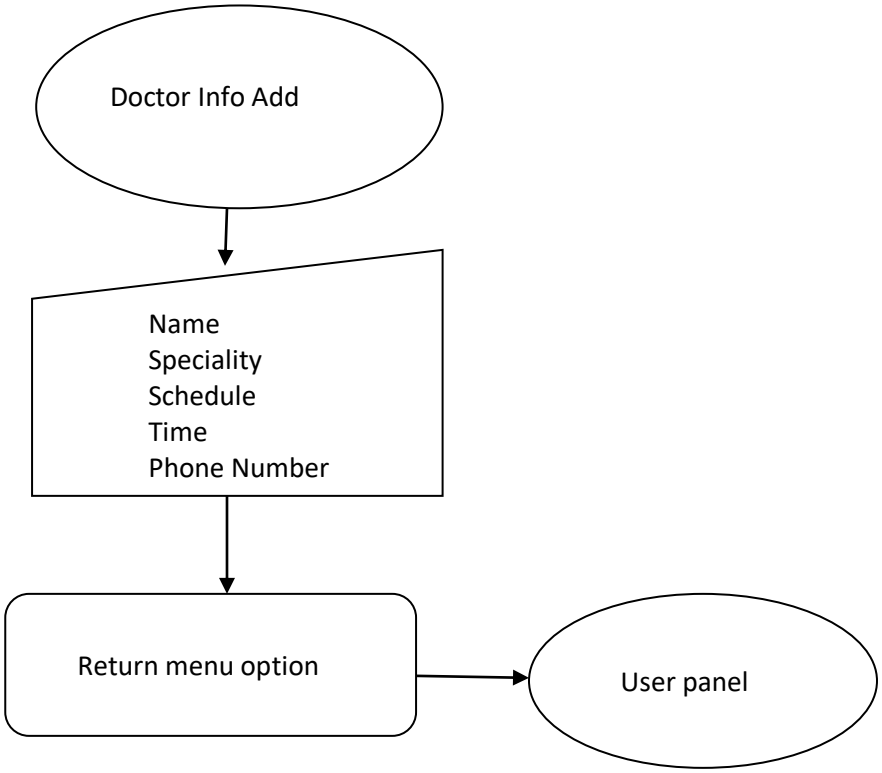


Figure –11

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Chapter - 4

Code Analysis

Project Name: Hospital Management System

Members:

1. **Fariya Ahmed**
2. **Md.Nabil Rahman**
3. **Shanto Sikder**
4. **Mosharof Parves**
5. **Md. Amzad Hosen**

```
#include<iostream>
#include <string>
#include <conio.h>
#include<bits/stdc++.h>
#include<istream>
#include<fstream>
#include<stdlib.h>
#define ROWV 4
#define MAX_LIMIT 100
#define COLMNV 10
using namespace std;

void admin();
void user();
```

```
void admin_login();
void user_login();
void registration(string text, string fileName, void (*login)());
void admin_panel(string username);
void user_panel(string username);
void PatientInformationAdd();
void PatientInformationView();
void DoctorInformationAdd();
void DoctorInformationView();
void DoctorBooking();
void ViewDoctorBookingInformation();
void DeletePatientInformation();
void SearchPatientInformation();


string header = "\t**********************************************************";

int main() {
   int choice;
   system("cls");

cout<<"\t\t\t**********************************************************************
***\n";
   cout<<"\t\t\t*                                                    *\n";
   cout<<"\t\t\t*          Welcome To Hospital Management System             *\n";
   cout<<"\t\t\t*                                                    *\n";

cout<<"\t\t\t**********************************************************************
***\n";
   cout<<"\n\t\t\t==>  Dashboard  <== \n\n";
   for(int i=0; i<=119; i++) cout<<"-";
   cout<<"\n\n\t\t\t1. Admin \n";
   cout<<"\t\t\t2. User\n";
   cout<<"\t\t\t3. Choose an option to continue: ";
   cin>>choice;

   switch (choice) {
      case 1:
         admin();
         break;
      case 2:
```

```
            user();
            break;
        default:
            cout<<"Invalid choice";
            main();
    }

    return 0;
}

void admin() {
    int choice;
    system("cls");
    cout<<"**********************************Admin
Panel**********************************\n";
    cout<<"\nOptions \n\n";
    for(int i=0; i<=80; i++) cout<<"-";
    cout<<"\n\n\t\t\t1. Login \n";
    cout<<"\t\t\t2. Register \n";
    cout<<"\t\t\t3. Go back \n";
    cout<<"\t\t\t4. Choose an option to continue: ";
    cin>>choice;

    switch (choice) {
        case 1:
            admin_login();
            break;
        case 2:
            registration("Admin", "admin.txt", admin_login);
            break;
        case 3:
            main();
            break;
        default:
            cout<<"Invalid choice";
            admin();
    }
}

void user() {
    int choice;
```

```
   system("cls");
   cout<<"**********************************User
Panel**********************************\n";
   cout<<"\nOptions \n\n";
   for(int i=0; i<=80; i++) cout<<"-";
   cout<<"\n\n\t\t\t1. Login \n";
   cout<<"\t\t\t2. Register \n";
   cout<<"\t\t\t3. Go back \n";
   cout<<"\t\t\t4. Choose an option to continue: ";
   cin>>choice;

   switch (choice) {
      case 1:
         user_login();
         break;
      case 2:
         registration("User", "users.txt", user_login);
         break;
      case 3:
         main();
         break;
      default:
         cout<<"Invalid choice";
         user();
   }
}

void admin_login() {
   string username, password, uname, pass;
   int is_exists=0,ch ;
   system("cls");
   cout<<"**********************Admin login************************\n\n";
   cout<<"Enter username: ";
   cin>>username;
   cout<<"Enter password: ";
   ch=getch();
   while (ch !=13 )

         {
      if(ch!=8 && ch!=46)
      {
```

```
        password.push_back(ch);
 cout << "*";


      }

        ch =getch();


        }
        cout<<endl;
  //cin>>password;

   ifstream input("admin.txt");

   while (input>>uname>>pass)
      {
        if(uname == username && pass == password)
        {
           is_exists = 1;
        }
      }
   input.close();

   if (is_exists)
      {
        admin_panel(username);
      }
   else
   {
      cout<<"Invalid Login. Try again !\n";
      cout<<"Press enter to continue\n";
      cin.get();
      cin.get();
      admin_login();
   }
}

void user_login() {
   string username, password, uname, pass;
   int is_exists=0, ch;
```

```
  system("cls");
  cout<<"**********User login**********\n\n";
  cout<<"Enter username: ";
  cin>>username;
  cout<<"Enter password: ";
  ch=getch();
  while (ch !=13 )

        {
     if(ch!=8 && ch!=46)
     {
        password.push_back(ch);
cout << '*';


     }

        ch =getch();


        }
        cout<<endl;
  // cin>>password;


  ifstream input("users.txt");

  while (input>>uname>>pass) {
     if(uname == username && pass == password) {
        is_exists = 1;
     }
  }
  input.close();

  if (is_exists)
     {
        user_panel(username);
     }
  else
     {
