1.0Analysis of the problem

Develop a C++ program to help a small private hospital to compute multiple patient's bill during their check out from the hospital. This system should be able to compute multiple patient's bill on a specific day. When patients are checked out from the private hospital, this program should prompt the admin to input the number of patients and patients' name discharging on a specific day. The program should also be able to prompt the user to input the patients' number of days of the stay in hospital, patients' room type, patients' type of surgery they underwent, patients' number of hours of surgery they underwent, patient's type of medication needed and patient's type of services used. The program should be able to compute a patient's bill by taking into account these parameters which includes, the type of surgery underwent by a patient with a specific rate charges, the type of medication that a patient received or consumed with a specific price for each medication, the type of room taken by a patient with a specific rate charges which includes meals for each day and the type of services that is used by a patient or to treat a patient with a specific price for each type of services. Then, this program should be able to display the total charges of hospital stay of each patient, the total charges of surgery cost of each patient, the total charges of medication cost of each patient, the total charges of services cost of each patient, the total bill of each patient, total charges for all patient, total charges for each category which includes, hospital stay, surgery cost, medication cost and services cost, the average days spent for all patient, the patient who is paying the highest bill and the patient who is paying the lowest bill.

2.0 The specification of the requirements

2.1 Input

1. Number of patients discharging on a specific day
2. Patients' name
3. Patients' number of days of the stay in hospital
4. Patients' room type
5. Patients' type of surgery they underwent
6. Patients' number of hours of surgery they underwent
7. Patient's type of medication needed
8. Patient's type of services used

2.2 Process

1. Program will get the input from the admin on the number of patients discharging on a specific day
2. An error message will be displayed and the program will prompt the admin to input correctly.
3. Program will get the input from the admin on the patients' name.
4. Program will get the input from the admin on the patients' number of days of the stay in hospital
5. An error message will be displayed and the program will prompt the admin to input correctly.
6. Program will get the input from the admin on the patients' room type
7. An error message will be displayed if the input is invalid and the program will prompt the admin again to input correctly.
8. Program will get the input from the admin on the patients' type of surgery they underwent
9. An error message will be displayed if the input is invalid and the program will prompt the admin again to input correctly.
10. Program will get the input from the admin on the patients' number of hours of surgery they underwent
11. An error message will be displayed if the input is invalid and the program will prompt the admin again to input correctly.
12. Program will get the input from the admin on the type of medication consumed by the patient
13. An error message will be displayed if the input is invalid and the program will prompt the admin again to input correctly.
14. Program will get the input from the admin on the patient's type of services used
15. Program will display the price of the medication.

16. Program will get the input from the admin on the type of services used by the patient
17. An error message will be displayed if the input is invalid and the program will prompt the admin again to input correctly.
18. Program will prompt the admin to ask if there's more services used by the patient.
19. Program will continue to receive input on the type of services used as long as the admin provides an input.
20. An error message will be displayed if the input is invalid and the program will prompt the admin again to input correctly.
21. Program will calculate the total price of the hospital stay for each patient.
22. Program will display the total price of hospital stay for each patient.
23. Program will calculate the total price of the surgery cost for each patient.
24. Program will display the total price of surgery cost for each patient.
25. Program will calculate the total price of the medication cost for each patient.
26. Program will display the total price of medication cost for each patient.
27. Program will calculate the total price of the services cost for each patient.
28. Program will display the total price of services cost for each patient.
29. Program will calculate the total bill for each patient.
30. Program will display the total bill for each patient.
31. Program will calculate the total charges for all patient.
32. Program will display the total charges for all patient.
33. Program will calculate the total charges of hospital stay for all patient.
34. Program will display the total charges of hospital bill for all patient.
35. Program will calculate the total charges of surgery cost for all patient.
36. Program will display the total charges of surgery cost for all patient.
37. Program will calculate the total charges of medication cost for all patient.
38. Program will display the total charges of medication cost for all patient.
39. Program will calculate the total charges of services cost for all patient.
40. Program will display the total charges of services cost for all patient.
41. Program will calculate the average days spent for all patient.
42. Program will display the average days spent for all patient.
43. Program will calculate the patient who is paying the highest bill.
44. Program will display the patient who is paying the highest bill.
45. Program will calculate the patient who is paying the lowest bill.
46. Program will display the patient who is paying the lowest bill.

2.3 Output

1. The total charges of hospital stay of each patient

2. The total charges of surgery cost of each patient
3. The total charges of medication cost of each patient
4. The total charges of services cost of each patient
5. The total bill of each patient
6. Total charges for all patient
7. Total charges for category, hospital stay
8. Total charges for category, surgery cost
9. Total charges for category, medication cost
10. Total charges for category, services cost
11. The average days spent for all patient
12. The patient who is paying the highest bill.
13. The patient who is paying the lowest bill.

2.4 Constraints

1. The data input must be a positive integer.
2. There will not be multiple inputs available for the number of days of the stay in hospital, type of surgery of the patient and the type of medication needed.

2.5 Assumptions

1. The type of service charges is set to have multiple inputs since it is assumed that each surgery will have its own specific set of services to be done.
2. The bills and totals calculated are based on one specific check out day for patients.

3.0 Variables Definition

Variables	Definition
typeSurgery	Type of Surgery
typeMedication	Type of Medication
typeServices	Type of Services
typeRoom	Types of Hospital Rooms
daysSpent	Number of Days spent in Hospital
hoursSurgery	Hours of Surgery
rateHospital	Rate of Hospital
rateSurgery	Rate of Surgery
rateMedication	Rate of Medication
baseprice	Base Price
priceMedication	Price of Medication
priceServices	Price of Services
priceHospital	Price of Hospital
priceSurgery	Price of Surgery
priceTotal	Patient's Total Hospital Bill
room1	Deluxe Room
room2	Twin Sharing Room
room3	4 Bedded Room
room4	6 Bedded Room
room5	Delivery Room
food1	Meals for Deluxe Room (3 times a day)
food2	Meals for Twin Sharing Room (3 times a day)
food3	Meals for 4 Bedded Room (3 times a day)
food4	Meals for 6 Bedded Room (3 times a day)
food5	Meals for Delivery room (3 times a day)
surgery1	Cesarean delivery Surgery
surgery2	Plastic Surgery
surgery3	Thyroid Surgery
surgery4	Cataract Surgery
surgery5	Spine Surgery
service1	X-ray Services
service2	Blood Test Services
service3	DNA Test Services
service4	Physiotherapy Services
service5	Rehabilitative Services
med1	Antibiotic
med2	Local Anesthetic
med3	General Anesthetic
med4	Inflamatory

med5	Painkiller
costHospital	Cost of Hospital
costSurgery	Cost of Surgery
costMedication	Cost of Medication
costService	Cost of Service
string arrayName[SIZE]	Array for patients' name
int noofdays[SIZE]	Array for number of days patients spent in hospital
int hospitalStay[SIZE]	Array for number of hospital stay cost
int surgeryCost[SIZE]	Array for number of surgery cost
int medicationCost[SIZE]	Array for number of medication cost
int servicesCost[SIZE]	Array for number of services cost
int totalBill[SIZE]	Array for total bill of each patient array

