Computer Science

(Assignment#4)

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Submitted to:

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“Programming Fundamental”

Riphah School of Computing & Innovation

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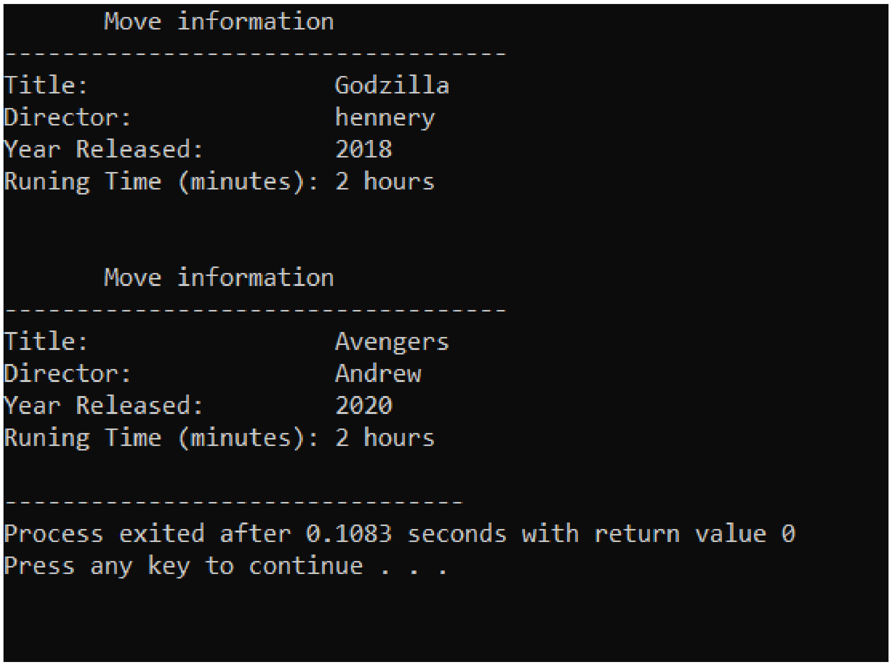
Fall 2022.

Programme:1

```
#include<iostream>

using namespace std;

struct moviedata

{

        string title;

        string Director;

        int year;

        string time;

        };

  void  displayinfo(moviedata);

        int main()

        {

                moviedata a,b;

                a.Director= "hennery";

                a.time= "2 hours";

                a.title= "Godzilla";

                a.year= 2018;


                b.Director= "Andrew";

                b.time= "2 hours";

                b.title= "Avengers";

                b.year=2020;
        displayinfo(a);

        displayinfo(b);


}
void displayinfo(moviedata M)
{
        cout << "\n\n       Move information\n"
   << "-----------------------------------\n";
cout << "Title:                 " << M.title << endl;
cout << "Director:              " << M.Director << endl;
cout << "Year Released:         " << M.year << endl;
cout << "Runing Time (minutes): " << M.time << endl;


}
```

Output:

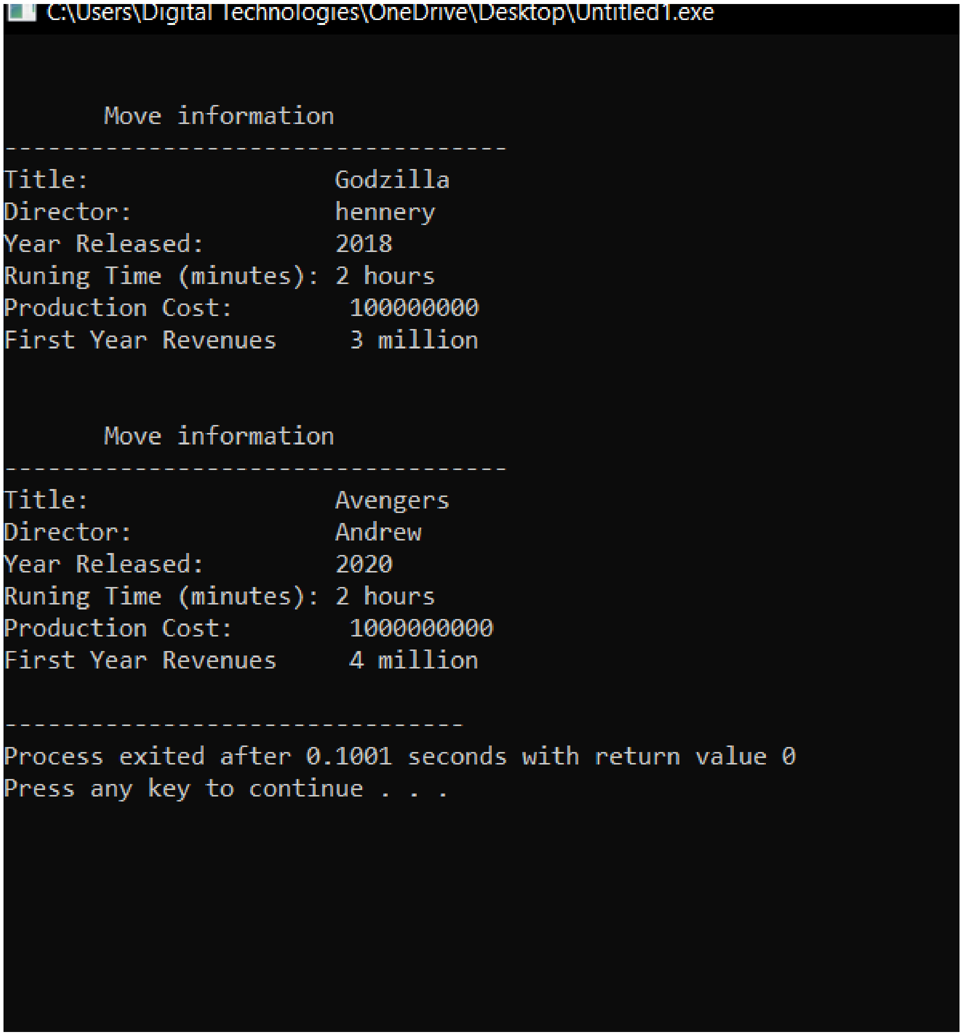


```
       Move information
-----------------------------------
Title:                 Godzilla
Director:              hennery
Year Released:         2018
Runing Time (minutes): 2 hours


       Move information
-----------------------------------
Title:                 Avengers
Director:              Andrew
Year Released:         2020
Runing Time (minutes): 2 hours

--------------------------------
Process exited after 0.1083 seconds with return value 0
Press any key to continue . . .
```

Programme:2

```
#include<iostream>

using namespace std;

struct moviedata

{

        string title;

        string Director;

        int year;

        string time;

        int production_cost;

        string first_yr_revenues;

        };

  void displayinfo(moviedata);

        int main()

        {

                moviedata a,b;

                a.Director= "hennery";

                a.time= "2 hours";

                a.title= "Godzilla";

                a.year= 2018;

                a.production_cost=100000000;

                a.first_yr_revenues="3 million";
        b.Director= "Andrew";

        b.time= "2 hours";

        b.title= "Avengers";

        b.year=2020;

        b.production_cost=1000000000;

        b.first_yr_revenues="4 million";


        displayinfo(a);

        displayinfo(b);


}

void displayinfo(moviedata M)

{

        cout << "\n\n      Move information\n"

    << "----------------------------------\n";

cout << "Title:                " << M.title << endl;

cout << "Director:             " << M.Director << endl;

cout << "Year Released:        " << M.year << endl;

cout << "Runing Time (minutes): " << M.time << endl;

cout<<"Production Cost:       " << M.production_cost<<endl;

cout<<"First Year Revenues     " << M.first_yr_revenues<<endl;


}
```

Output:


C:\Users\Digital Technologies\OneDrive\Desktop\Untitled1.exe

```


       Move information
-----------------------------------
Title:                 Godzilla
Director:              hennery
Year Released:         2018
Runing Time (minutes): 2 hours
Production Cost:        100000000
First Year Revenues     3 million


       Move information
-----------------------------------
Title:                 Avengers
Director:              Andrew
Year Released:         2020
Runing Time (minutes): 2 hours
Production Cost:        1000000000
First Year Revenues     4 million

--------------------------------
Process exited after 0.1001 seconds with return value 0
Press any key to continue . . .
```

