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A Data Structure Mini Project Report on

HOSPITAL MANAGEMENT SYSTEM

Submitted in partial fulfillment of the requirements as a part of the Data structureLab for the III Semester of degree of Bachelor of Engineering in Information Science and Engineering of Visvesvaraya Technological University, Belagavi

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HOSPITAL MANAGEMENT SYSTEM

ABSTRACT

Our project Hospital Management System includes registration of patients, storing their details into the system, and also display all the appointments. The purpose of this study is to develop a computerized hospital management system that will upgrade the quality of information management and efficiency of the hospital employees using this study. It is accessible either by an administrator or receptionist. The data are well protected for personal use and makes the data processing really fast.

CHAPTER 1: INTRODUCTION

Hospitals are the essential part of our lives, providing best medical facilities to people suffering from various ailments, which may be due to change in climatic conditions, increased work-load, emotional trauma stress etc. It is necessary for the hospitals to keep track of its day-to-day activities and record of its patients, doctors, nurses, ward boys and other staff personals that keep the hospital running successfully. The main aim of our project is to provide a paperless hospital up to 90%. The system also provides excellent security of data at every level of user-system interaction and also provides robust & reliable storage and backup facilities.

CHAPTER 2: OBJECTIVE OF THE PROJECT

The project is aimed to develop to maintain a day-to-day state of admission / discharge of patients, list of doctors, reports generation etc. It is designed to achieve the following objectives.

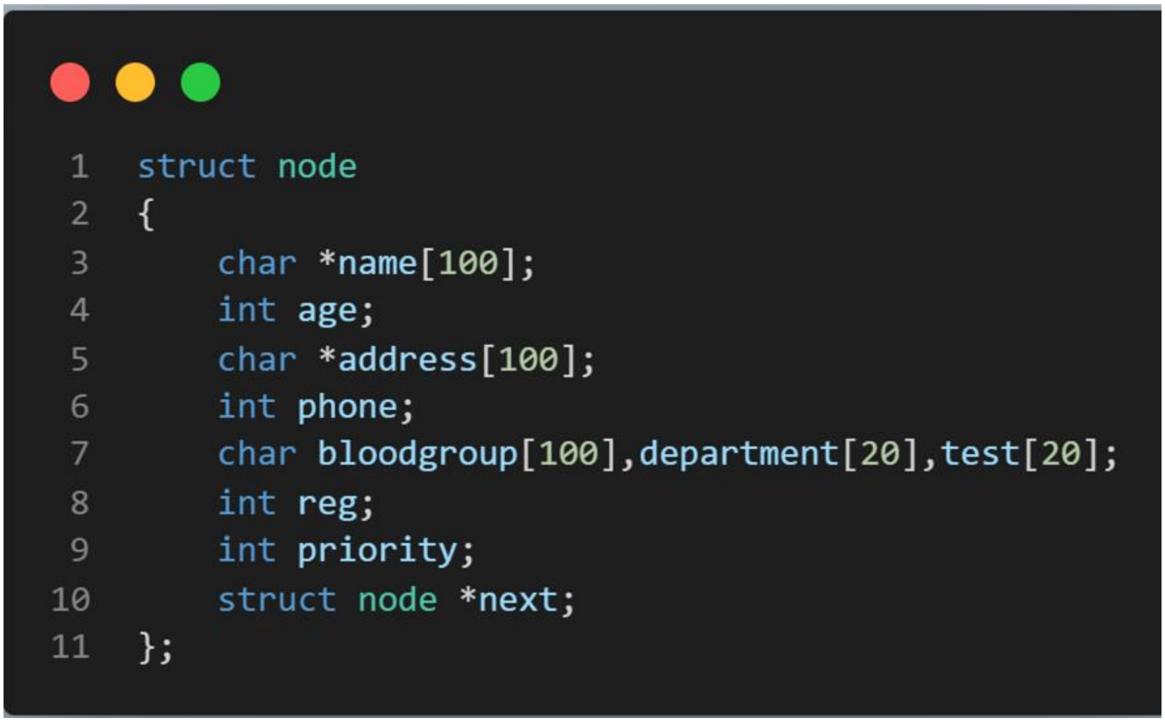
- ✓ To computerize all details regarding patient details & hospital details.
- ✓ Scheduling the appointment of patient with doctors to make it convenient for both.
- ✓ Scheduling the services of specialized doctors and emergency properly so that facilities provided by hospital are fully utilized in effective and efficient manner.
- ✓ It should be able to handle all the test reports of patients conducted in the pathology lab of the hospital.

Contd.