4.0 CODE

```
//Purpose of program: To calculate multiple patient's bill with multiple factors.
//Program name: Private hospital billing system.
//Developers:JASON LEONG SHENG JUN 158891
//           VEYTRI A/L YOGAN 158648
#include<iostream>
#include<string>
using namespace std;

int days(string [], int, int);                //function prototypes for functions that are to be used:
int hospital(string [], int [], int, int);
int surgery(string [], int, int);
int medication(string [], int, int);
int services(string [], int, int);
int total(int [], int);
int highest(int [], int);
int lowest(int [], int);

const int room1=800, room2=500, room3=350, room4=100, room5=600;   //constants global variable which values are fixed
const int food1=90, food2=70, food3=50, food4=40, food5=80;        //constants global variable which values are fixed
const int surgery1=600, surgery2=800, surgery3=350, surgery4=350, surgery5=1500;  //constants global variable which values are fixed
const int med1=30, med2=90, med3=150, med4=15, med5=20;            //constants global variable which values are fixed
const int service1=80, service2=140, service3=500, service4=200, service5=700;    //constants global variable which values are fixed

```

```

//Group decision for rates, prices and options

// Room types : 1. Deluxe        800$ per day with 90$ charges of meal (3 times a day)
//              2. Twin sharing  500$ per day with 70$ charges of meal (3 times a day)
//              3. 4 bedded      350$ per day with 50$ charges of meal (3 times a day)
//              4. 6 bedded      100$ per day with 40$ charges of meal (3 times a day)
//              5. Delivery room 600$ per day with 80$ charges of meal (3 times a day)

// Pricing list: <<"1. Cesarean delivery "<<endl;        600$ per hour
// (Surgery)     <<"2. Plastic "<<endl;                  800$ per hour
//               <<"3. Thyroid "<<endl;                  350$ per hour
//               <<"4. Cataract "<<endl;                 350$ per hour
//               <<"5. Spine "<<endl;                    1500$ per hour

// Pricing list:    <<"1. Antibiotic "<<endl;       30$
// (Medication)     <<"2. Local Anesthetic"<<endl;  90$
//                  <<"3. Strong Anesthetic"<<endl; 150$
//                  <<"4. Anti-Inflamatory"<<endl;  15$
//                  <<"5. Allergy"<<endl;           20$

// Pricing list:    <<"1. X-ray "<<endl;             80$
// (Services)       <<"2. Blood Test "<<endl;        140$
```

```
// Pricing list:    <<"1. X-ray "<<endl;             80$
// (Services)       <<"2. Blood Test "<<endl;        140$
//                  <<"3. DNA Test "<<endl;          500$
//                  <<"4. Physiotherapy "<<endl;     200$
//                  <<"5. Rehabilitative "<<endl;    700$

int main()
{
    int SIZE;

    cout<<"How many patients are discharging today? "<<endl;     //user input for size of array
    cin>>SIZE;
    while(SIZE<=0){
        cout<<"Error! Try again."<<endl    //error check
            <<"How many patients are discharging today? "<<endl;
        cin>>SIZE;
    }

    string arrayName[SIZE];    //declare array

    for(int i=0; i<SIZE; i++){
        cout<<"Enter patient first name #"<<i+1<<" : "<<endl;    //inputing for array patient name
        cin>>arrayName[i];
```

```
        cout<<"Enter patient first name #"<<i+1<<" : "<<endl;    //inputing for array patient name
        cin>>arrayName[i];
    }

    int noofdays[SIZE];                          //array for number of days patient spent in hospital
    for(int i=0; i<SIZE; i++){
        noofdays[i]=days(arrayName, SIZE, i);     //call fucntion and assingning to the array
    }

    int hospitalStay[SIZE];                      //array for number of hospital stay cost
    for(int i=0; i<SIZE; i++){
        hospitalStay[i]=hospital(arrayName, noofdays, SIZE, i);      //call fucntion and assingning to the array
    }

    int surgeryCost[SIZE];                        //array for number of surgery cost
    for(int i=0; i<SIZE; i++){
        surgeryCost[i]=surgery(arrayName, SIZE, i);                //call fucntion and assingning to the array
    }

    int medicationCost[SIZE];                     //array for number of medication cost
    for(int i=0; i<SIZE; i++){
        medicationCost[i]=medication(arrayName, SIZE, i);        //call fucntion and assingning to the array
    }
```

```
    for(int i=0; i<SIZE; i++){
        medicationCost[i]=medication(arrayName, SIZE, i);        //call fucntion and assingning to the array
    }

    int servicesCost[SIZE];                       //array for number of services cost
        for(int i=0; i<SIZE; i++){
        servicesCost[i]=services(arrayName, SIZE, i);    //call fucntion and assingning to the array
    }

    int totalBill[SIZE];                        //array for total bill of each patient array
    for(int i=0; i<SIZE; i++){
        totalBill[i]=hospitalStay[i]+surgeryCost[i]+medicationCost[i]+servicesCost[i];         //adding with using array and assigning into a seperate array
    }

    for(int i=0; i<SIZE; i++){          //outputing information for every patient using array
        cout<<endl;
        cout<<"The bill for patient #"<<i+1<<" ("<<arrayName[i]<<") is:"<<endl;
        cout<<"Hospital Stay: RM"<<hospitalStay[i]<<endl;          //output category price of each patient
        cout<<"Surgery Cost: RM"<<surgeryCost[i]<<endl;
        cout<<"Medication Cost: RM"<<medicationCost[i]<<endl;
        cout<<"Services Cost: RM"<<servicesCost[i]<<endl;
        cout<<"Total bill for this patient is: RM"<<totalBill[i]<<endl;   //output total price of each patient
    }

    int totalPatientBill=total(totalBill, SIZE);    //calling function for sum of charges
    cout<<endl:
```

```
    }