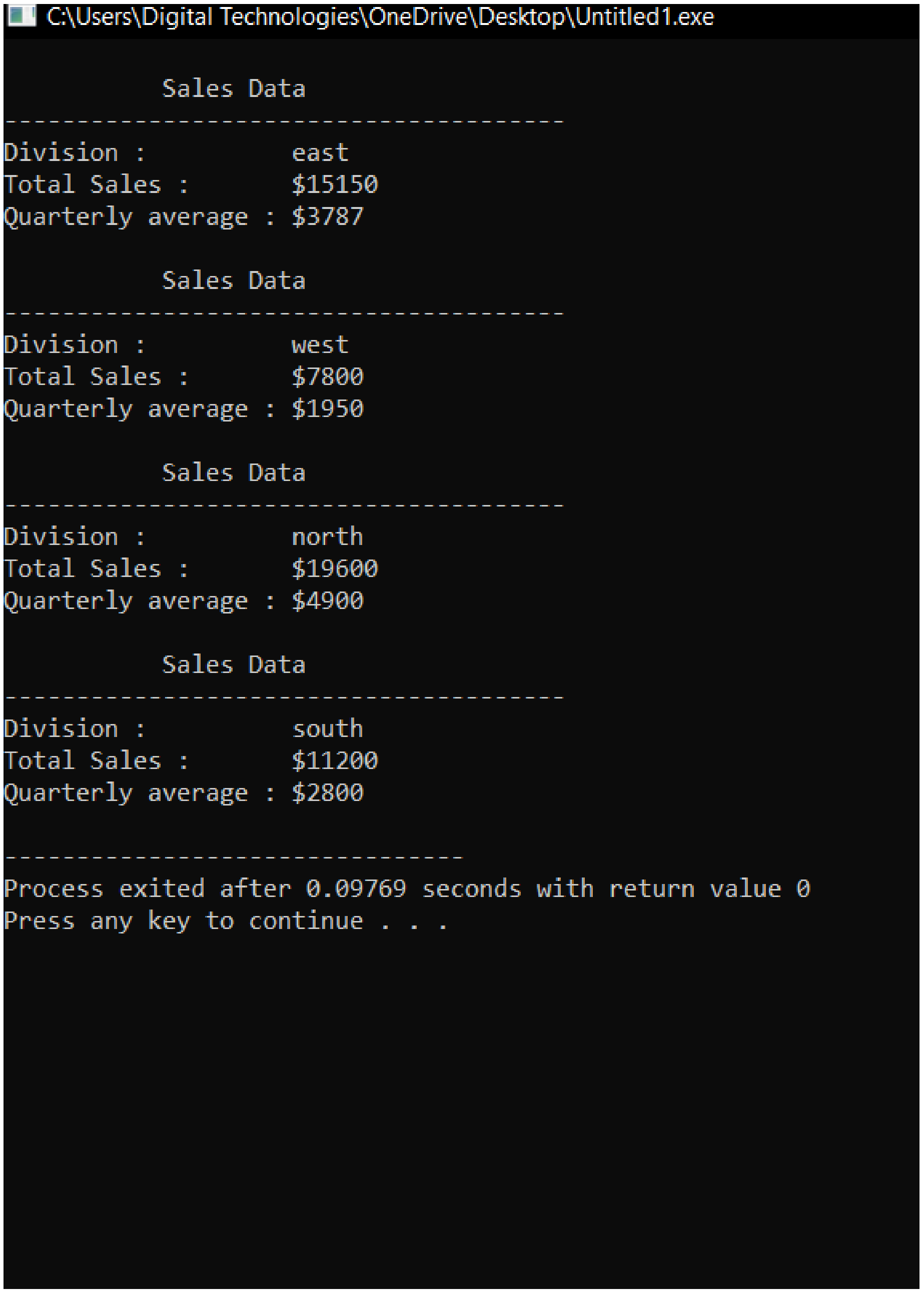
Programme:3

```
#include<iostream>

#include<string>

using namespace std;

struct company

{

	string division_name;
```

```
        int first_quater_sales;
        int second_quater_sales;
        int third_quater_sales;
        int fourth_quater_sales;
        int total_annuel_sales;
        int average_quarterly_sales;
};
void calcost(company &);
void displayinfo(company);
int main()
{
        company A,B,C,D;
   A.division_name="east";
        A.first_quater_sales=1550;
        A.second_quater_sales=3100;
        A.third_quater_sales=3200;
        A.fourth_quater_sales=7300;

   B.division_name="west";
        B.first_quater_sales=1100;
        B.second_quater_sales=4100;
        B.third_quater_sales=1300;
        B.fourth_quater_sales=1300;
```

```
  C.division_name="north";
      C.first_quater_sales=1400;
      C.second_quater_sales=9100;
      C.third_quater_sales=1800;
      C.fourth_quater_sales=7300;

  D.division_name="south";
      D.first_quater_sales=1600;
      D.second_quater_sales=3100;
      D.third_quater_sales=1200;
      D.fourth_quater_sales=5300;

  calcost(A);
  calcost(B);
  calcost(C);
  calcost(D);

  displayinfo(A);
  displayinfo(B);
  displayinfo(C);
  displayinfo(D);
  return 0;
}
void calcost(company &M)
```

```
{
        M.total_annuel_sales=M.first_quater_sales+M.second_quater_sales+M.third_quater_sales+M.fourth_quater_sales;
        M.average_quarterly_sales=M.total_annuel_sales/4;

}
void displayinfo(company D)
{
        cout << "\n          Sales Data\n";
        cout << "-------------------------------------\n";
   //cout << fixed << showpoint << setprecision(2);
        cout << "Division :         " << D.division_name << endl;
        cout << "Total Sales :      $" << D.total_annuel_sales << endl;
        cout << "Quarterly average : $" << D.average_quarterly_sales << endl;
}
```



```
C:\Users\Digital Technologies\OneDrive\Desktop\Untitled1.exe

           Sales Data
---------------------------------------
Division :          east
Total Sales :       $15150
Quarterly average : $3787

           Sales Data
---------------------------------------
Division :          west
Total Sales :       $7800
Quarterly average : $1950

           Sales Data
---------------------------------------
Division :          north
Total Sales :       $19600
Quarterly average : $4900

           Sales Data
---------------------------------------
Division :          south
Total Sales :       $11200
Quarterly average : $2800

--------------------------------
Process exited after 0.09769 seconds with return value 0
Press any key to continue . . .
```

Programme:4

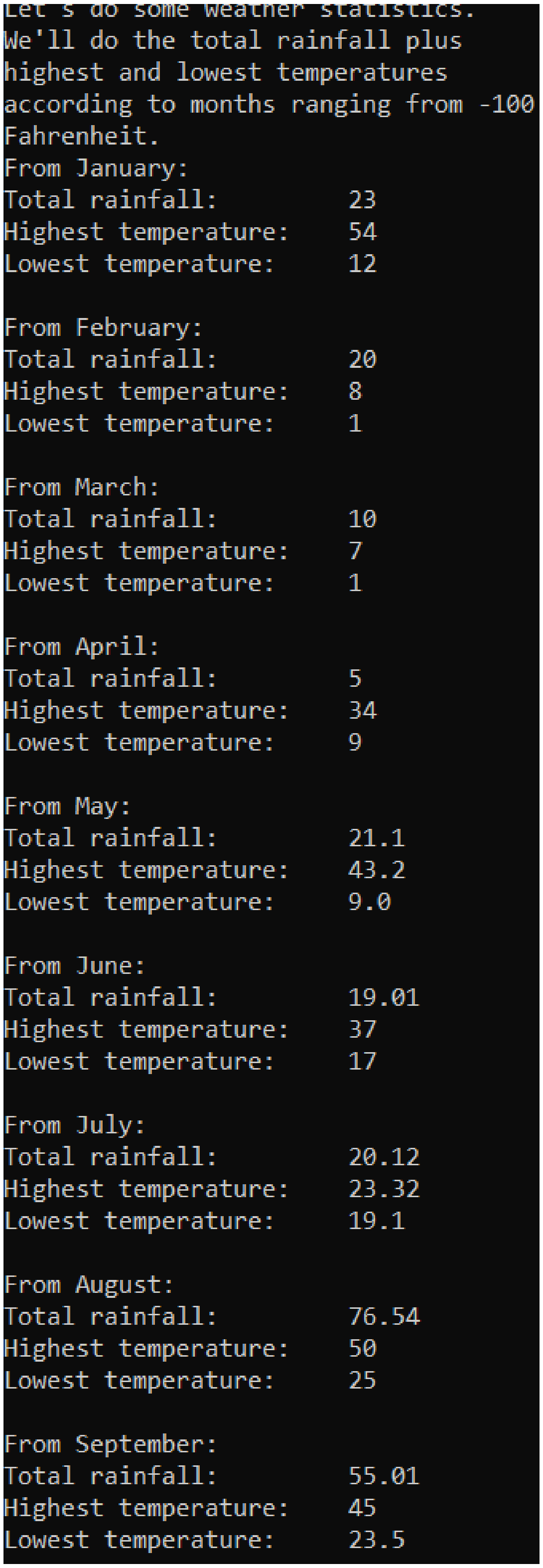
```
#include<iostream>

using namespace std;

const short months = 12;

char MONTHS[months][10] = { "January", "February", "March", "April", "May",
                        "June", "July", "August", "September", "October",
                        "November", "December" } ;
struct Weather_data
{
        float total_rainfall;
        float high_temp;
        float low_temp;
        float avg_temp;
        string month;
};
void setAverage(Weather_data [], int);
double arrayAverage(Weather_data [], string);
void max_min_temp(Weather_data [], short&, short&);
void getData(Weather_data []);
void lastBits(Weather_data []);
int main()
{
        Weather_data array[months];

        getData(array);
        lastBits(array);

        return 0;
```

```
}
void    setAverage(Weather_data array[],int i )
{
        array[i].avg_temp=(array[i].high_temp+array[i].low_temp)/2;
}
 double arrayAverage(Weather_data array [], string choice)
{
        double average = 0;
        if(choice == "temp")
        {


                for(int i = 0; i < months; i++)
                        average += array[i].avg_temp;


                return (average / months);
        }



        if(choice == "rain")
        {

                for(int i = 0; i < months; i++)
```