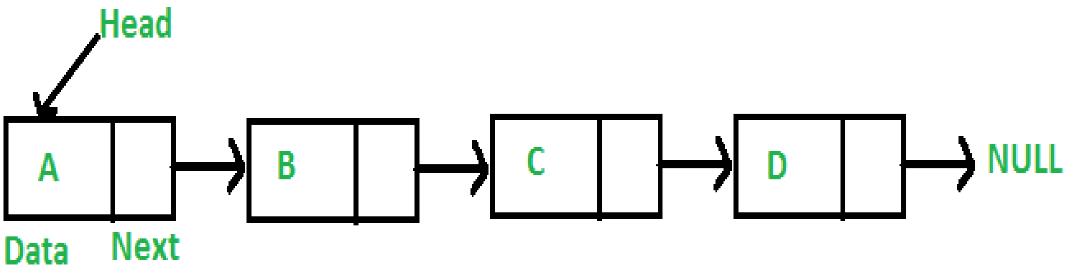
- ✓ The information of the patients should be kept up to date and their record should be kept in the system for historical purposes.

CHAPTER 3: DATA STRUCTURE

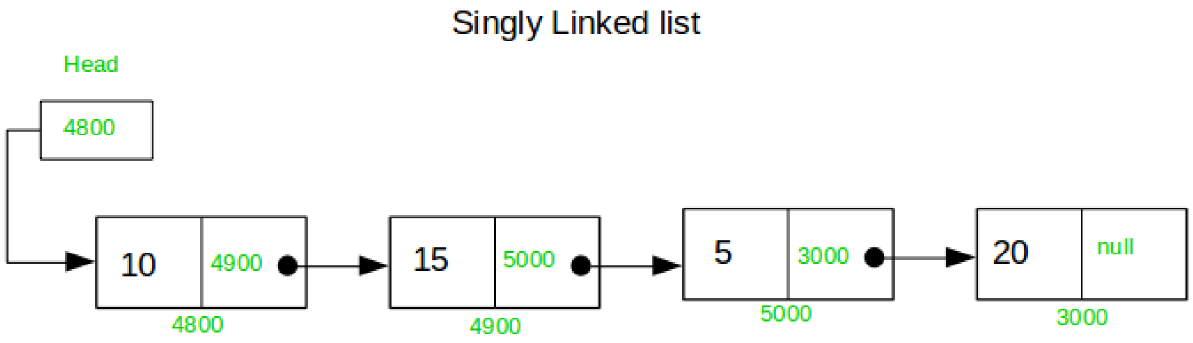
- ❖ The data structure used in our Hospital Management system project is "**SINGLY LINKED LIST**".



```
struct node
{
      char *name[100];
      int age;
      char *address[100];
      int phone;
      char bloodgroup[100],department[20],test[20];
      int reg;
      int priority;
      struct node *next;
};
```



Example:



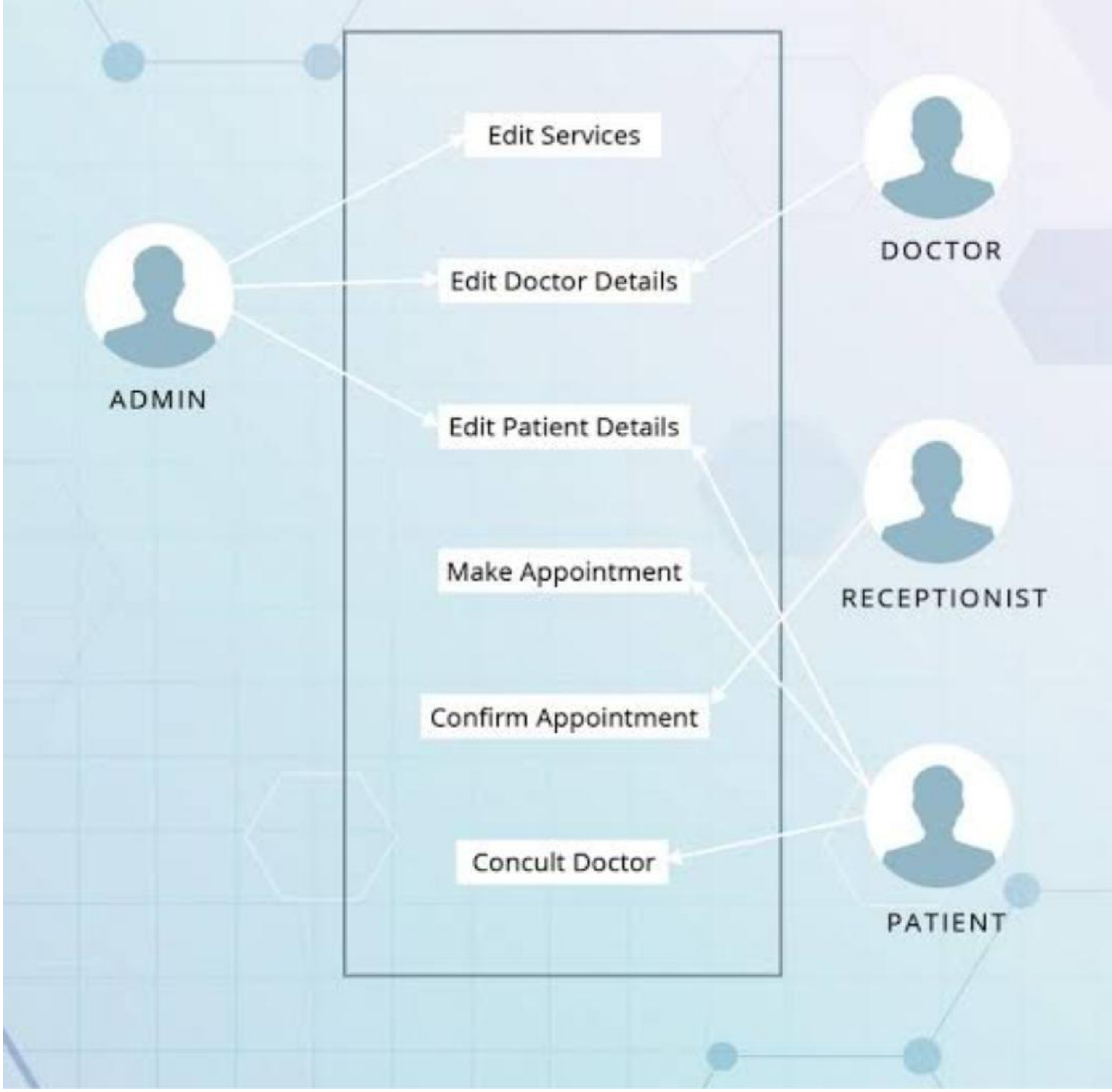
CHAPTER 4: SYSTEM REQUIREMENTS

❖ **Operating System**
Windows, Mac OS, Linux

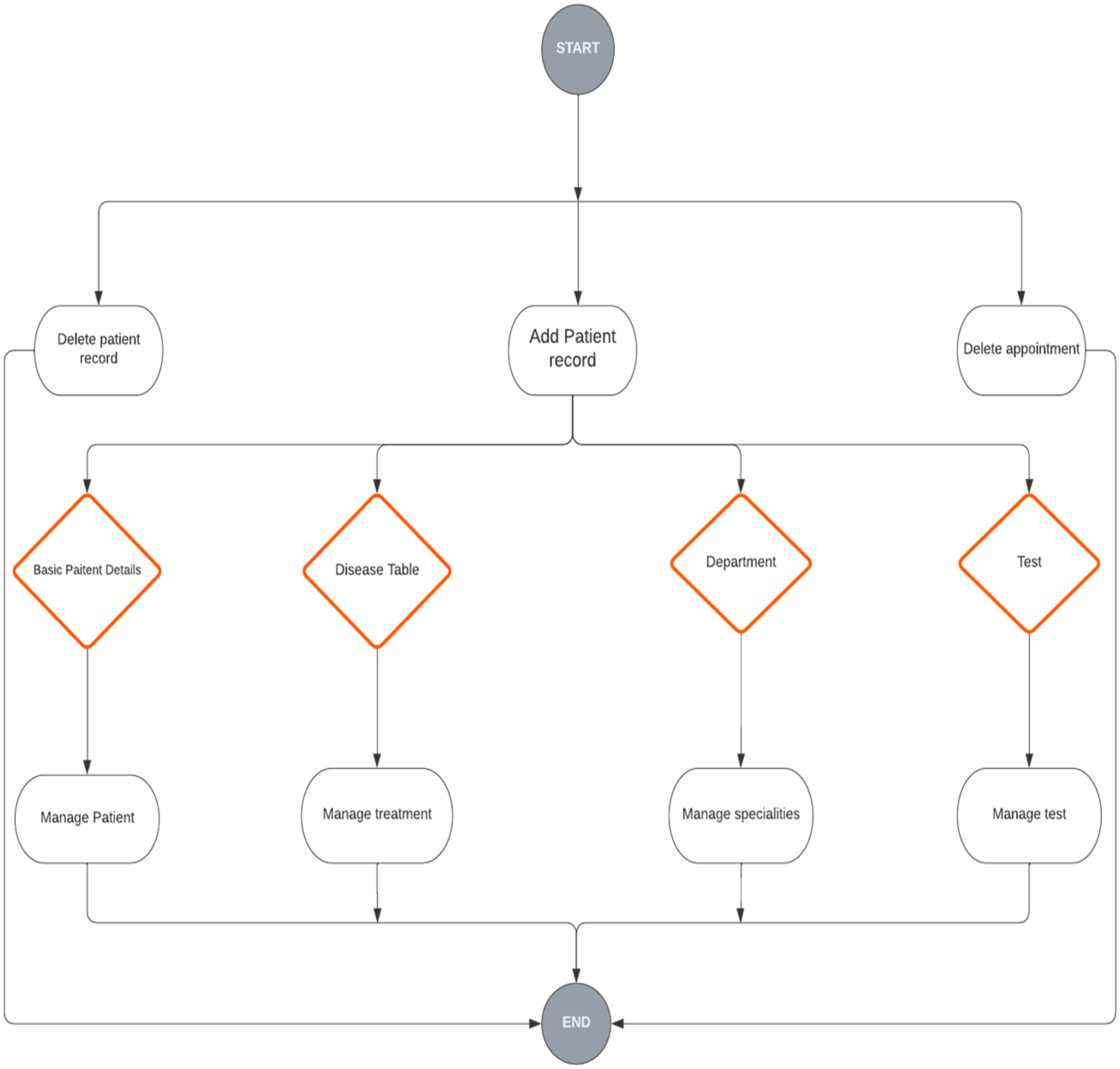
❖ **IDE**
Visual studio code
Atom
Sublime Text editor