    int totalPatientBill=total(totalBill, SIZE);    //calling function for sum of charges
    cout<<endl;
    cout<<"Total charges for all patient: RM"<<totalPatientBill<<endl;    //output total price of all patient

    int totalCategoryHospitalStay=total(hospitalStay, SIZE);          //calling function for sum of category charges
    cout<<endl;
    cout<<"Total charges for category, hospital stay: RM"<<totalCategoryHospitalStay<<endl; //output of total price of a category

    int totalCategorySurgery=total(surgeryCost, SIZE);     //calling function for sum of category charges
    cout<<endl;
    cout<<"Total charges for category, surgery cost: RM"<<totalCategorySurgery<<endl; //output of total price of a category

    int totalCategoryMedication=total(medicationCost, SIZE); //calling function for sum of category charges
    cout<<endl;
    cout<<"Total charges for category, medication cost: RM"<<totalCategoryMedication<<endl; //output of total price of a category

    int totalCategoryServices=total(servicesCost, SIZE); //calling function for sum of category charges
    cout<<endl;
    cout<<"Total charges for category, services cost: RM"<<totalCategoryServices<<endl;  //output of total price of a category

    double sumofdays;
```

```

    double sumofdays;
    for(int i=0; i<SIZE; i++){
        sumofdays=sumofdays+noofdays[i];     //summing all number of days for all patient
    }
    cout<<endl;
    cout<<"The average days spent for all patient is: "<<(sumofdays/SIZE)<<" days."<<endl; //outputing and calculating the average days spent i

    int highestPayer=highest(totalBill, SIZE);   //calling function for highest paid charges of a patient
    cout<<endl;
    cout<<"The patient who is paying the highest bill is patient: "<<arrayName[highestPayer]<<endl;  //outputing name of patient of highest bil

    int lowestPayer=lowest(totalBill, SIZE);    //calling function for lowest paid charges of a patient
    cout<<"The patient who is paying the lowest bill is patient: "<<arrayName[lowestPayer]<<endl;      //outputing name of patient of lowest bi

    return 0;
}

int days(string names [], int size, int i)  //function header for days spent in hospital
{
    int daysSpent;

    cout<<endl;
```

```
149
150     cout<<endl;
151     cout<<"Patient #"<<i+1<<" : "<<names[i]<<endl;
152     cout<<"Number of days spent: ";        //request input from user
153     cin>>daysSpent;
154     while(daysSpent<=0){
155         cout<<"Error! Try again."<<endl    //error checker
156             <<"Number of days spent: ";
157         cin>>daysSpent;
158     }
159
160     return daysSpent;   //return value and assigning it onto array in main funtion
161 }
162
163 int hospital(string names [], int daysSpent [], int size, int i) //function header for hospital stay cost
164 {
165     int typeRoom;   //declaration
166     int costHospital;
167
168     cout<<endl;
169     cout<<"Patient #"<<i+1<<" : "<<names[i]<<endl;
170     cout<<"Room Type"<<endl          //display choices and menu for user
171         <<"--------------------"<<endl
```

```
170     cout<<"Room Type"<<endl          //display choices and menu for user
171         <<"--------------------"<<endl
172         <<"1. Deluxe "<<endl
173         <<"2. Twin sharing "<<endl
174         <<"3. 4 bedded  "<<endl
175         <<"4. 6 bedded "<<endl
176         <<"5. Delivery room "<<endl
177         <<"Enter the the type of room (number) "<<endl;
178     cin>>typeRoom;
179     while(typeRoom<=0 || typeRoom>5){
180         cout<<"Error! Try again."<<endl       //error check for wrong choice
181             <<"Enter the the type of room (number) "<<endl;
182         cin>>typeRoom;
183     }
184     if(typeRoom==1)
185         costHospital=(room1*daysSpent[i])+(food1*daysSpent[i]);  //calculation of hospital stay cost based on constant global variable
186     else if(typeRoom==2)
187         costHospital=(room2*daysSpent[i])+(food2*daysSpent[i]);
188     else if(typeRoom==3)
189         costHospital=(room3*daysSpent[i])+(food3*daysSpent[i]);
190     else if(typeRoom==4)
191         costHospital=(room4*daysSpent[i])+(food4*daysSpent[i]);
192     else if(typeRoom==5)
```

```
191         costHospital=(room4*daysSpent[i])+(food4*daysSpent[i]);
192     else if(typeRoom==5)
193         costHospital=(room5*daysSpent[i])+(food5*daysSpent[i]);
194
195     return costHospital; //return value and assigning it onto array in main funtion
196 }
197
198 int surgery(string names [], int size, int i)  //function header for surgery cost
199 {
200     int typeSurgery, hoursSurgery;   //declaration
201     int costSurgery;
202
203     cout<<endl;
204     cout<<"Patient #"<<i+1<<" : "<<names[i];
205     cout<<"\nSurgery Type"<<endl          //display choices and menu for user
206         <<"--------------------"<<endl
207         <<"1. Cesarean delivery "<<endl
208         <<"2. Plastic "<<endl
209         <<"3. Thyroid "<<endl
210         <<"4. Cataract "<<endl
211         <<"5. Spine "<<endl
212         <<"Enter the the type of surgery (number) "<<endl;
213     cin>>typeSurgery;
```

```
212         <<"Enter the the type of surgery (number) "<<endl;
213     cin>>typeSurgery;
214     while(typeSurgery<=0 || typeSurgery>5){
215         cout<<"Error! Try again."<<endl        //error check for wrong choice
216             <<"Enter the the type of surgery (number) "<<endl;
217         cin>>typeSurgery;
218     }
219     cout<<"Hours on surgery: ";  //get the hours from user
220     cin>>hoursSurgery;
221     while(hoursSurgery<=0){
222         cout<<"Error! Try again."<<endl  //error check for wrong input
223             <<"Hours on surgery: ";
224         cin>>hoursSurgery;
225     }
226     if(typeSurgery==1)
227         costSurgery=surgery1*hoursSurgery;   //calculation of hospital stay cost based on constant global variable