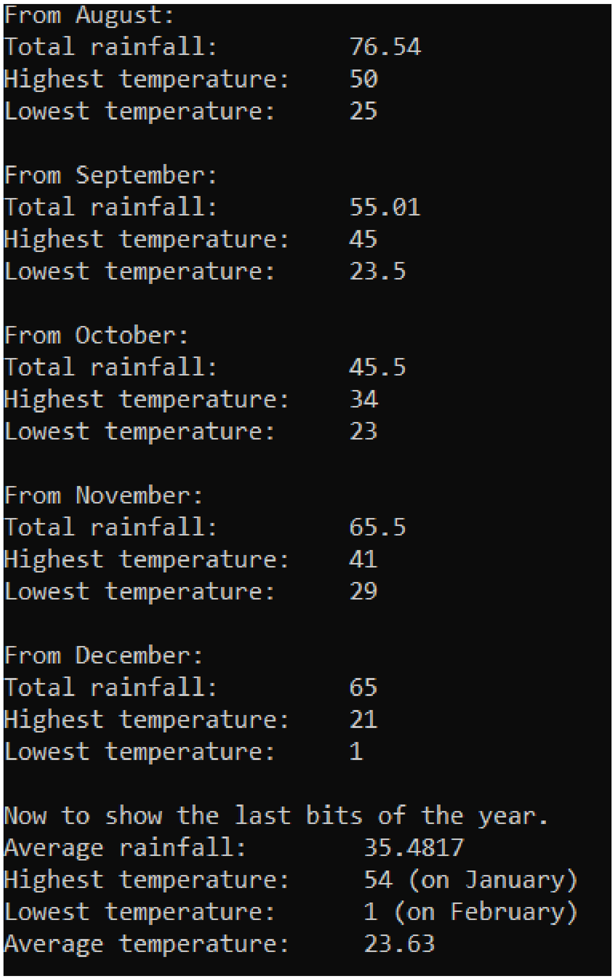
```
            average += array[i].total_rainfall;


        return (average / months);
    }
}


void max_min_temp(Weather_data array [], short & max_pos, short & min_pos)
{

    double min = array[0].low_temp, max = array[0].high_temp;
    min_pos = 0;
    max_pos = 0;


    for(int i = 1; i < months; i++)
    {

        if(min > array[i].low_temp)
        {
            min = array[i].low_temp;
            min_pos = i;
        }
```

```
                if(max < array[i].high_temp)
                {
                        max = array[i].high_temp;
                        max_pos = i;
                }
        }
}


void getData(Weather_data array[])
{
        cout << "Let's do some weather statistics. " << endl;

        cout << "We'll do the total rainfall plus "<< endl;
        cout << "highest and lowest temperatures" << endl;
        cout << "according to months ranging from -100 to 140 degrees "<< endl;
        cout <<         "Fahrenheit." << endl;

        for(int i = 0; i < months; i++)
        {

                cout << "From " <<  MONTHS[i] << ": " <<  endl;
                cout << "Total rainfall: \t";

                cin >> array[i].total_rainfall;


                while(array[i].total_rainfall < 0)
                {
                        cout << endl << "Please enter something that isn't negative. ";

                        cout << "Total rainfall: \t";

                        cin >> array[i].total_rainfall;
                }

                cout << "Highest temperature: \t";

                cin >> array[i].high_temp;


                while((array[i].high_temp < -100) or (array[i].high_temp > 140))
                {
                        cout << endl << "Input a temperature " << endl << "ranging from -100 to 140 degrees Fahrenheit. "<< endl;
                        cout << "Highest temperature: \t";

                        cin >> array[i].high_temp;
                }

                cout << "Lowest temperature: \t";

                cin >> array[i].low_temp;


                while((array[i].low_temp < -100) or (array[i].low_temp > 140)
                       or (array[i].low_temp > array[i].high_temp))
                {
                        cout << "Either you need to input a temperature " << endl <<
"ranging from -100 to 140 degrees " << endl << "Fahrenheit or your lowest is
bigger than the highest. " << endl;

            cout << "Lowest temperature: \t";

            cin >> array[i].low_temp;
        }


        setAverage(array, i);
        cout << endl;
    }
}


void lastBits(Weather_data array[])
{
    short max_pos, min_pos;

    max_min_temp(array, max_pos, min_pos);

    cout << "Now to show the last bits of the year. " <<  endl;

    cout << "Average rainfall: \t " << arrayAverage(array, "rain") << endl
         << "Highest temperature: \t " << array[max_pos].high_temp << " (on " << MONTHS[max_pos] << ")" << endl;
    cout<< "Lowest temperature: \t " << array[min_pos].low_temp << " (on " << MONTHS[min_pos] << ")" << endl << "Average temperature: \t " << arrayAverage(array, "temp") << endl;
}
```

Output:



```
Let's do some weather statistics.
We'll do the total rainfall plus
highest and lowest temperatures
according to months ranging from -100
Fahrenheit.
From January:
Total rainfall:         23
Highest temperature:    54
Lowest temperature:     12

From February:
Total rainfall:         20
Highest temperature:    8
Lowest temperature:     1

From March:
Total rainfall:         10
Highest temperature:    7
Lowest temperature:     1

From April:
Total rainfall:         5
Highest temperature:    34
Lowest temperature:     9

From May:
Total rainfall:         21.1
Highest temperature:    43.2
Lowest temperature:     9.0

From June:
Total rainfall:         19.01
Highest temperature:    37
Lowest temperature:     17

From July:
Total rainfall:         20.12
Highest temperature:    23.32
Lowest temperature:     19.1

From August:
Total rainfall:         76.54
Highest temperature:    50
Lowest temperature:     25

From September:
Total rainfall:         55.01
Highest temperature:    45
Lowest temperature:     23.5
```



```
From August:
Total rainfall:         76.54
Highest temperature:    50
Lowest temperature:     25

From September:
Total rainfall:         55.01
Highest temperature:    45
Lowest temperature:     23.5

From October:
Total rainfall:         45.5
Highest temperature:    34
Lowest temperature:     23

From November:
Total rainfall:         65.5
Highest temperature:    41
Lowest temperature:     29

From December:
Total rainfall:         65
Highest temperature:    21
Lowest temperature:     1

Now to show the last bits of the year.
Average rainfall:        35.4817
Highest temperature:     54 (on January)
Lowest temperature:      1 (on February)
Average temperature:     23.63
```

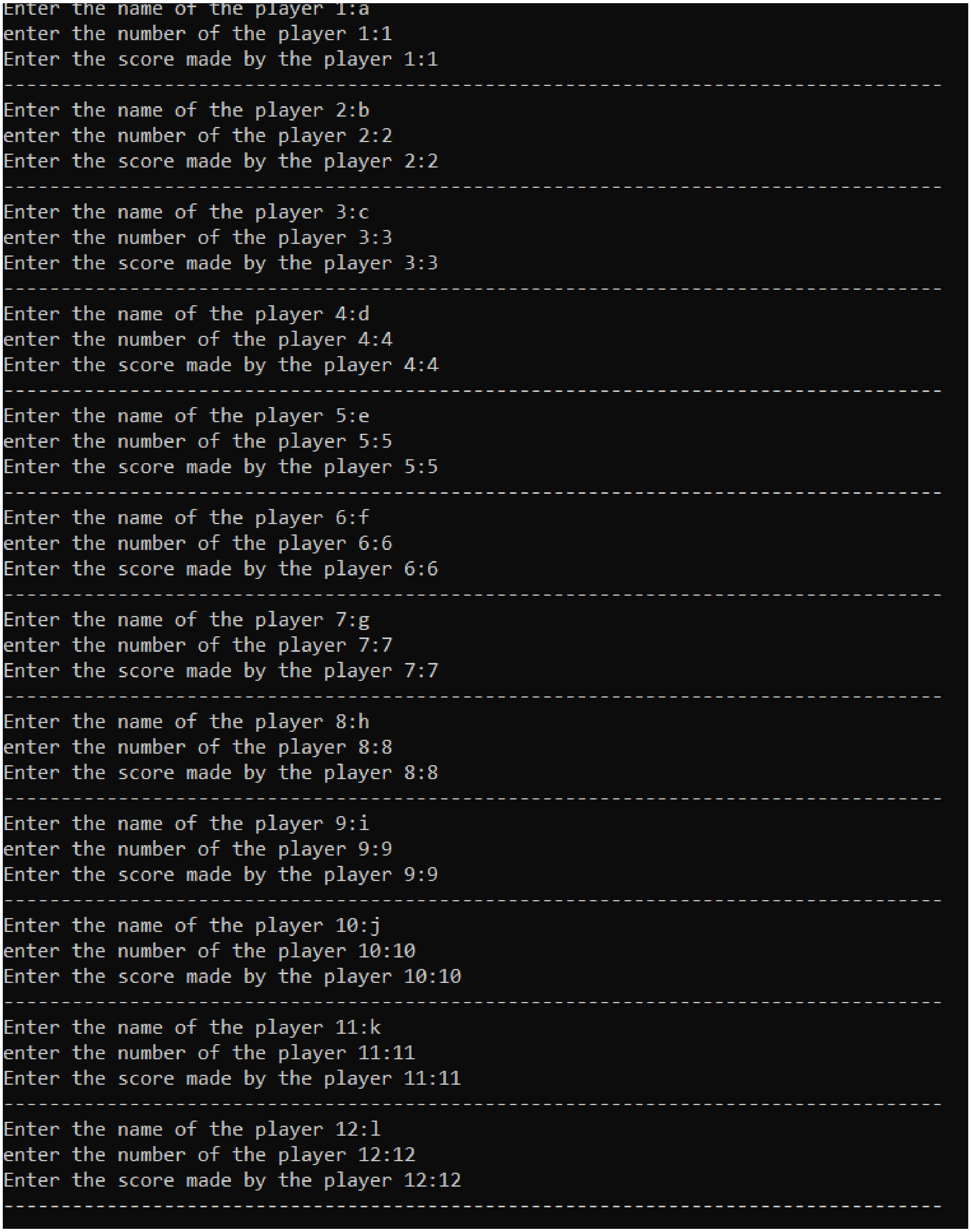
Programme:6

```
#include<iostream>

using namespace std;

struct players

{

        string Name="";

   int Number=0;

  int Scored_by_Player=0;
};
void input_info(players arr[], int i);
void diplay_info(players arr[], int j);
void cal_score(players arr[], int j);
int main()
{
	players arr[12];
	input_info(arr,12);
	diplay_info(arr,12);
	cal_score(arr, 12);
}
void input_info(players arr[],int j)
{
	for (int i = 0; i < j; i++)
	{
		cout << "Enter the name of the player " << i + 1 << ":";
		cin >> arr[i].Name;
		cout << "enter the number of the player " << i + 1 << ":";
		cin >> arr[i].Number;
		cout << "Enter the score made by the player " << i + 1 << ":";
		cin >> arr[i].Scored_by_Player;
		cout << "------------------------------------------------------------------------------
--" << endl;
	}
}
```