❖ **Compiler**
gcc / minGW or any other C compiler

CHAPTER 5: PROJECT ARCHITECTURE



CHAPTER 6: FLOWCHART



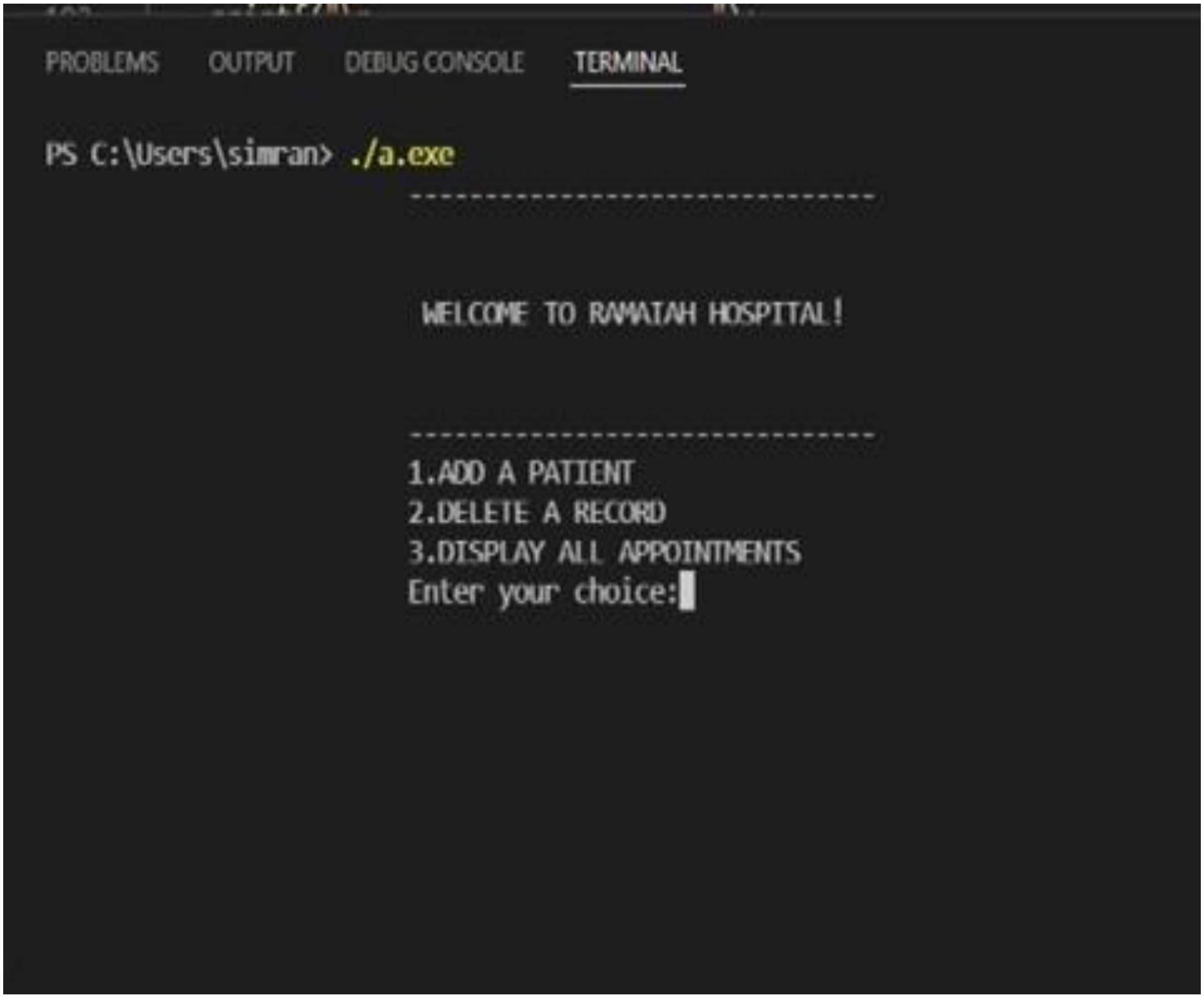
CHAPTER 7: SOURCE CODE IN C

```
#include<stdio.h>
#include<malloc.h>
#include<conio.h>

struct node
{
   char *name[100];
   int age;
   char *address[100];
   int phone;
   char bloodgroup[100],department[20],test[20];
   int reg;
   int priority;
   struct node *next;
};
struct node *start= NULL;
struct node *insert(struct node *);
struct node *delete(struct node *);
int main()
{

   int option;
   do{
       printf("\t\t\t--------------------------------\n");
      printf("\t\t\t\t\t\t\t\t\t\t\t\n");
      printf("\t\t\t\t\t\t\t\t\t\t\n");
      printf("\t\t\t WELCOME TO RAMAIAH HOSPITAL!\n");
      printf("\t\t\t\t\t\t\t\t\t\t\n");
      printf("\t\t\t\t\t\t\t\t\t\t\n");
      printf("\t\t\t--------------------------------\n");
      printf("\t\t\t1.ADD A PATIENT\n");
      printf("\t\t\t2.DELETE A RECORD\n");
      printf("\t\t\t3.DISPLAY ALL APPOINTMENTS\n");
      printf("\t\t\tEnter your choice:");
      scanf("%d",&option);
   switch(option)
   {
   case 1:
      start= insert(start);
      getchar();
      system("cls");
      break;
   case 2:
      start= delete(start);
      getchar();
      system("cls");
      break;
   case 3:
      display(start);
      getchar();
      system("cls");
      break;
   case 4:
      exit(0);
      break;
   }
}while(option!=4);
}
struct node *insert(struct node *start)
{
   struct node *ptr,*p;
   int pri;
   char* name[100];
   char* address[100];
   ptr=(struct node*)malloc(sizeof(struct node));
   printf("Enter patient Name:");
   scanf(" %s",ptr-> name);
   printf("Enter the patient's age:");
   scanf("%d",&(ptr->age)); // &(ptr->age)
   printf("Enter your home address:");
   scanf(" %s",ptr->address);
   printf("Enter your phone number:");
   scanf("%d",&(ptr->phone));
   printf("Enter the blood group of Patient:");
   scanf(" %s",ptr->bloodgroup);
   printf("Enter the reg no:");
   scanf("%d",&(ptr->reg));
   printf("Enter your disease Number:");
   table();
   scanf("%d",&pri);
   printf("Enter your specialist number:");
   displaydepartment();
   scanf("%d",&pri);
   printf("Enter your test number:");
   displaytest();
   scanf("%d",&pri);
   //ptr->name=name;


   if((start==NULL)||pri<start->priority)
   {
      ptr->next=start;
      start=ptr;
   }
   else
      {
          p=start;
          while(p->next!=NULL && p->next->priority <=pri)
              p=p->next;
          ptr->next=p->next;
          p->next=ptr;
      }
      return start;
};
struct node *delete(struct node *start)
{
   struct node *ptr;
   if(start==NULL)
   {
      printf("\n NO PATIENT RECORD TO DELETE");
      return;
   }
   else
   {
      ptr= start;