228     else if(typeSurgery==2)
229         costSurgery=surgery2*hoursSurgery;
230     else if(typeSurgery==3)
231         costSurgery=surgery3*hoursSurgery;
232     else if(typeSurgery==4)
233         costSurgery=surgery4*hoursSurgery;
234     else if(typeSurgery==5)
```

```
    costSurgery=surgery4*hoursSurgery;
else if(typeSurgery==5)
    costSurgery=surgery5*hoursSurgery;

return costSurgery;    //return value and assigning it onto array in main funtion
}

int medication(string names[], int size, int i)  //function header for medication costs
{
    int typeMedication;   //declaration
    int costMedication;

    cout<<endl;
    cout<<"Patient #"<<i+1<<" : "<<names[i];
    cout<<"\nMedication Type"<<endl           //display choices and menu for user
        <<"--------------------"<<endl
        <<"1. Antibiotic "<<endl
        <<"2. Local Anesthetic"<<endl
        <<"3. Strong Anesthetic"<<endl
        <<"4. Anti-Inflamatory"<<endl
        <<"5. Allergy"<<endl
        <<"Enter the the type of medication (number) "<<endl;
```

```
        <<"5. Allergy"<<endl
        <<"Enter the the type of medication (number) "<<endl;
    cin>>typeMedication;
    while(typeMedication<=0 || typeMedication>5){
        cout<<"Error! Try again."<<endl             //error check
            <<"Enter the the type of medication (number) "<<endl;
        cin>>typeMedication;
    }
    if(typeMedication==1)         //calculation of hospital stay cost based on constant global variable
        costMedication=med1;
    else if(typeMedication==2)
        costMedication=med2;
    else if(typeMedication==3)
        costMedication=med3;
    else if(typeMedication==4)
        costMedication=med4;
    else if(typeMedication==5)
        costMedication=med5;

    return costMedication; //return value and assigning it onto array in main funtion
}

int services(string names [], int size, int i) //function header for services cost
```

```

int services(string names [], int size, int i) //function header for services cost
{
    int typeServices; //declaration
    int costService=0;
    char addition;

    cout<<endl;
    cout<<"Patient #"<<i+1<<" : "<<names[i];
    cout<<"\nServices Types"<<endl        //display choices and menu for user
        <<"--------------------"<<endl
        <<"1. X-ray "<<endl
        <<"2. Blood Test "<<endl
        <<"3. DNA Test "<<endl
        <<"4. Physiotherapy "<<endl
        <<"5. Rehabilitative "<<endl
        <<"Enter the the type of services (number) "<<endl;
    cin>>typeServices;
    while(typeServices<=0 || typeServices>5){
        cout<<"Error! Try again."<<endl       //error checker for wrong choice
            <<"Enter the the type of services (number) "<<endl;
        cin>>typeServices;
    }
```

```
        cin>>typeServices;
    }
    if(typeServices==1)                    //calculation of hospital stay cost based on constant global variable
        costService=costService+service1;
    else if(typeServices==2)
        costService=costService+service2;
    else if(typeServices==3)
        costService=costService+service3;
    else if(typeServices==4)
        costService=costService+service4;
    else if(typeServices==5)
        costService=costService+service5;

    cout<<"Is there additional services? Type Y if Yes. Type other characters if No "<<endl;   //additional services choice
    cin>>addition;

    while(addition=='Y'){
        cout<<"Enter the the type of services (number) "<<endl;
        cin>>typeServices;
        if(typeServices==1)                        //get total cost of additional servicies
            costService=costService+service1;
        else if(typeServices==2)
            costService=costService+service2;
```

```
        else if(typeServices==2)
            costService=costService+service2;
        else if(typeServices==3)
            costService=costService+service3;
        else if(typeServices==4)
            costService=costService+service4;
        else if(typeServices==5)
            costService=costService+service5;
        cout<<"Is there additional services? Type Y if Yes. Type other characters if No "<<endl; //request for additional services again
        cin>>addition;
    }

    return costService;     //return value and assigning it onto array in main funtion
}

int total(int arrayCost [], int size)  //function header of total of category prices and total charges in main function
{
    int sum=0;

    for(int i=0; i<size; i++){
        sum=sum+arrayCost[i];    //sum counter of the total amount for an array
    }
```

```
    }

    return sum;
}

int highest(int arrayBill [], int size)    //function header to find highest payer
{
    int max=0;  //declaring by index of array

    for(int i=1; i<size; i++){
        if(arrayBill[max]<arrayBill[i])    //sorting the array for maximum in an array
            max=i;
    }

    return max;  //return index of max
}

int lowest(int arrayBill [], int size) //function header to find highest payer
{
    int min=0;  //declaring by index of array

    for(int i=1; i<size; i++){
        if(arrayBill[min]>arrayBill[i])     //sorting the array for minimum in an array
```

```
int highest(int arrayBill [], int size)    //function header to find highest payer
{
    int max=0;  //declaring by index of array

    for(int i=1; i<size; i++){
        if(arrayBill[max]<arrayBill[i])    //sorting the array for maximum in an array
            max=i;
    }

    return max;  //return index of max
}

int lowest(int arrayBill [], int size) //function header to find highest payer
{
    int min=0;  //declaring by index of array

    for(int i=1; i<size; i++){
        if(arrayBill[min]>arrayBill[i])     //sorting the array for minimum in an array
            min=i;
    }

    return min; //return index of min
}
```