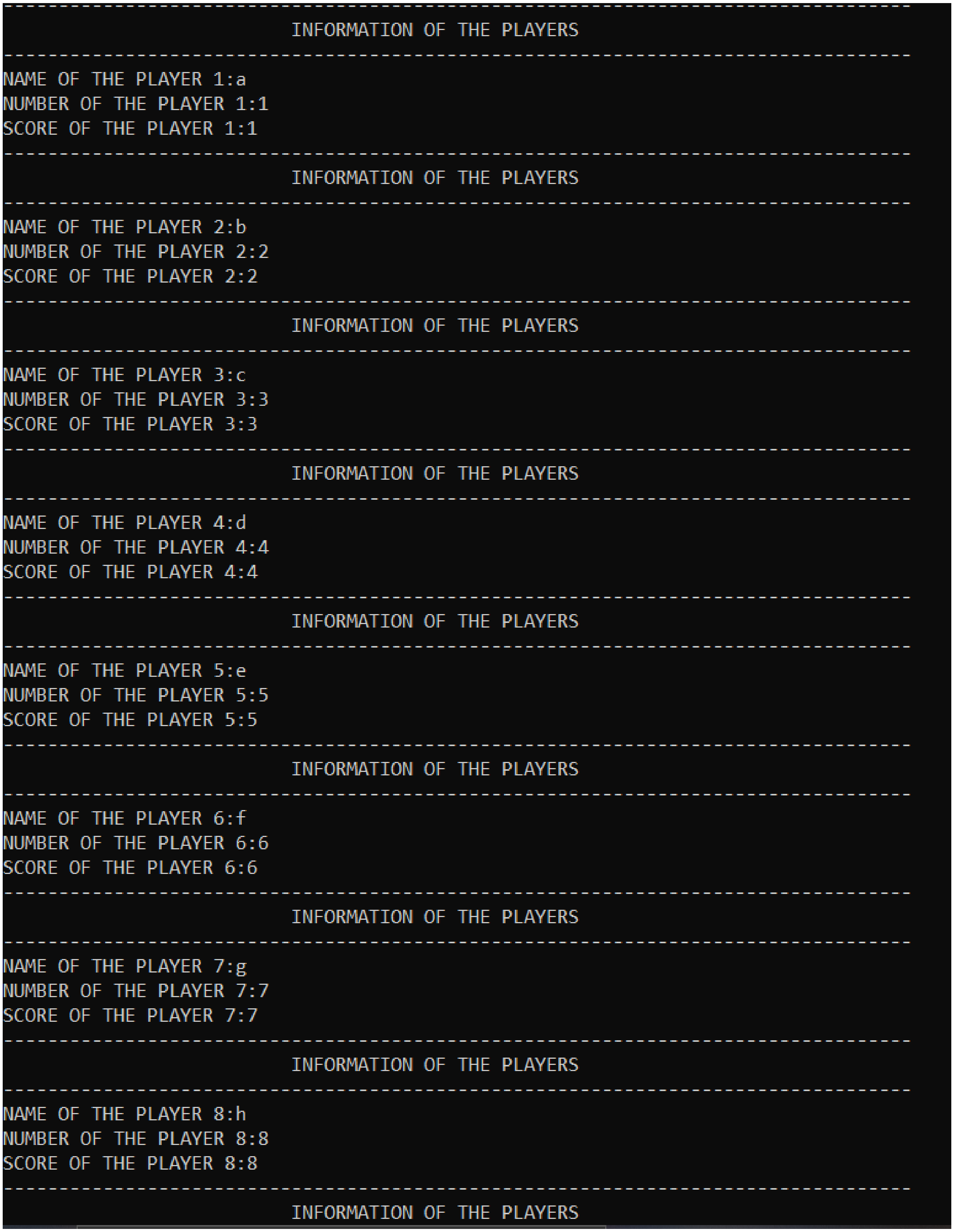
```
void diplay_info(players arr[],int j)
{
        for (int i = 0; i < j; i++)
        {
                cout << "-----------------------------------------------------------------------------
--" << endl;
                cout << "                    INFORMATION OF THE PLAYERS
" << endl;
                cout << "-----------------------------------------------------------------------------
--" << endl;
                cout << "NAME OF THE PLAYER " << i + 1 << ":" << arr[i].Name <<
endl;
                cout << "NUMBER OF THE PLAYER " << i + 1 << ":" << arr[i].Number
<< endl;
                cout << "SCORE OF THE PLAYER " << i + 1 << ":" <<
arr[i].Scored_by_Player << endl;
        }
}
void cal_score(players arr[], int j)
{
        int sum = 0;
        for (int i = 0; i < j; i++)
        {
                sum= sum + arr[i].Scored_by_Player;
        }
```

```
	cout << "--------------------------------------------------------------------------------" << endl;
	cout << "TOTAL SCORES OF ALL THE PLYAERS IS:" << sum << endl;
	cout << "--------------------------------------------------------------------------------" << endl;
}
```