     cout<<"Invalid credentials. Try again !\n";
```

```
        cout<<"Press enter to continue\n";
        cin.get();
        cin.get();
        user_login();
        }
}

void registration(string text, string fileName, void (*login)()) {
    string username, password, email , phone_number;
    system("cls");
    cout<<"**********************************"<< text << " " <<
"Panel**********************************\n";
    cout<<"\nChoose a username and password \n\n";
    for(int i=0; i<=119; i++) cout<<"-";
    cout<<"\n\n\t\t\tEnter username: ";
    cin>>username;
    cout << "\t\t\tEnter Email: ";
    cin >> email;
    cout << "\t\t\tEnter Phone Number: ";
    cin >> phone_number;
    cout<<"\t\t\tEnter password: ";
    cin>>password;

    ofstream reg(fileName, ios::app);
    reg << username << " " << password << " " << email << endl;
    reg.close();
    system("cls");
    cout<<"**********************************"<< text << " " <<
"Panel**********************************\n";
    cout<<"\nRegistration Successfull\n";
    cout<<"Press enter to login";
    cin.get();
    cin.get();
    (*login)();
}

void admin_panel(string username) {
    int choice;
    system("cls");
    cout<<"**********************Admin panel************************\n\n";
    cout << "Welcome to the admin portal " << username << ".\n";
```

```
    cout << "Options-> \n";
    cout <<"\t1. Add Patient Information \n";
    cout <<"\t2. View Patient Information \n";
    cout <<"\t3. Add Doctor Information \n";
    cout <<"\t4. Search Patient Information \n";
    cout <<"\t5. Delete Patient Information \n";
    cout <<"\t6. View Doctor Booking Information \n";
    cout <<"\t7. Go back \n";
    cout <<"\t8. Choose an option to continue: ";
    cin>>choice;

    switch (choice) {
    case 1:
        PatientInformationAdd();
        break;
    case 2:
        PatientInformationView();
        break;
    case 3:
        DoctorInformationAdd();
        break;
    case 4:
        SearchPatientInformation();
        break;
    case 5:
        DeletePatientInformation();
        break;
    case 6:
        ViewDoctorBookingInformation();
        break;
    case 7:
        main();
        break;
    default:
        cout<<"Invalid choice";
        admin_panel(username);
    }
}

void admin_panel2() {
    int choice;
```

```
    system("cls");
    ------------------------------------------------------------------------
    cout << "Options-> \n";
    cout <<"\t1. Add Patient Information \n";
    cout <<"\t2. View Patient Information \n";
    cout <<"\t3. Add Doctor Information \n";
    cout <<"\t4. Search Patient Information \n";
    cout <<"\t5. Delete Patient Information \n";
    cout <<"\t6. View Doctor Booking Information \n";
    cout <<"\t7. Go back \n";
    cout <<"\t8. Choose an option to continue: ";
    cin>>choice;

    switch (choice) {
    case 1:
        PatientInformationAdd();
        break;
    case 2:
        PatientInformationView();
        break;
    case 3:
        DoctorInformationAdd();
        break;
    case 4:
        SearchPatientInformation();
        break;
    case 5:
        DeletePatientInformation();
        break;
    case 6:
        ViewDoctorBookingInformation();
        break;
    case 7:
        main();
        break;
    default:
        cout<<"Invalid choice";
        admin_panel2();
    }
}
void user_panel2() {
```

```
    int choice;
    system("cls");

    cout << "Options-> \n";
    cout<<"\t1. View Doctor Information \n";
    cout<<"\t2. Booking \n";
    cout<<"\t3. Go back \n";
    cout<<"\t9. Choose an option to continue: ";
    cin>>choice;

    switch (choice) {
    case 1:
        DoctorInformationView();
       break;
    case 2:
        DoctorBooking();
       break;
    case 3:
       main();
       break;
    default:
       cout<<"Invalid choice";
       user_panel2();
    }
}
void user_panel(string username) {
    int choice;
    system("cls");
    cout<<"**********User panel**********\n\n";
    cout << "Welcome to the user " << username << ".\n";
    cout << "Options-> \n";
    cout<<"\t1. View Doctor Information \n";
    cout<<"\t2. Booking \n";
    cout<<"\t3. Go back \n";
    cout<<"\t9. Choose an option to continue: ";
    cin>>choice;

    switch (choice) {
    case 1:
        DoctorInformationView();
       break;
```

```
    case 2:
        DoctorBooking();
        break;
    case 3:
        main();
        break;

    default:
        cout<<"Invalid choice";
        user_panel(username);
    }
}




void PatientInformationAdd()
{
    ofstream patientFile("patient.txt", ios::app);
    string patient_name, disease, age, cabin_no, phone_number;
    cout << header << endl;
    cout<<"\t*       Patient Information Add              *\n";