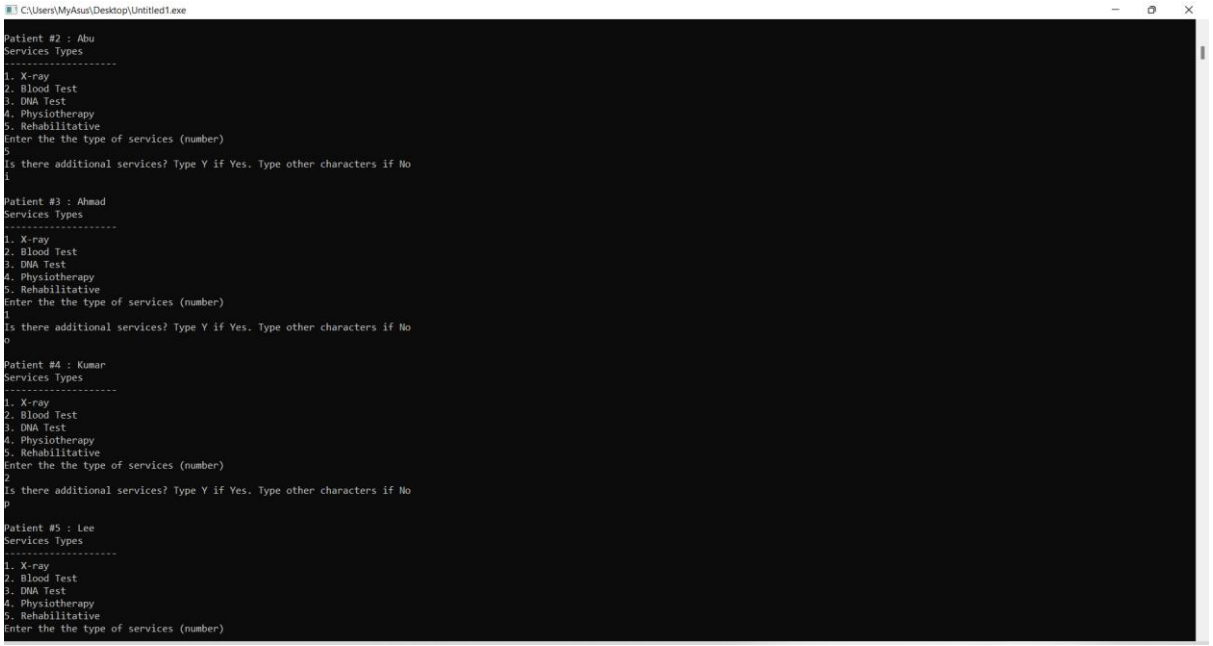
5.0 Sample Cases

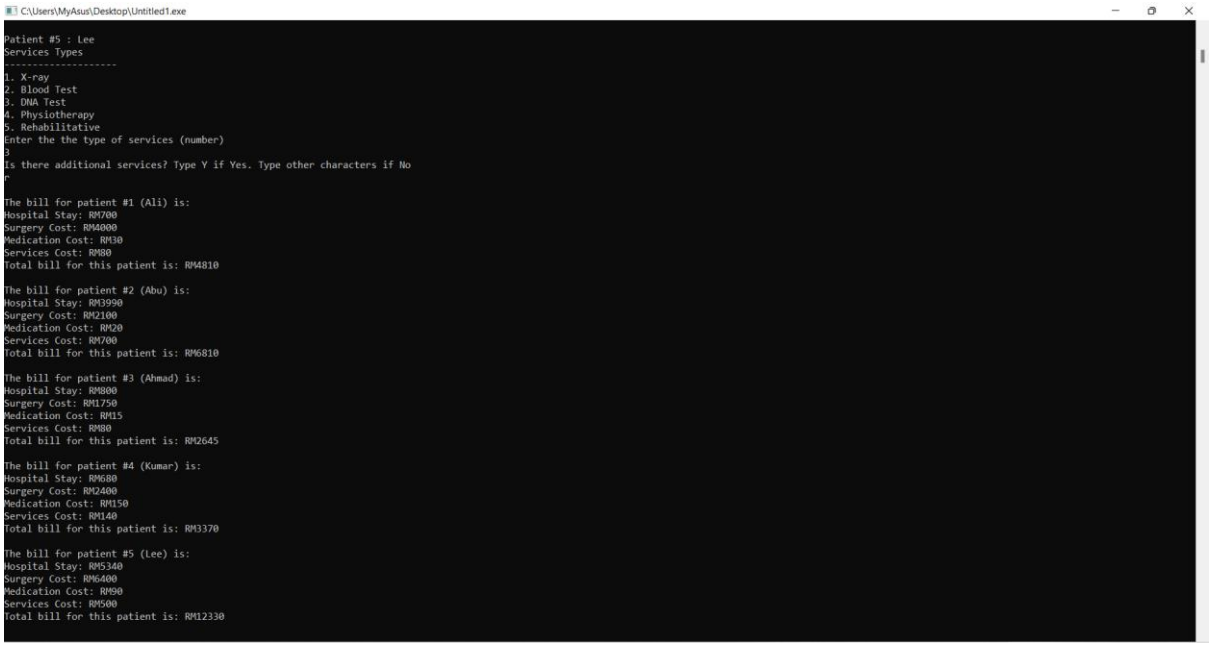
TEST 1 (5 PATIENTS, NO ERROR CHECKING INVOLVED)

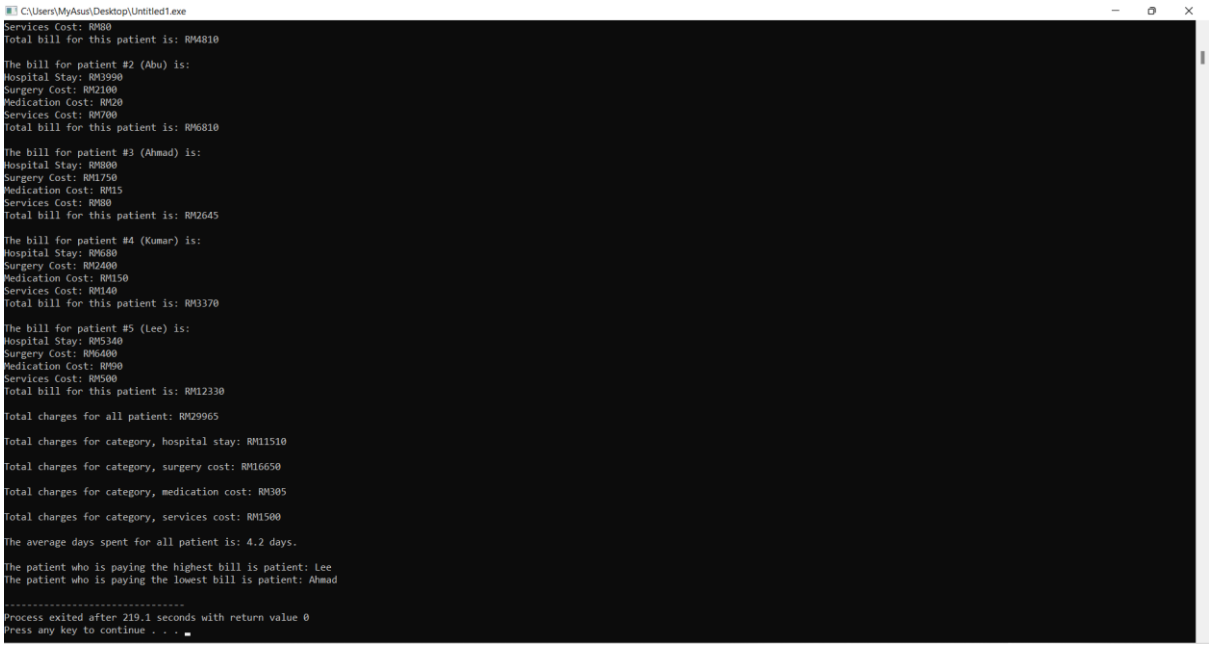

C:\Users\MyAsus\Desktop\Untitled1.exe
1
Patient #1 : Ali
Surgery Type
1. Cesarean delivery
2. Plastic
3. Thyroid
4. Cataract
5. Spine
Enter the the type of surgery (number)
2
Hours on surgery: 5
Patient #2 : Abu
Surgery Type
1. Cesarean delivery
2. Plastic
3. Thyroid
4. Cataract
5. Spine
Enter the the type of surgery (number)
4
Hours on surgery: 6
Patient #3 : Ahmad
Surgery Type
1. Cesarean delivery
2. Plastic
3. Thyroid
4. Cataract
5. Spine
Enter the the type of surgery (number)
1
Hours on surgery: 5
Patient #4 : Kumar
Surgery Type
1. Cesarean delivery
2. Plastic
3. Thyroid
4. Cataract
5. Spine
Enter the the type of surgery (number)
1
Hours on surgery: 4