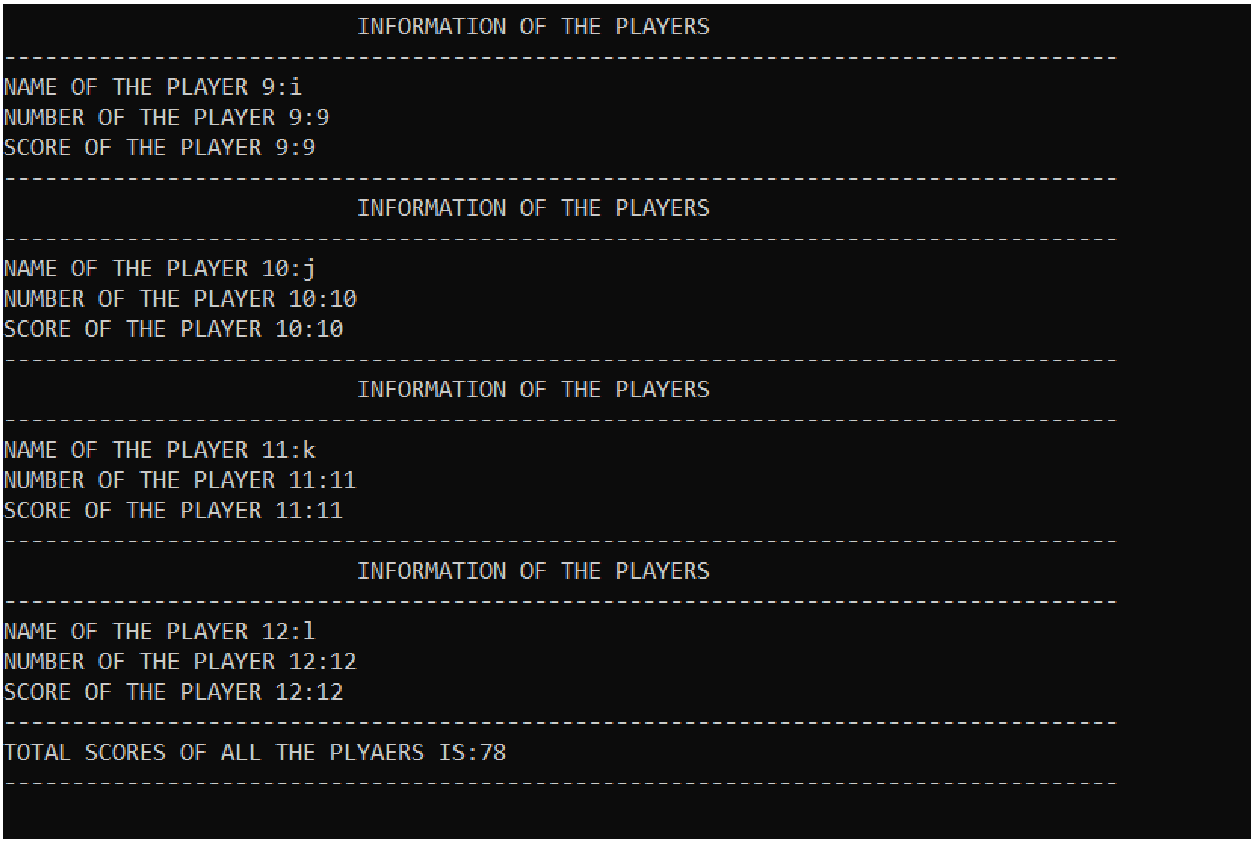
<u>Output</u>:



```
Enter the name of the player 1:a
enter the number of the player 1:1
Enter the score made by the player 1:1
----------------------------------------------------------------------------------
Enter the name of the player 2:b
enter the number of the player 2:2
Enter the score made by the player 2:2
----------------------------------------------------------------------------------
Enter the name of the player 3:c
enter the number of the player 3:3
Enter the score made by the player 3:3
----------------------------------------------------------------------------------
Enter the name of the player 4:d
enter the number of the player 4:4
Enter the score made by the player 4:4
----------------------------------------------------------------------------------
Enter the name of the player 5:e
enter the number of the player 5:5
Enter the score made by the player 5:5
----------------------------------------------------------------------------------
Enter the name of the player 6:f
enter the number of the player 6:6
Enter the score made by the player 6:6
----------------------------------------------------------------------------------
Enter the name of the player 7:g
enter the number of the player 7:7
Enter the score made by the player 7:7
----------------------------------------------------------------------------------
Enter the name of the player 8:h
enter the number of the player 8:8
Enter the score made by the player 8:8
----------------------------------------------------------------------------------
Enter the name of the player 9:i
enter the number of the player 9:9
Enter the score made by the player 9:9
----------------------------------------------------------------------------------
Enter the name of the player 10:j
enter the number of the player 10:10
Enter the score made by the player 10:10
----------------------------------------------------------------------------------
Enter the name of the player 11:k
enter the number of the player 11:11
Enter the score made by the player 11:11
----------------------------------------------------------------------------------
Enter the name of the player 12:l
enter the number of the player 12:12
Enter the score made by the player 12:12
----------------------------------------------------------------------------------
```



```
----------------------------------------------------------------------------------
                          INFORMATION OF THE PLAYERS
----------------------------------------------------------------------------------
NAME OF THE PLAYER 1:a
NUMBER OF THE PLAYER 1:1
SCORE OF THE PLAYER 1:1
----------------------------------------------------------------------------------
                          INFORMATION OF THE PLAYERS
----------------------------------------------------------------------------------
NAME OF THE PLAYER 2:b
NUMBER OF THE PLAYER 2:2
SCORE OF THE PLAYER 2:2
----------------------------------------------------------------------------------
                          INFORMATION OF THE PLAYERS
----------------------------------------------------------------------------------
NAME OF THE PLAYER 3:c
NUMBER OF THE PLAYER 3:3
SCORE OF THE PLAYER 3:3
----------------------------------------------------------------------------------
                          INFORMATION OF THE PLAYERS
----------------------------------------------------------------------------------
NAME OF THE PLAYER 4:d
NUMBER OF THE PLAYER 4:4
SCORE OF THE PLAYER 4:4
----------------------------------------------------------------------------------
                          INFORMATION OF THE PLAYERS
----------------------------------------------------------------------------------
NAME OF THE PLAYER 5:e
NUMBER OF THE PLAYER 5:5
SCORE OF THE PLAYER 5:5
----------------------------------------------------------------------------------
                          INFORMATION OF THE PLAYERS
----------------------------------------------------------------------------------
NAME OF THE PLAYER 6:f
NUMBER OF THE PLAYER 6:6
SCORE OF THE PLAYER 6:6
----------------------------------------------------------------------------------
                          INFORMATION OF THE PLAYERS
----------------------------------------------------------------------------------
NAME OF THE PLAYER 7:g
NUMBER OF THE PLAYER 7:7
SCORE OF THE PLAYER 7:7
----------------------------------------------------------------------------------
                          INFORMATION OF THE PLAYERS
----------------------------------------------------------------------------------
NAME OF THE PLAYER 8:h
NUMBER OF THE PLAYER 8:8
SCORE OF THE PLAYER 8:8
----------------------------------------------------------------------------------
                          INFORMATION OF THE PLAYERS
```



```
                          INFORMATION OF THE PLAYERS
----------------------------------------------------------------------------------
NAME OF THE PLAYER 9:i
NUMBER OF THE PLAYER 9:9
SCORE OF THE PLAYER 9:9
----------------------------------------------------------------------------------
                          INFORMATION OF THE PLAYERS
----------------------------------------------------------------------------------
NAME OF THE PLAYER 10:j
NUMBER OF THE PLAYER 10:10
SCORE OF THE PLAYER 10:10
----------------------------------------------------------------------------------
                          INFORMATION OF THE PLAYERS
----------------------------------------------------------------------------------
NAME OF THE PLAYER 11:k
NUMBER OF THE PLAYER 11:11
SCORE OF THE PLAYER 11:11
----------------------------------------------------------------------------------
                          INFORMATION OF THE PLAYERS
----------------------------------------------------------------------------------
NAME OF THE PLAYER 12:l
NUMBER OF THE PLAYER 12:12
SCORE OF THE PLAYER 12:12
----------------------------------------------------------------------------------
TOTAL SCORES OF ALL THE PLYAERS IS:78
----------------------------------------------------------------------------------
```

Programme: 7

```
#include<iostream>

using namespace std;

struct  customer

{

                    string  Name;

                    string  Address;

                    string City, State;

                    int ZIP=0;

                    int Tel_Num=0;

                    float Account_Balance=0;
```

```
            string  Date_of_Last_Payment;
};
void input_info(customer arr[], int j);
void display_info(customer arr[], int j);
void edit_info(customer arr[], int j, string name);
int main()
{
            int op;
            customer x[20];
            menu:
            cout << "---------------------------------------------------------------
-" << endl;
            cout << "                         MENU                         " << endl;
            cout << "---------------------------------------------------------------
-" << endl;
            cout << "Enter 1 to input the data of the customer" << endl;
            cout << "Enter 2 to edit data of the customer" << endl;
            cout << "Enter 3 to display the data of customer " << endl;
            cin >> op;
            cout << "---------------------------------------------------------------
-" << endl;
            if (op == 1)
            {
             input_info(x, 20);
             int back;
```

```
 cout << "                              Enter 0 to go back to the menu:";
 cin >> back;
 if (back == 0)
 {
         goto menu;
 }
}
if (op == 2)
{
 string a;
 cout << "Enter any name of the customer:";
 cin >> a;
 edit_info(x, 20, a);
 int back;
 cout << "                              Enter 0 to go back to the menu:";
 cin >> back;
 if (back == 0)
 {
         goto menu;
 }
}
if (op == 3)
{
 display_info(x, 20);
```

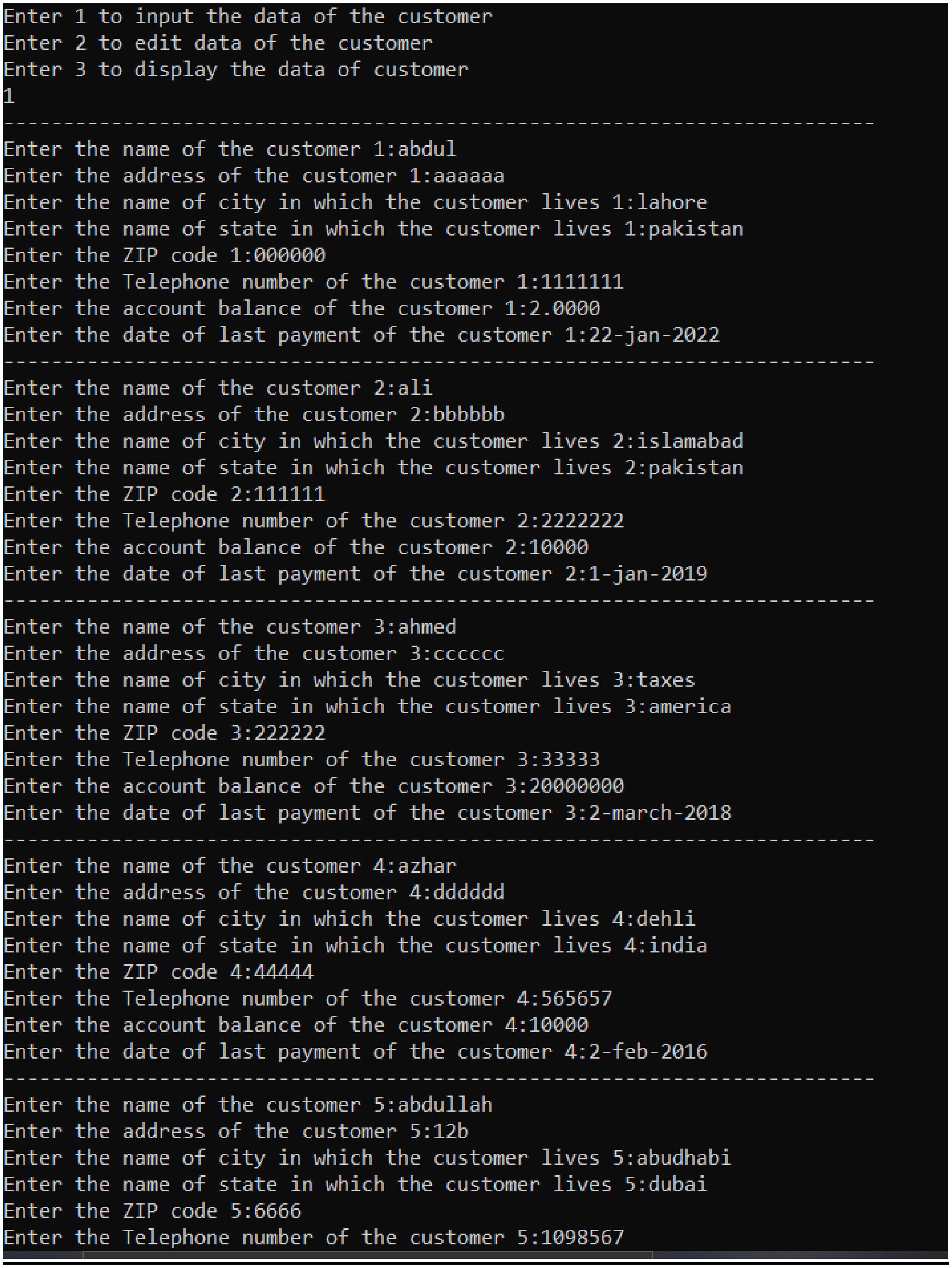
```
            int back;
            cout << "                            Enter 0 to go back to the menu:";
            cin >> back;
            if (back == 0)
            {
                goto menu;
            }
           }
}
void input_info(customer arr[], int j)
{
           for (int i = 0; i < j; i++)
           {
            cout << "Enter the name of the customer " << i + 1 << ":";
            cin >> arr[i].Name;
            cout << "Enter the address of the customer " << i + 1 << ":";
            cin >> arr[i].Address;
            cout << "Enter the name of city in which the customer lives "
<< i + 1 << ":";
            cin >> arr[i].City;
            cout << "Enter the name of state in which the customer lives "
<< i + 1 << ":";
            cin >> arr[i].State;
            cout << "Enter the ZIP code " << i + 1 << ":";
            cin >> arr[i].ZIP;
```

```
                    cout << "Enter the Telephone number of the customer " << i +
1 << ":";
                    cin >> arr[i].Tel_Num;
                    cout << "Enter the account balance of the customer " << i + 1
<< ":";
                    cin >> arr[i].Account_Balance;
                    cout << "Enter the date of last payment of the customer " << i
+ 1 << ":";
                    cin >> arr[i].Date_of_Last_Payment;
                    cout << "--------------------------------------------------------------------
-" << endl;
                   }
}
void edit_info(customer arr[],int j, string name)
{
                   for (int i = 0; i < j; i++)
                   {
                    if (arr[i].Name == name)
                    {
                           cout << "Enter the address of the customer:";
                           cin >> arr[i].Address;
                           cout << "Enter the name of city in which the customer
lives:";
                           cin >> arr[i].City;
                           cout << "Enter the name of state in which the customer
lives:";
```