    cout << header << endl;
    cout << "  " << endl;
    cout << "Enter Patient's Name = " ;
    cin >> patient_name;
    cout << "Enter disease = ";
    cin >> disease;
    cout << "Enter the age =  ";
    cin >> age;
    cout << "Enter cabin no =  ";
    cin >> cabin_no;
    cout << "Enter phone number = ";
    cin >> phone_number;
    patientFile << patient_name << " " << disease << " " << age << " " << cabin_no << " " <<
phone_number << "\n";

    patientFile.close();

    cout << header << endl;
    cout << "Patient's Information  Data Saved Successfully !!" << endl
```

```
        << patient_name << endl;
    cout << header << endl;
    char flag='n';
    cout<<"YOU CAN RETURN MENU OPTION .? Y/N.! :";
    cin>>flag;
    if(flag=='Y' || flag=='y')
    {
       admin_panel2();
    }
}



void PatientInformationView()
{
    ifstream patientFile("patient.txt");
    char ch;
    string patient_name, disease, age, cabin_no, phone_number;
    if (!patientFile)
    {
       cout << "Data File Not Found !" << endl;
       exit(1);
    }
    cout  << endl << endl;

cout<<"\t\t\t*****************************************************************
***\n";
    cout<<"\t\t\t*          Patient Information View                    *\n";

cout<<"\t\t\t*****************************************************************
***\n";

    cout << "\t-------------------------------------------------------------------------------------" <<
endl;
    cout << "\tName " << " \t| Disease " << " \t| Age " << " \t| Cabin no " << " \t| Phone
Number no " << endl;
    cout << "\t-------------------------------------------------------------------------------------" <<
endl;

    while (patientFile >> patient_name >> disease >> age >> cabin_no >> phone_number)
    {
```

```
      //if (patientFile >> patient_name >> disease >> age >> cabin_no >> phone_number)
      {
         cout << "\t" << patient_name << " \t| " << disease << " \t| " << age
             << "  \t| " << cabin_no << "  \t\t| " << phone_number << endl;
      }
   }
   patientFile.close();
   cout << "\t-------------------------------------------------------------------------------------------------" <<
endl;
   char flag='n';
   cout<<"YOU CAN RETURN MENU OPTION .? Y/N.! :";
   cin>>flag;
   if(flag=='Y' || flag=='y')
   {
      admin_panel2();
   }

}


void DoctorInformationAdd()
{
   ofstream DoctortFile("Doctor.txt", ios::app);
   string Doctor_name, Speciality, Schedule, Time, phone_number;
   cout << header << endl;
   cout<<"\t*       Doctor Information Add              *\n";
   cout << header << endl;
   cout << "  " << endl;
   cout << "Enter Doctor's Name = " ;
   cin >> Doctor_name;
   cout << "Enter Speciality = ";
   cin >> Speciality;
   cout << "Enter Schedule =  ";
   cin >> Schedule;
   cout << "Enter Time =  ";
   cin >> Time;
   cout << "Enter phone number = ";
   cin >> phone_number;
   DoctortFile << Doctor_name << " " << Speciality << " " << Schedule << " "  << Time << " "  <<
phone_number << "\n";
```

```
  DoctortFile.close();
   cout << header << endl;
   cout << "Doctort's Information  Data Saved Successfully !!" << endl
       << Doctor_name << endl;
   cout << header << endl;
   char flag='n';
   cout<<"YOU CAN RETURN MENU OPTION .? Y/N.! :";
   cin>>flag;
   if(flag=='Y' || flag=='y')
   {
       admin_panel2();
   }
}



void DoctorInformationView()
{
    ifstream DoctorFile("Doctor.txt");
   char ch;
   string Doctor_name, Speciality, Schedule, Time, phone_number;
   if (!DoctorFile)
   {
      cout << "Data File Not Found !" << endl;
      exit(1);
   }
   cout  << endl << endl;

cout<<"\t\t\t*************************************************************
***\n";
   cout<<"\t\t\t*          Doctor Information View                    *\n";

cout<<"\t\t\t*************************************************************
***\n";

   cout << "\t-------------------------------------------------------------------------------------" <<
endl;
   cout << "\tName " <<  " \t\t| Speciality " << " \t| Schedule" << " \t| Time" << " \t| Phone
Number no " << endl;
   cout << "\t-------------------------------------------------------------------------------------" <<
```

```
endl;
        - - -
```

```
   cin >> Time;
   DoctorBookingFile << Doctor_name << " " << Speciality << " " << Schedule << " " << Time
<<  "\n";

  DoctorBookingFile.close();

   cout << header << endl;
   cout << " Doctor Booking Information  Data Saved Successfully !!" << endl
       << Doctor_name << endl;
   cout << header << endl;
    char flag='n';
   cout<<"YOU CAN RETURN MENU OPTION .? Y/N.! :";
   cin>>flag;
   if(flag=='Y' || flag=='y')
   {
   user_panel2();
   }

}