C:\Users\MyAsus\Desktop\Untitled1.exe
Surgery Type
1. Cesarean delivery
2. Plastic
3. Thyroid
4. Cataract
5. Spine
Enter the the type of surgery (number)
1
Hours on surgery: 4
Patient #5 : Lee
Surgery Type
1. Cesarean delivery
2. Plastic
3. Thyroid
4. Cataract
5. Spine
Enter the the type of surgery (number)
2
Hours on surgery: 8
Patient #1 : Ali
Medication Type
1. Antibiotic
2. Local Anesthetic
3. Strong Anesthetic
4. Anti-Inflamatory
5. Allergy
Enter the the type of medication (number)
1
Patient #2 : Abu
Medication Type
1. Antibiotic
2. Local Anesthetic
3. Strong Anesthetic
4. Anti-Inflamatory
5. Allergy
Enter the the type of medication (number)
5
Patient #3 : Ahmad
Medication Type
1. Antibiotic


C:\Users\MyAsus\Desktop\Untitled1.exe
Patient #3 : Ahmad
Medication Type
1. Antibiotic
2. Local Anesthetic
3. Strong Anesthetic
4. Anti-Inflamatory
5. Allergy
Enter the the type of medication (number)
4
Patient #4 : Kumar
Medication Type
1. Antibiotic
2. Local Anesthetic
3. Strong Anesthetic
4. Anti-Inflamatory
5. Allergy
Enter the the type of medication (number)
3
Patient #5 : Lee
Medication Type
1. Antibiotic
2. Local Anesthetic
3. Strong Anesthetic
4. Anti-Inflamatory
5. Allergy
Enter the the type of medication (number)
2
Patient #1 : Ali
Services Types
1. X-ray
2. Blood Test
3. DNA Test
4. Physiotherapy
5. Rehabilitative
Enter the the type of services (number)
1
Is there additional services? Type Y if Yes. Type other characters if No
n
Patient #2 : Abu
Services Types

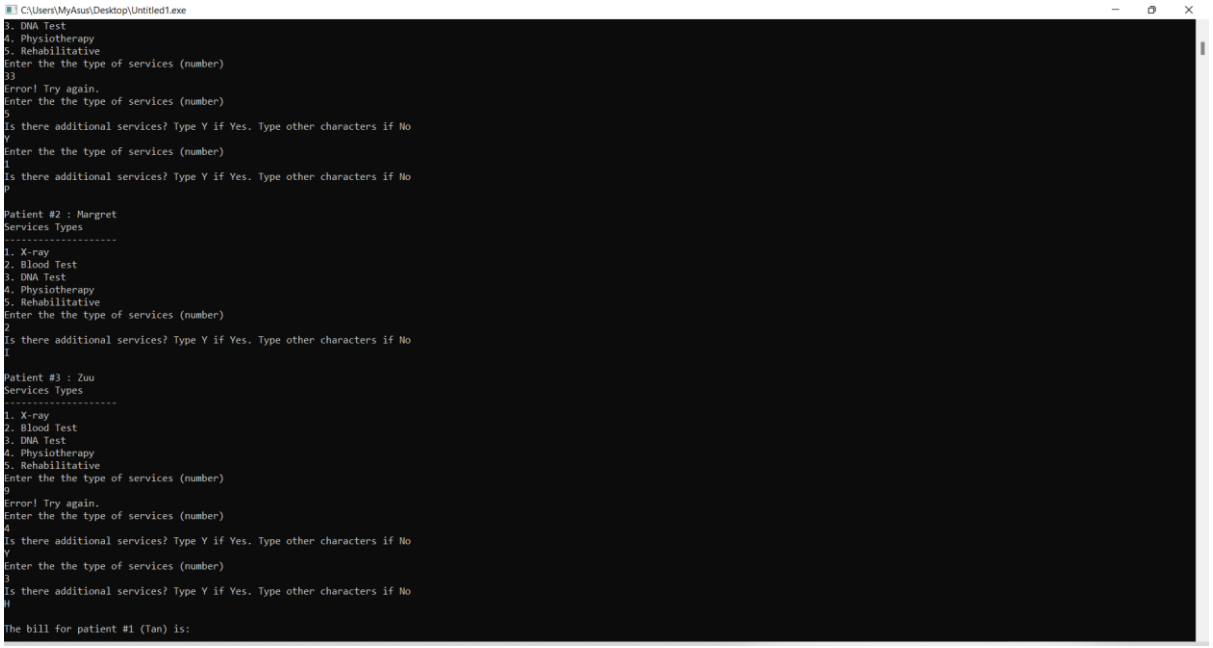

C:\Users\MyAsus\Desktop\Untitled1.exe
Patient #2 : Abu
Services Types
1. X-ray
2. Blood Test
3. DNA Test
4. Physiotherapy
5. Rehabilitative
Enter the the type of services (number)
5
Is there additional services? Type Y if Yes. Type other characters if No
t
Patient #3 : Ahmad
Services Types
1. X-ray
2. Blood Test
3. DNA Test
4. Physiotherapy
5. Rehabilitative
Enter the the type of services (number)
1
Is there additional services? Type Y if Yes. Type other characters if No
o
Patient #4 : Kumar
Services Types
1. X-ray
2. Blood Test
3. DNA Test
4. Physiotherapy
5. Rehabilitative
Enter the the type of services (number)
2
Is there additional services? Type Y if Yes. Type other characters if No
p
Patient #5 : Lee
Services Types
1. X-ray
2. Blood Test
3. DNA Test
4. Physiotherapy
5. Rehabilitative
Enter the the type of services (number)