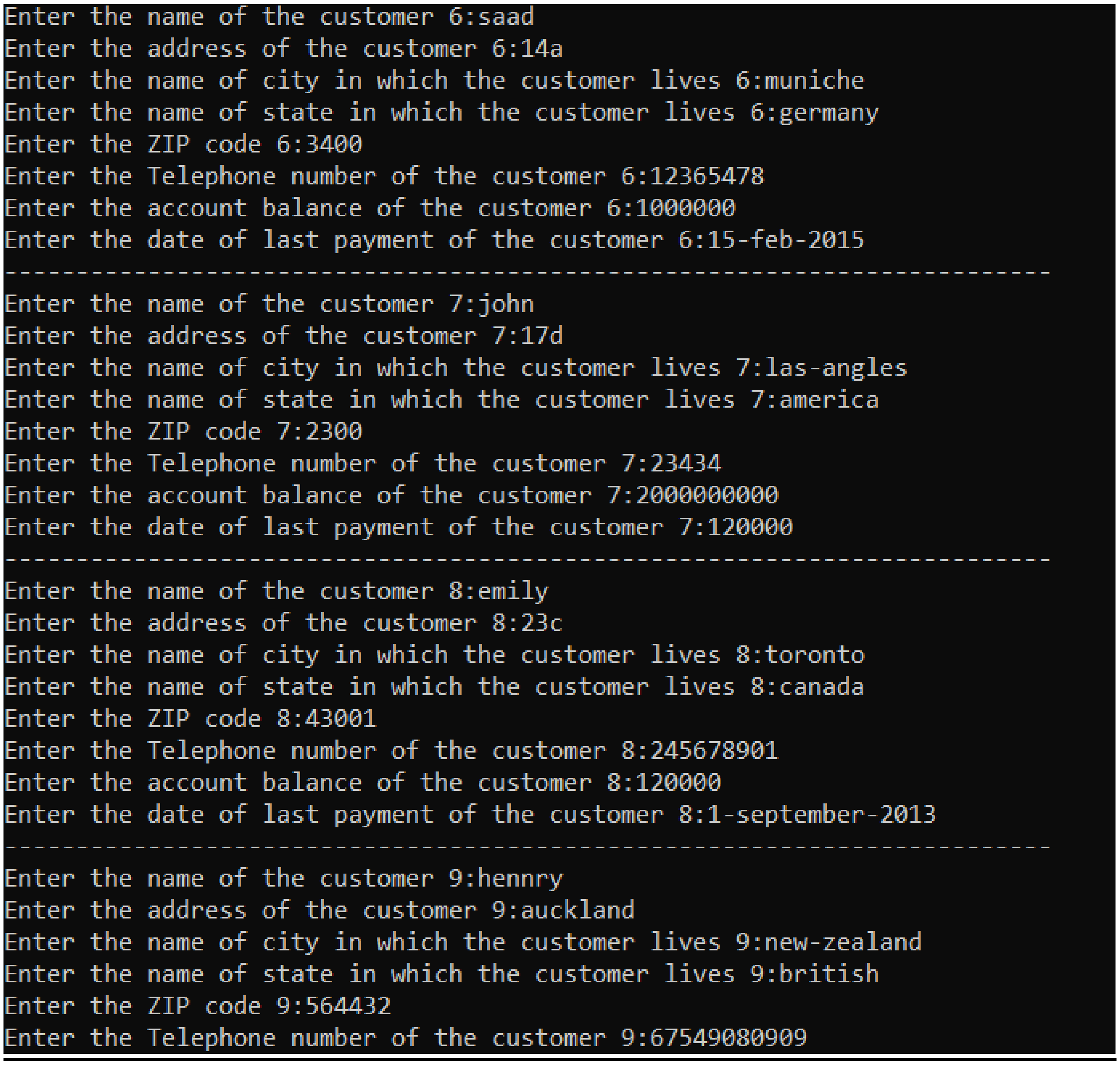
```
            cin >> arr[i].State;
            cout << "Enter the ZIP code:";
            cin >> arr[i].ZIP;
            cout << "Enter the Telephone number of the customer:";
            cin >> arr[i].Tel_Num;
            cout << "Enter the account balance of the customer:";
            cin >> arr[i].Account_Balance;
            cout << "Enter the date of last payment of the
customer:";
            cin >> arr[i].Date_of_Last_Payment;
         }
        }
}
void display_info(customer arr[], int j)
{
        for (int i = 0; i < j; i++)
        {
         cout << "----------------------------------------------------------------------
-" << endl;
         cout << "                  INFORMATION OF " << i + 1 <<" CUSTOMER
"<< endl;
         cout << "----------------------------------------------------------------------
-" << endl;
         cout << "NAME:" << arr[i].Name << endl;
         cout << "ADSRESS:" << arr[i].Address << endl;
         cout << "CITY:" << arr[i].City << endl;
```

```
                    cout << "STATE:" << arr[i].State << endl;
                    cout << "ZIP CODE" << arr[i].ZIP << endl;
                    cout << "TELEPHONE NUMBER:" << arr[i].Tel_Num << endl;
                    cout << "ACCOUNT BALANCE:" << arr[i].Account_Balance <<
endl;
                    cout << "DATE OF LAST PAYMENT:" <<
arr[i].Date_of_Last_Payment << endl;
                   }
}
```

Output:



```
Enter 1 to input the data of the customer
Enter 2 to edit data of the customer
Enter 3 to display the data of customer
1
-------------------------------------------------------------------------
Enter the name of the customer 1:abdul
Enter the address of the customer 1:aaaaaa
Enter the name of city in which the customer lives 1:lahore
Enter the name of state in which the customer lives 1:pakistan
Enter the ZIP code 1:000000
Enter the Telephone number of the customer 1:1111111
Enter the account balance of the customer 1:2.0000
Enter the date of last payment of the customer 1:22-jan-2022
-------------------------------------------------------------------------
Enter the name of the customer 2:ali
Enter the address of the customer 2:bbbbbb
Enter the name of city in which the customer lives 2:islamabad
Enter the name of state in which the customer lives 2:pakistan
Enter the ZIP code 2:111111
Enter the Telephone number of the customer 2:2222222
Enter the account balance of the customer 2:10000
Enter the date of last payment of the customer 2:1-jan-2019
-------------------------------------------------------------------------
Enter the name of the customer 3:ahmed
Enter the address of the customer 3:cccccc
Enter the name of city in which the customer lives 3:taxes
Enter the name of state in which the customer lives 3:america
Enter the ZIP code 3:222222
Enter the Telephone number of the customer 3:33333
Enter the account balance of the customer 3:20000000
Enter the date of last payment of the customer 3:2-march-2018
-------------------------------------------------------------------------
Enter the name of the customer 4:azhar
Enter the address of the customer 4:dddddd
Enter the name of city in which the customer lives 4:dehli
Enter the name of state in which the customer lives 4:india
Enter the ZIP code 4:44444
Enter the Telephone number of the customer 4:565657
Enter the account balance of the customer 4:10000
Enter the date of last payment of the customer 4:2-feb-2016
-------------------------------------------------------------------------
Enter the name of the customer 5:abdullah
Enter the address of the customer 5:12b
Enter the name of city in which the customer lives 5:abudhabi
Enter the name of state in which the customer lives 5:dubai
Enter the ZIP code 5:6666
Enter the Telephone number of the customer 5:1098567
```



```
Enter the name of the customer 6:saad
Enter the address of the customer 6:14a
Enter the name of city in which the customer lives 6:muniche
Enter the name of state in which the customer lives 6:germany
Enter the ZIP code 6:3400
Enter the Telephone number of the customer 6:12365478
Enter the account balance of the customer 6:1000000
Enter the date of last payment of the customer 6:15-feb-2015
-------------------------------------------------------------------------
Enter the name of the customer 7:john
Enter the address of the customer 7:17d
Enter the name of city in which the customer lives 7:las-angles
Enter the name of state in which the customer lives 7:america
Enter the ZIP code 7:2300
Enter the Telephone number of the customer 7:23434
Enter the account balance of the customer 7:2000000000
Enter the date of last payment of the customer 7:120000
-------------------------------------------------------------------------
Enter the name of the customer 8:emily
Enter the address of the customer 8:23c
Enter the name of city in which the customer lives 8:toronto
Enter the name of state in which the customer lives 8:canada
Enter the ZIP code 8:43001
Enter the Telephone number of the customer 8:245678901
Enter the account balance of the customer 8:120000
Enter the date of last payment of the customer 8:1-september-2013
-------------------------------------------------------------------------
Enter the name of the customer 9:hennry
Enter the address of the customer 9:auckland
Enter the name of city in which the customer lives 9:new-zealand
Enter the name of state in which the customer lives 9:british
Enter the ZIP code 9:564432
Enter the Telephone number of the customer 9:67549080909
```