      printf("\n Deleted Record is : %d",ptr->reg);
      start=start->next;
      free(ptr);
   }
   return start;
};
void display(struct node *start)
{
   struct node *ptr;
   ptr=start;
   if(start==NULL)
      printf("\nTHERE IS NO PATIENT");
   else
   {
      printf("\nPriority wise appointments are:");
      while(ptr!=NULL)
      {
              printf("The name of patient is:%s\n",ptr->name);
              printf("The age of patient is:%d\n",ptr->age);
              printf("The address of patient is : %s\n",ptr->address);
              printf("Phone Number:%d\n",ptr->phone);
              printf("The blood group of patient is:%s\n",ptr->bloodgroup);
               printf("-------------------------------------------------------\n");
              ptr=ptr->next;
      }
   }
   getchar();
}
void table()
{
   printf("\t\tPlease Refer this Table for your disease!\n");
   printf("1.Heart attack\n");
   printf("2.Severe wound/Bleeding\n");
   printf("3.Cancer\n");
   printf("4.Chest pain\n");
   printf("5.Fracture\n");
   printf("6.Diabetes Checkup\n");
   printf("7.Infection\n");
   printf("8.Viral Fever\n");
   printf("9.Common Cold/Head ache\n");
}
void displaydepartment()
{
          printf("\n:Specialists:");
          printf("\n---------------");
          printf("\nRoom No.");

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

          printf("\n1.General Physician");
          printf("\n201,255");
          printf("\n2.E.N.T");
          printf("\n302");
          printf("\n3.Cardiologist");
   printf("\n509");
          printf("\n4.Dermatologist");
   printf("\n406");
   printf("\n5.Gastroenterologist");
          printf("\n308");
   printf("\n6.Pediatrician");
   printf("\n207");
   printf("\n7.EYE Specialist");
   printf("\n102");
   printf("\n8.Nephrologist");
          printf("\n109");
          printf("\n9.General Surgeon");
   printf("\n407,213");
          printf("\n10.Accupuncturist");
          printf("\n123\n");
```

```
}
void displaytest()
{
        printf("\n::ADDING SERVICES::");
        printf("\n----------------------------");
        printf("\n:PRICE LIST:");
        printf("\n---------------------");
        printf("\n1.X-Ray");
        printf("\nRs. 300.00");
        printf("\n2.Ultra-sound");
        printf("\nRs. 500.00");
   printf("\n3.C.T.Scan");
        printf("\nRs.1800.00");
        printf("\n4.TC,DC,HB");
        printf("\nRs.  90.00");
        printf("\n5.Urine R/E");
        printf("\nRs.  80.00");
        printf("\n6.Blood C/S");
        printf("\nRs. 250.00");
        printf("\n7.Biliribin D/T");
        printf("\nRs. 200.00");
        printf("\n8.Stool Test");
        printf("\nRs.  60.00");
        printf("\n9.Bed Charge");
        printf("\nRs. 150.00");
        printf("\n10.Sugar Test");
        printf("\nRs. 400.00\n");
}
```