void ViewDoctorBookingInformation()
{
    ifstream DoctorBookinginfoFile("DoctorBookinginfo.txt");
   char ch;
   string Doctor_name, Speciality, Schedule, Time;
   if (!DoctorBookinginfoFile)
   {
   cout << "Data File Not Found !" << endl;
     exit(1);
   }

   cout  << endl << endl;

cout<<"\t\t\t*****************************************************************
***\n";
   cout<<"\t\t\t*          Doctor Booking Information View                    *\n";

cout<<"\t\t\t*****************************************************************
***\n";
```

```
   cout << "\t-------------------------------------------------------------------------------------------" <<
endl;
   cout << "\tName " <<  " \t\t| Speciality " << " \t| Schedule" << " \t| Time"  << endl;
   cout << "\t-------------------------------------------------------------------------------------------" <<
endl;

   while (DoctorBookinginfoFile >> Doctor_name >> Speciality >> Schedule >> Time)
   {
      //if (DoctorBookingFile >> Doctor_name >> Speciality >> Schedule >> Time )
      {
         cout << "\t" << Doctor_name << " \t| " << Speciality << " \t| " << Schedule
             << "  \t| " << Time << endl;
      }
   }

   DoctorBookinginfoFile.close();
   cout << "\t-------------------------------------------------------------------------------------------" <<
endl;
   char flag='n';
   cout<<"YOU CAN RETURN MENU OPTION .? Y/N.! :";
   cin>>flag;
   if(flag=='Y' || flag=='y')
   {
      admin_panel2();
   }

}

void SearchPatientInformation()
{
  string patient_name, disease, age, cabin_no, phone_number;
   int is_exists=0, ch;
   string pname,pnum;
   system("cls");
   cout<<"**********Search Patient
Information**********\n\n";
   cout<<"Enter phone_number: ";
   cin>>pnum;
```

```
   ifstream patientFile("patient.txt");
while (patientFile >> patient_name >> disease >> age >> cabin_no >> phone_number)
   {

      if( pnum == phone_number) {
          cout << "\t" << patient_name << " \t| " << disease << " \t| " << age
             << "  \t| " << cabin_no << "  \t\t| " << phone_number << endl;
             is_exists=1;
             break;
      }
   }
   patientFile.close();

   if (!is_exists)
      {

      cout<<"patient not found. Try again !\n";

      }
       char flag='n';
   cout<<"YOU CAN RETURN MENU OPTION .? Y/N.! :";
   cin>>flag;
   if(flag=='Y' || flag=='y')
   {
       admin_panel2();
   }

}


void DeletePatientInformation()

{
  string patient_name, disease, age, cabin_no, phone_number;
   int is_exists=0, ch;
   int k=0;
   string find;
   string line;
   string pname,pnum;
   system("cls");
   cout<<"**********************Delete Patient
```

```
Information**************************\n\n";
   cout<<"Enter phone_number: ";
   cin>>pnum;
ofstream myfile;
   myfile.open("patient.txt");

   ifstream patientFile("patient.txt");

   while (patientFile >> patient_name >> disease >> age >> cabin_no >> phone_number)
{



      if(pnum==phone_number)
       {

           cout<<"patient u want to Delete "<<endl;
   cin>>find;

   ifstream myfile2; //for reading records
  myfile2.open("patient.txt");

   ofstream temp;
   temp.open("temp.txt");
   while (getline(myfile2, line))
   {
     if (line != find)
       temp << line << endl;
   }
   myfile2.close();
   temp.close();
   rename("temp.txt", "patient.txt");
    remove("patient.txt");

   //Now add new Record to file
   cout<<"enter patient_name "<<endl;
   cin>>patient_name;

   cout<<"enter disease Name"<<endl;
   cin>>disease;

   cout<<"enter age "<<endl;
```

```
   cin>>age;
   cout<<"enter cabin_no "<<endl;
   cin>>cabin_no;

   cout<<"enter phone_number "<<endl;
   cin>>phone_number;


   ofstream myfile;
   myfile.open("patient.txt", ios::app | ios::out);
   myfile<<patient_name<<endl;
   myfile<<disease<<endl;
   myfile<<age<<endl;
   myfile<<cabin_no<<endl;
   myfile<<phone_number<<endl<<endl<<endl;

      }
      else{
         patientFile.close();
      }
   }
   char flag='n';
   cout<<"**********Patient Information
Delete!**********\n\n";
   cout<<"YOU CAN RETURN MENU OPTION .? Y/N.! :";
   cin>>flag;
   if(flag=='Y' || flag=='y')
   {
      admin_panel2();
   }
}
```

Chapter - 6

Conclusion and Future Work

In this software project we got to learn many things like how to handle a project efficient in a way, how to handle file properly, how to build an entire project form the scratch and the interconnection between several parts of a project. We were not able use some interesting features due to some restrictions and lack of knowledge. We are hoping that in the stable release we will be able to add some features like –

1. Stunning Graphical User Interface (GUI)
2. And many more interesting features.