Programme:8

```
#include<iostream>

using namespace std;

struct  customer

{

                    string  Name;

                    string  Address;

                    string City, State;
```

```
                        int ZIP=0;
                        int Tel_Num=0;
                        float Account_Balance=0;
                        string  Date_of_Last_Payment;
};
void input_info(customer arr[], int j);
void display_info(customer arr[], int j);
void edit_info(customer arr[], int j, string name);
void display_updated_info(customer arr[], int j);
void search_info(customer arr[], int j, string name);
int main()
{
                        int op;
                        customer x[2];
                        menu:
                        cout << "------------------------------------------------------------------
-" << endl;
                        cout << "                            MENU                           " << endl;
                        cout << "------------------------------------------------------------------
-" << endl;
                        cout << "Enter 1 to input the data of the customer" << endl;
                        cout << "Enter 2 to display data of the customer" << endl;
                        cout << "Enter 3 to edit the data of customer " << endl;
                        cout << "Enter 4 to display updated data of the customer" <<
endl;
```

```
cout << "Enter 5 to search the data of customer " << endl;
cin >> op;
cout << "--------------------------------------------------------------------------------" << endl;
if (op == 1)
{
 input_info(x, 2);
 int back;
 cout << "                                   Enter 0 to go back to the menu:";
 cin >> back;
 if (back == 0)
 {
         goto menu;
 }
}
if (op == 2)
{
 display_info(x, 2);
 int back;
 cout << "                                   Enter 0 to go back to the menu:";
 cin >> back;
 if (back == 0)
 {
         goto menu;
 }
```

```
}
if (op == 3)
{
 string a;
 cout << "Enter name of the customer of which you want to updated data: ";
 cin >> a;
 edit_info(x, 2, a);
 int back;
 cout << "                              Enter 0 to go back to the menu:";
 cin >> back;
 if (back == 0)
 {
         goto menu;
 }
}
if (op == 4)
{
 display_updated_info(x, 2);
 int back;
 cout << "                              Enter 0 to go back to the menu:";
 cin >> back;
 if (back == 0)
 {
         goto menu;
         }
        }
        if (op == 5)
        {
         string a;
         cout << "Enter name of the customer by which you want to
search: ";
         cin >> a;
         search_info(x, 2, a);
         int back;
         cout << "                    Enter 0 to go back to the menu:";
         cin >> back;
         if (back == 0)
         {
             goto menu;
         }
        }
}
void input_info(customer arr[], int j)
{
        for (int i = 0; i < j; i++)
        {
         cout << "Enter the name of the customer " << i + 1 << ":";
         cin >> arr[i].Name;
         cout << "Enter the address of the customer " << i + 1 << ":";
```

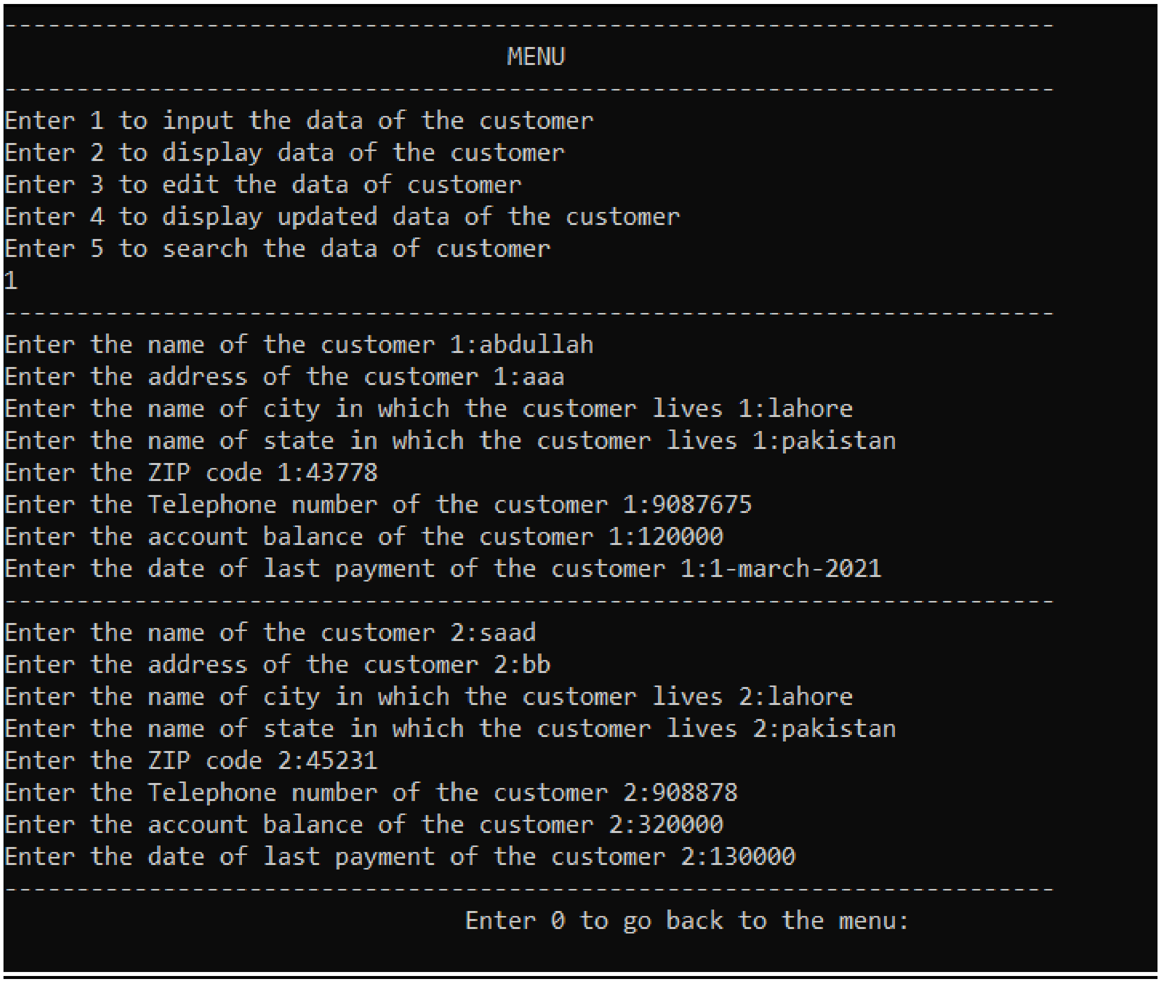
```
                        cin >> arr[i].Address;
                        cout << "Enter the name of city in which the customer lives "
<< i + 1 << ":";
                        cin >> arr[i].City;
                        cout << "Enter the name of state in which the customer lives "
<< i + 1 << ":";
                        cin >> arr[i].State;
                        cout << "Enter the ZIP code " << i + 1 << ":";
                        cin >> arr[i].ZIP;
                        cout << "Enter the Telephone number of the customer " << i +
1 << ":";
                        cin >> arr[i].Tel_Num;
                        cout << "Enter the account balance of the customer " << i + 1
<< ":";
                        cin >> arr[i].Account_Balance;
                        cout << "Enter the date of last payment of the customer " << i
+ 1 << ":";
                        cin >> arr[i].Date_of_Last_Payment;
                        cout << "----------------------------------------------------------------------------------
-" << endl;
                        }
}
void edit_info(customer arr[],int j, string name)
{
                        for (int i = 0; i < j; i++)
                        {
```

```
            if (arr[i].Name == name)
            {
                cout << "Enter the address of the customer:";
                cin >> arr[i].Address;
                cout << "Enter the name of city in which the customer
lives:";
                cin >> arr[i].City;
                cout << "Enter the name of state in which the customer
lives:";
                cin >> arr[i].State;
                cout << "Enter the ZIP code:";
                cin >> arr[i].ZIP;
                cout << "Enter the Telephone number of the customer:";
                cin >> arr[i].Tel_Num;
                cout << "Enter the account balance of the customer:";
                cin >> arr[i].Account_Balance;
                cout << "Enter the date of last payment of the
customer:";
                cin >> arr[i].Date_of_Last_Payment;
            }
            }
}
void display_info(customer arr[], int j)
{
            for (int i = 0; i < j; i++)
```

```
                        {
                         cout << "---------------------------------------------------------------------
-" << endl;
                         cout << "                  INFORMATION OF " << i + 1 <<" CUSTOMER
"<< endl;
                         cout << "---------------------------------------------------------------------
-" << endl;
                         cout << "NAME:" << arr[i].Name << endl;
                         cout << "ADSRESS:" << arr[i].Address << endl;
                         cout << "CITY:" << arr[i].City << endl;
                         cout << "STATE:" << arr[i].State << endl;
                         cout << "ZIP CODE" << arr[i].ZIP << endl;
                         cout << "TELEPHONE NUMBER:" << arr[i].Tel_Num << endl;
                         cout << "ACCOUNT BALANCE:" << arr[i].Account_Balance <<
endl;
                         cout << "DATE OF LAST PAYMENT:" <<
arr[i].Date_of_Last_Payment << endl;
                        }
}
void display_updated_info(customer arr[], int j)
{
                        for (int i = 0; i < j; i++)
                        {
                         cout << "---------------------------------------------------------------------
-" << endl;
```