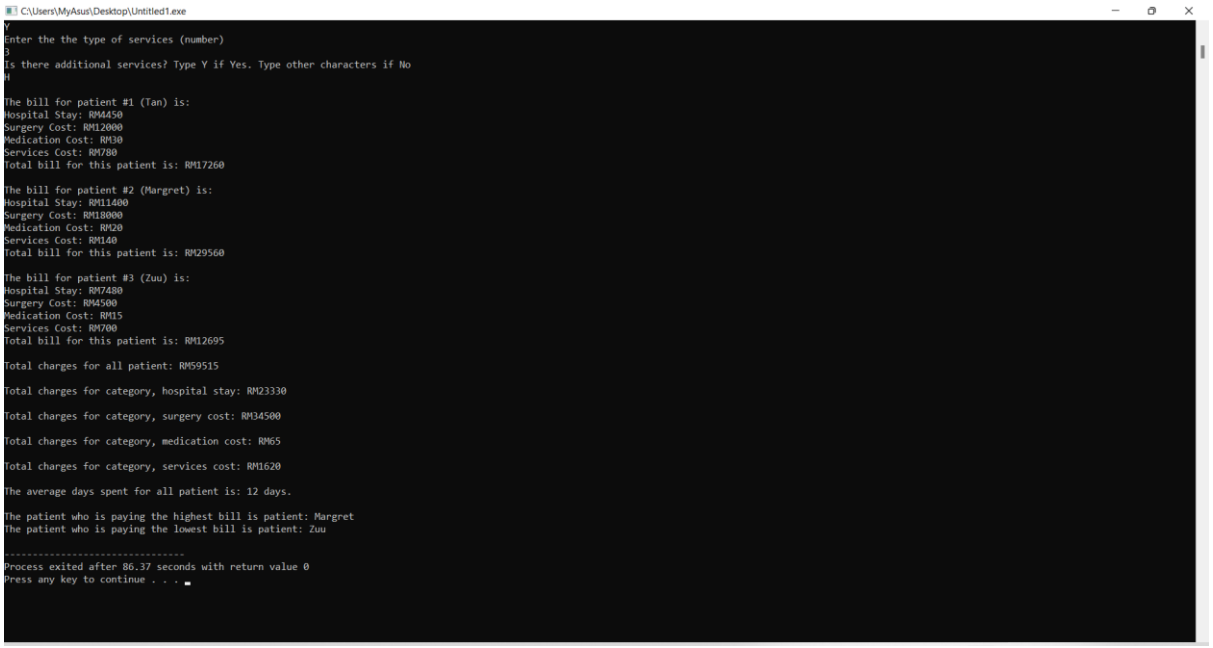

C:\Users\MyAsus\Desktop\Untitled1.exe
Patient #5 : Lee
Services Types
1. X-ray
2. Blood Test
3. DNA Test
4. Physiotherapy
5. Rehabilitative
Enter the the type of services (number)
3
Is there additional services? Type Y if Yes. Type other characters if No
F
The bill for patient #1 (Ali) is:
Hospital Stay: RM700
Surgery Cost: RM4000
Medication Cost: RM30
Services Cost: RM80
Total bill for this patient is: RM4810
The bill for patient #2 (Abu) is:
Hospital Stay: RM3990
Surgery Cost: RM2100
Medication Cost: RM20
Services Cost: RM700
Total bill for this patient is: RM6810
The bill for patient #3 (Ahmad) is:
Hospital Stay: RM800
Surgery Cost: RM1750
Medication Cost: RM15
Services Cost: RM80
Total bill for this patient is: RM2645
The bill for patient #4 (Kumar) is:
Hospital Stay: RM680
Surgery Cost: RM2400
Medication Cost: RM150
Services Cost: RM140
Total bill for this patient is: RM3370
The bill for patient #5 (Lee) is:
Hospital Stay: RM5340
Surgery Cost: RM6400
Medication Cost: RM90
Services Cost: RM500
Total bill for this patient is: RM12330


C:\Users\MyAsus\Desktop\Untitled1.exe
Services Cost: RM80
Total bill for this patient is: RM4810
The bill for patient #2 (Abu) is:
Hospital Stay: RM3990
Surgery Cost: RM2100
Medication Cost: RM20
Services Cost: RM700
Total bill for this patient is: RM6810
The bill for patient #3 (Ahmad) is:
Hospital Stay: RM800
Surgery Cost: RM1750
Medication Cost: RM15
Services Cost: RM80
Total bill for this patient is: RM2645
The bill for patient #4 (Kumar) is:
Hospital Stay: RM680
Surgery Cost: RM2400
Medication Cost: RM150
Services Cost: RM140
Total bill for this patient is: RM3370
The bill for patient #5 (Lee) is:
Hospital Stay: RM5340
Surgery Cost: RM6400
Medication Cost: RM90
Services Cost: RM500
Total bill for this patient is: RM12330
Total charges for all patient: RM29965
Total charges for category, hospital stay: RM11510
Total charges for category, surgery cost: RM16650
Total charges for category, medication cost: RM305
Total charges for category, services cost: RM1500
The average days spent for all patient is: 4.2 days.
The patient who is paying the highest bill is patient: Lee
The patient who is paying the lowest bill is patient: Ahmad
Process exited after 219.1 seconds with return value 0
Press any key to continue . . .

TEST 2 (3 PATIENTS, ERROR CHECKING INVOLVED)