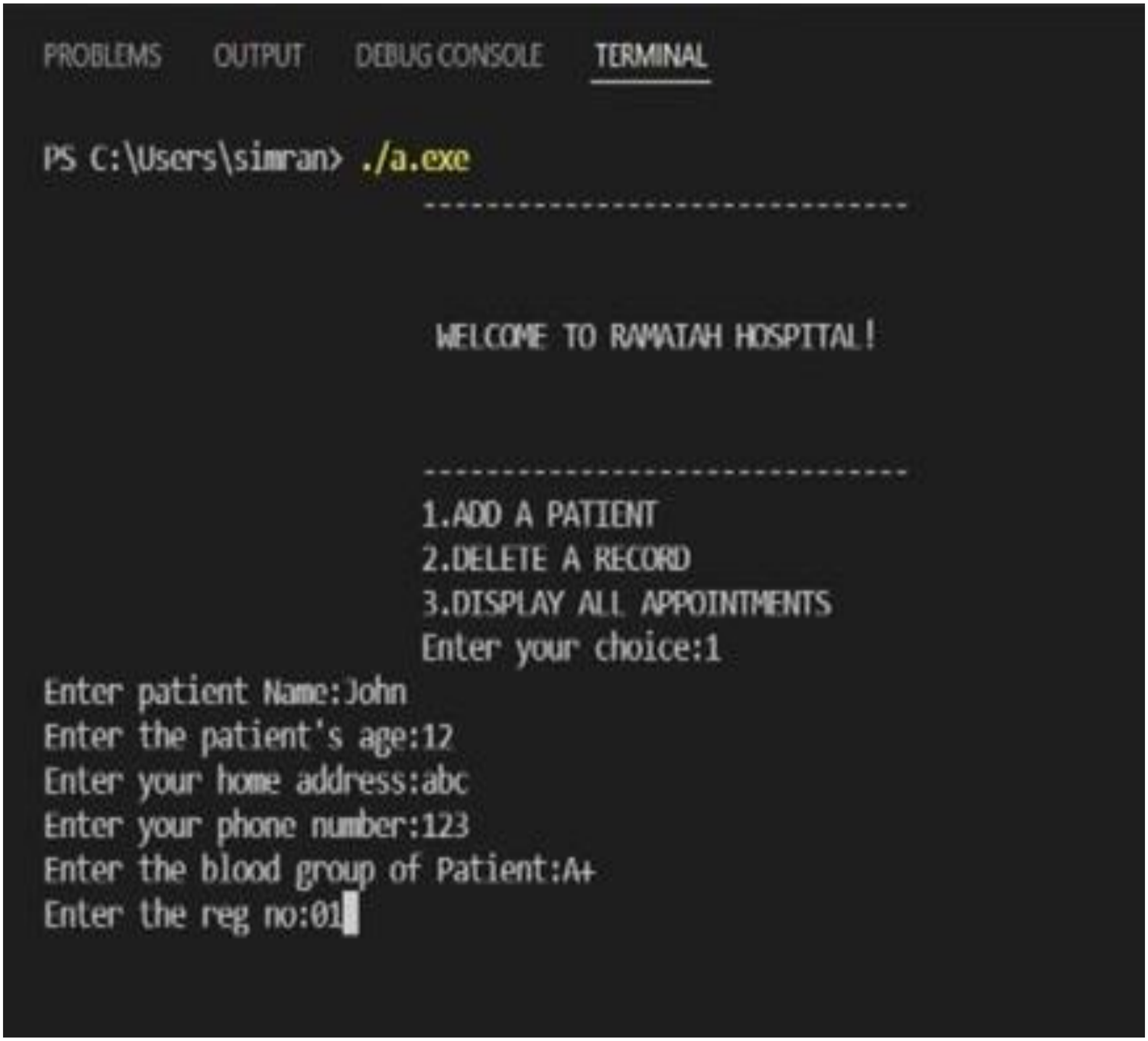
CHAPTER 8: VISUAL REPRESENTATION

OPTIONS:



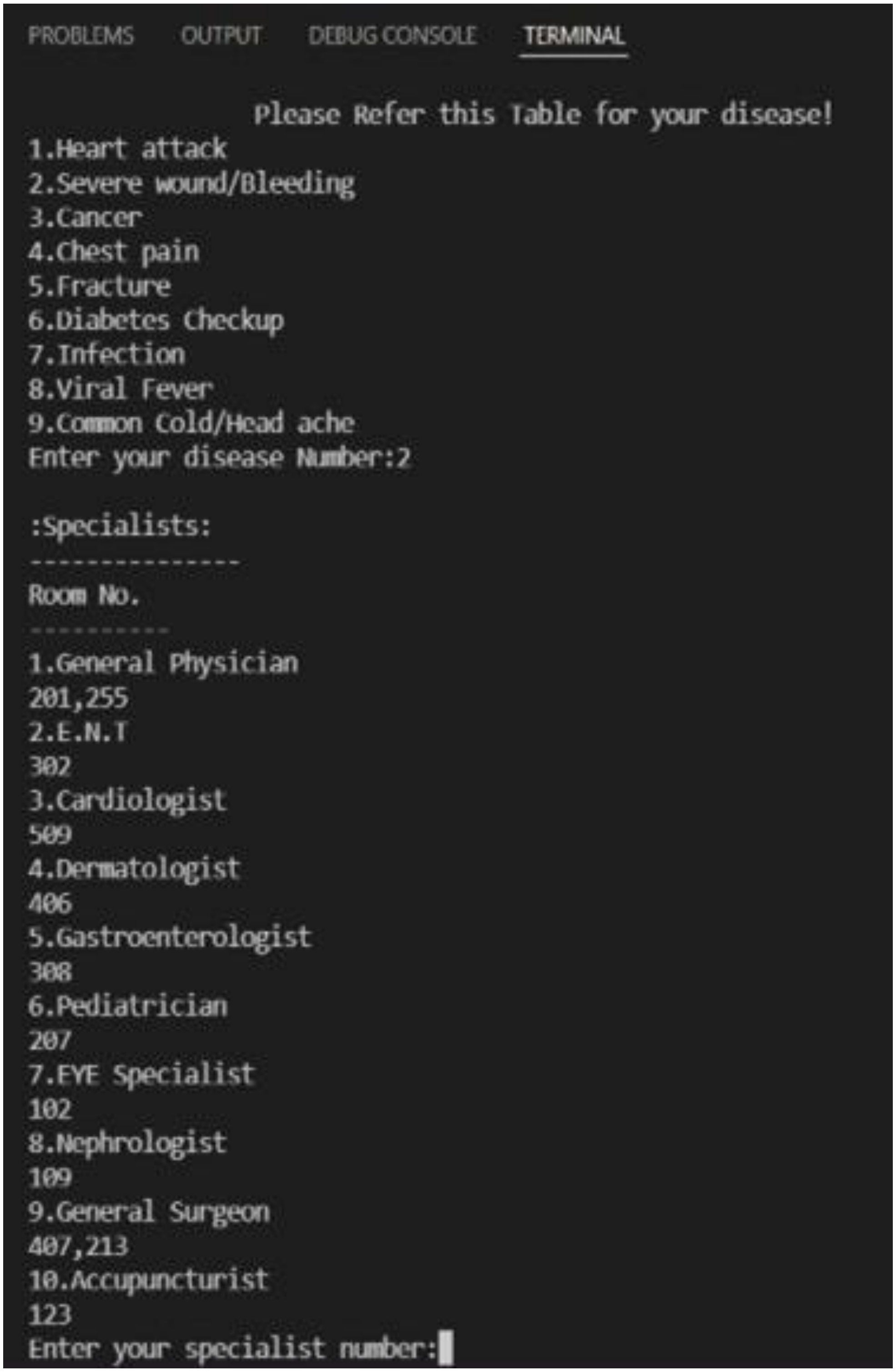
```
PS C:\Users\simran> ./a.exe
                                --------------------------------


                                 WELCOME TO RAMAIAH HOSPITAL!


                                --------------------------------
                                1.ADD A PATIENT
                                2.DELETE A RECORD
                                3.DISPLAY ALL APPOINTMENTS
                                Enter your choice:
```

ADD DETAILS:



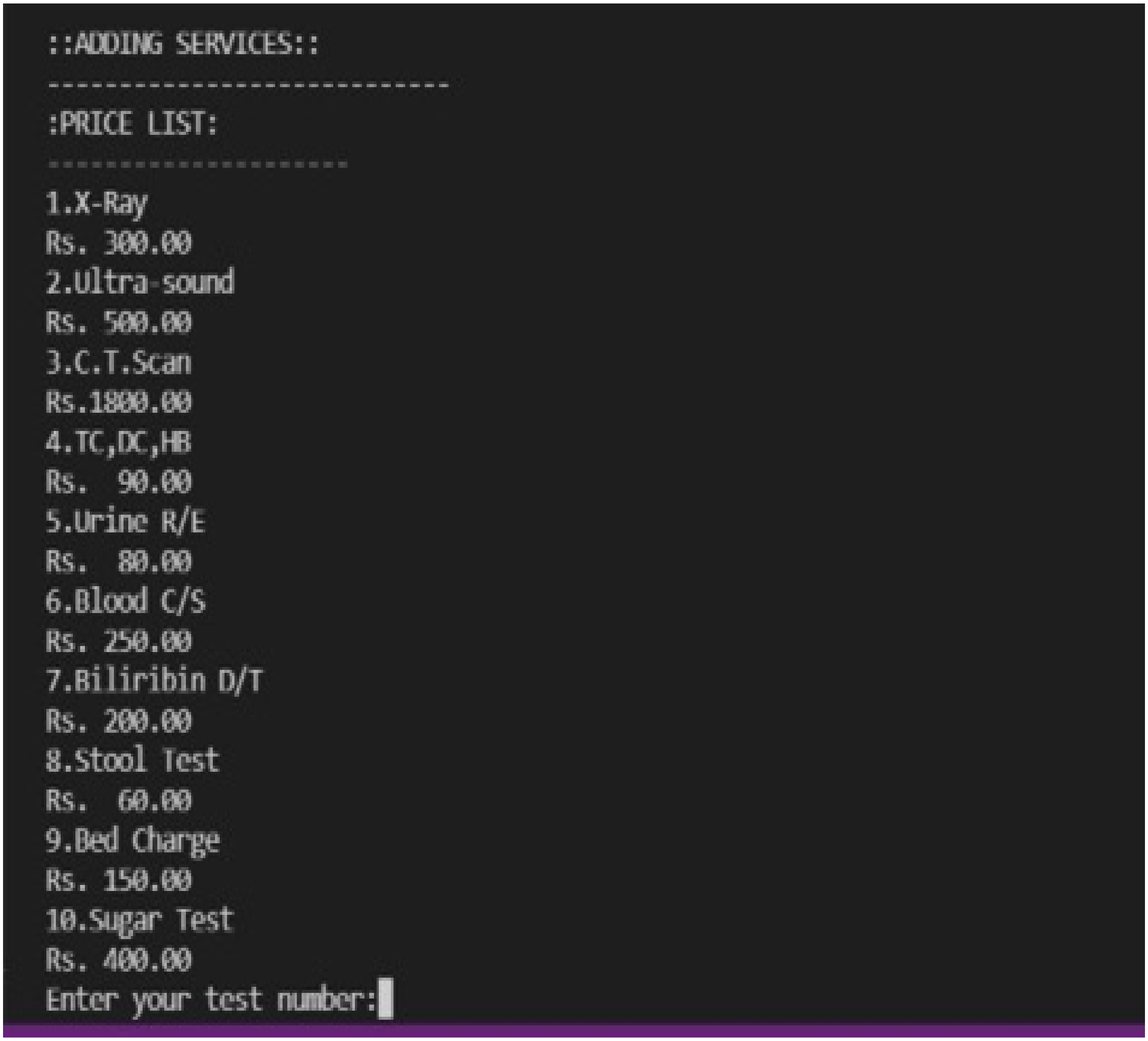
```
PS C:\Users\simran> ./a.exe
                              --------------------------------



                               WELCOME TO RAMAIAH HOSPITAL!



                              --------------------------------
                              1.ADD A PATIENT
                              2.DELETE A RECORD
                              3.DISPLAY ALL APPOINTMENTS
                              Enter your choice:1
Enter patient Name:John
Enter the patient's age:12
Enter your home address:abc
Enter your phone number:123
Enter the blood group of Patient:A+
Enter the reg no:01
```

DISEASE INFO. & SPECIALIST ALLOTMENT:



```
                Please Refer this Table for your disease!
1.Heart attack
2.Severe wound/Bleeding
3.Cancer
4.Chest pain
5.Fracture
6.Diabetes Checkup
7.Infection
8.Viral Fever
9.Common Cold/Head ache
Enter your disease Number:2

:Specialists:
---------------
Room No.
----------
1.General Physician
201,255
2.E.N.T
302
3.Cardiologist
509
4.Dermatologist
406
5.Gastroenterologist
308
6.Pediatrician
207
7.EYE Specialist
102
8.Nephrologist
109
9.General Surgeon
407,213
10.Accupuncturist
123
Enter your specialist number:
```

TEST SERVICES:



```
::ADDING SERVICES::
-----------------------------
:PRICE LIST:
----------------------
1.X-Ray
Rs. 300.00
2.Ultra-sound
Rs. 500.00
3.C.T.Scan
Rs.1800.00
4.TC,DC,HB
Rs.  90.00
5.Urine R/E
Rs.  80.00
6.Blood C/S
Rs. 250.00
7.Biliribin D/T
Rs. 200.00
8.Stool Test
Rs.  60.00
9.Bed Charge
Rs. 150.00
10.Sugar Test
Rs. 400.00
Enter your test number:
```

CHAPTER 9: ADVANTAGES

- ✓ Time-saving Technology.
- ✓ Improved Efficiency by avoiding human errors.
- ✓ Cost effective and easily manageable.
- ✓ Reduces the work of documentation.

CHAPTER 10: CONCLUSION

- ❖ The project is designed in such a way that future modifications can be done easily. The following conclusion can be deduced from the development of the project.
- ➢ Automation of the entire system improves the efficiency.
- ➢ It effectively overcomes the delay ion communications.
- ➢ Updating the information becomes so easier.
- ➢ System security, data security and reliability are the striking features.
- ➢ The system has adequate scope for modification in future if necessary.

CHAPTER 11: FURTHER ENHANCEMENTS

- ❖ Linking the project with database to be more efficient and to make sure the record is well stored.
- ❖ Editing Patient details.
- ❖ Enabling payment gateway for patient to pay bills or test fees.
- ❖ Enabling User authentication.
- ❖ Scaling this to a GUI application using Java, C#.