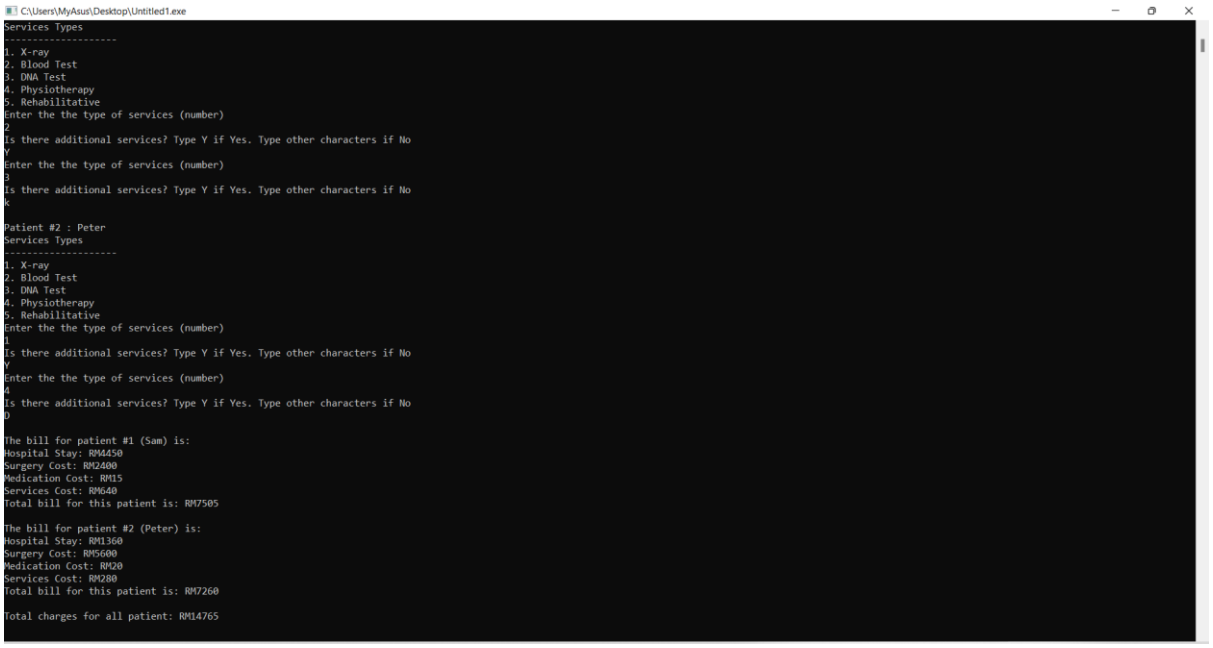

C:\Users\MyAsus\Desktop\Untitled1.exe
3. Thyroid
4. Cataract
5. Spine
Enter the the type of surgery (number)
6
Error! Try again.
Enter the the type of surgery (number)
3
Hours on surgery: 3
Patient #1 : Tan
Medication Type
1. Antibiotic
2. Local Anesthetic
3. Strong Anesthetic
4. Anti-Inflamatory
5. Allergy
Enter the the type of medication (number)
1
Patient #2 : Margret
Medication Type
1. Antibiotic
2. Local Anesthetic
3. Strong Anesthetic
4. Anti-Inflamatory
5. Allergy
Enter the the type of medication (number)
5
Patient #3 : Zuu
Medication Type
1. Antibiotic
2. Local Anesthetic
3. Strong Anesthetic
4. Anti-Inflamatory
5. Allergy
Enter the the type of medication (number)
4
Patient #1 : Tan
Services Types
1. X-ray
2. Blood Test
3. DNA Test


C:\Users\MyAsus\Desktop\Untitled1.exe
3. DNA Test
4. Physiotherapy
5. Rehabilitative
Enter the the type of services (number)
33
Error! Try again.
Enter the the type of services (number)
5
Is there additional services? Type Y if Yes. Type other characters if No
Y
Enter the the type of services (number)
1
Is there additional services? Type Y if Yes. Type other characters if No
n
Patient #2 : Margret
Services Types
1. X-ray
2. Blood Test
3. DNA Test
4. Physiotherapy
5. Rehabilitative
Enter the the type of services (number)
2
Is there additional services? Type Y if Yes. Type other characters if No
I
Patient #3 : Zuu
Services Types
1. X-ray
2. Blood Test
3. DNA Test
4. Physiotherapy
5. Rehabilitative
Enter the the type of services (number)
9
Error! Try again.
Enter the the type of services (number)
4
Is there additional services? Type Y if Yes. Type other characters if No
Y
Enter the the type of services (number)
3
Is there additional services? Type Y if Yes. Type other characters if No
H
The bill for patient #1 (Tan) is:


C:\Users\MyAsus\Desktop\Untitled1.exe
Y
Enter the the type of services (number)
5
Is there additional services? Type Y if Yes. Type other characters if No
H
The bill for patient #1 (Tan) is:
Hospital Stay: RM4450
Surgery Cost: RM12000
Medication Cost: RM30
Services Cost: RM780
Total bill for this patient is: RM17260
The bill for patient #2 (Margret) is:
Hospital Stay: RM11400
Surgery Cost: RM18000
Medication Cost: RM20
Services Cost: RM140
Total bill for this patient is: RM29560
The bill for patient #3 (Zuu) is:
Hospital Stay: RM7480
Surgery Cost: RM4500
Medication Cost: RM15
Services Cost: RM700
Total bill for this patient is: RM12695
Total charges for all patient: RM59515
Total charges for category, hospital stay: RM23330
Total charges for category, surgery cost: RM34500
Total charges for category, medication cost: RM65
Total charges for category, services cost: RM1620
The average days spent for all patient is: 12 days.
The patient who is paying the highest bill is patient: Margret
The patient who is paying the lowest bill is patient: Zuu

Process exited after 86.37 seconds with return value 0
Press any key to continue . . .

TEST 3 (2 PATIENTS, ERROR CHECKING INVOLVED)


C:\Users\MyAsus\Desktop\Untitled1.exe
Services Types
1. X-ray
2. Blood Test
3. DNA Test
4. Physiotherapy
5. Rehabilitative
Enter the the type of services (number)
2
Is there additional services? Type Y if Yes. Type other characters if No
Y
Enter the the type of services (number)
3
Is there additional services? Type Y if Yes. Type other characters if No
k
Patient #2 : Peter
Services Types
1. X-ray
2. Blood Test
3. DNA Test
4. Physiotherapy
5. Rehabilitative
Enter the the type of services (number)
1
Is there additional services? Type Y if Yes. Type other characters if No
Y
Enter the the type of services (number)
4
Is there additional services? Type Y if Yes. Type other characters if No
D
The bill for patient #1 (Sam) is:
Hospital Stay: RM4450
Surgery Cost: RM2400
Medication Cost: RM15
Services Cost: RM640
Total bill for this patient is: RM7505
The bill for patient #2 (Peter) is:
Hospital Stay: RM1360
Surgery Cost: RM5600
Medication Cost: RM20
Services Cost: RM280
Total bill for this patient is: RM7260
Total charges for all patient: RM14765


C:\Users\MyAsus\Desktop\Untitled1.exe
1. X-ray
2. Blood Test
3. DNA Test
4. Physiotherapy
5. Rehabilitative
Enter the the type of services (number)
1
Is there additional services? Type Y if Yes. Type other characters if No
Y
Enter the the type of services (number)
4
Is there additional services? Type Y if Yes. Type other characters if No
D
The bill for patient #1 (Sam) is:
Hospital Stay: RM4450
Surgery Cost: RM2400
Medication Cost: RM15
Services Cost: RM640
Total bill for this patient is: RM7505
The bill for patient #2 (Peter) is:
Hospital Stay: RM1360
Surgery Cost: RM5600
Medication Cost: RM20
Services Cost: RM280
Total bill for this patient is: RM7260
Total charges for all patient: RM14765
Total charges for category, hospital stay: RM5810
Total charges for category, surgery cost: RM8000
Total charges for category, medication cost: RM35
Total charges for category, services cost: RM920
The average days spent for all patient is: 3.5 days.
The patient who is paying the highest bill is patient: Sam
The patient who is paying the lowest bill is patient: Peter
Process exited after 56.61 seconds with return value 0
Press any key to continue . . .