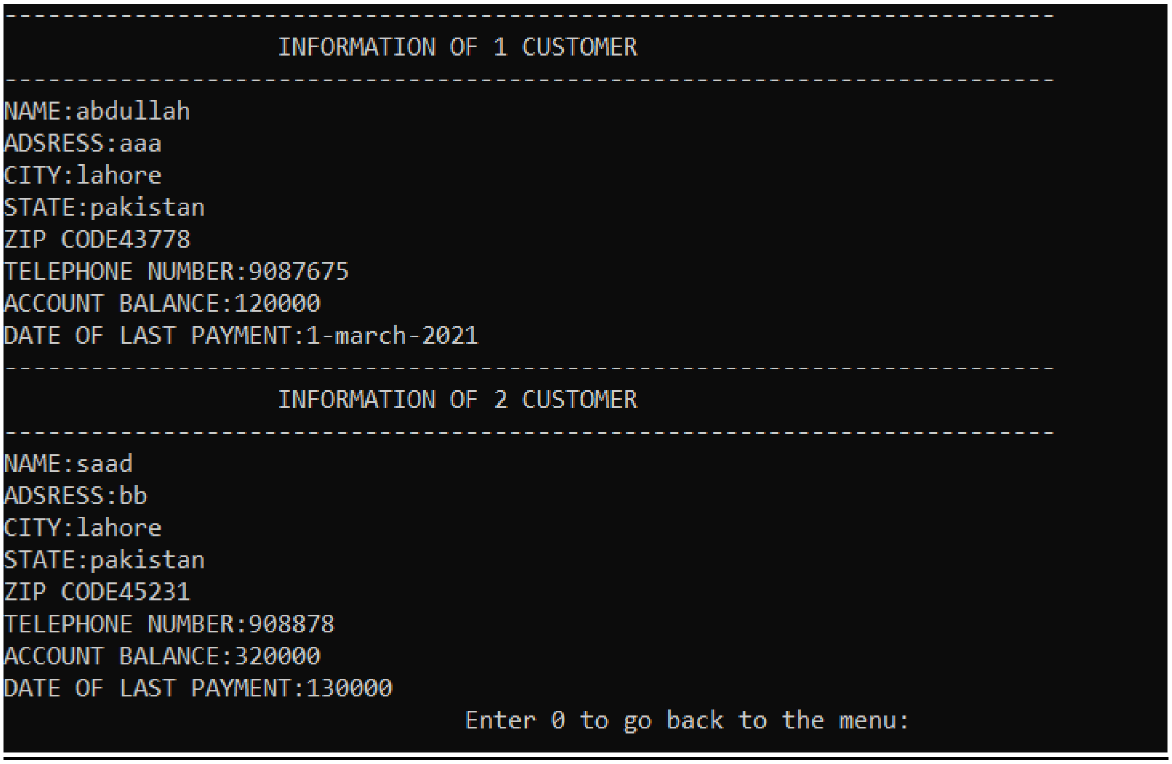
```
        cout << "               UPDATED INFORMATION OF " << i + 1 << "
CUSTOMER  " << endl;
        cout << "----------------------------------------------------------------------
-" << endl;
        cout << "NAME:" << arr[i].Name << endl;
        cout << "ADSRESS:" << arr[i].Address << endl;
        cout << "CITY:" << arr[i].City << endl;
        cout << "STATE:" << arr[i].State << endl;
        cout << "ZIP CODE" << arr[i].ZIP << endl;
        cout << "TELEPHONE NUMBER:" << arr[i].Tel_Num << endl;
        cout << "ACCOUNT BALANCE:" << arr[i].Account_Balance <<
endl;
        cout << "DATE OF LAST PAYMENT:" <<
arr[i].Date_of_Last_Payment << endl;
        }
}
        void search_info(customer arr[],int j, string name)
        {
        cout << "----------------------------------------------------------------------
-" << endl;
        cout << "                 SEARCHED INFORMATION OF CUSTOMER  "
<< endl;
        cout << "----------------------------------------------------------------------
-" << endl;
        for (int i = 0; i < j; i++)
        {
                if (name == arr[i].Name)
                {
                    cout << "NAME:" << arr[i].Name << endl;
                    cout << "ADSRESS:" << arr[i].Address << endl;
                    cout << "CITY:" << arr[i].City << endl;
                    cout << "STATE:" << arr[i].State << endl;
                    cout << "ZIP CODE" << arr[i].ZIP << endl;
                    cout << "TELEPHONE NUMBER:" << arr[i].Tel_Num
<< endl;
                    cout << "ACCOUNT BALANCE:" <<
arr[i].Account_Balance << endl;
                    cout << "DATE OF LAST PAYMENT:" <<
arr[i].Date_of_Last_Payment << endl;
                }
                else
                {
                    cout << "NO MATCH FOUND" << endl;
                }
             }
            }
```

<u>Output:</u>



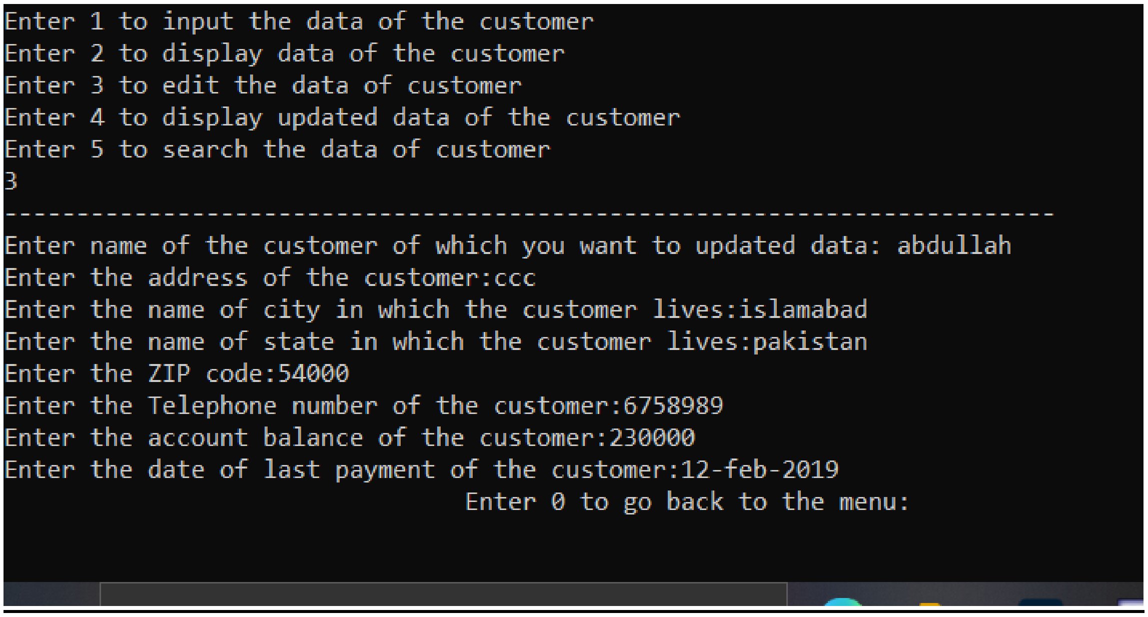
```
--------------------------------------------------------------------------
                                   MENU
--------------------------------------------------------------------------
Enter 1 to input the data of the customer
Enter 2 to display data of the customer
Enter 3 to edit the data of customer
Enter 4 to display updated data of the customer
Enter 5 to search the data of customer
1
--------------------------------------------------------------------------
Enter the name of the customer 1:abdullah
Enter the address of the customer 1:aaa
Enter the name of city in which the customer lives 1:lahore
Enter the name of state in which the customer lives 1:pakistan
Enter the ZIP code 1:43778
Enter the Telephone number of the customer 1:9087675
Enter the account balance of the customer 1:120000
Enter the date of last payment of the customer 1:1-march-2021
--------------------------------------------------------------------------
Enter the name of the customer 2:saad
Enter the address of the customer 2:bb
Enter the name of city in which the customer lives 2:lahore
Enter the name of state in which the customer lives 2:pakistan
Enter the ZIP code 2:45231
Enter the Telephone number of the customer 2:908878
Enter the account balance of the customer 2:320000
Enter the date of last payment of the customer 2:130000
--------------------------------------------------------------------------
                                Enter 0 to go back to the menu:
```

Display the data of programme:



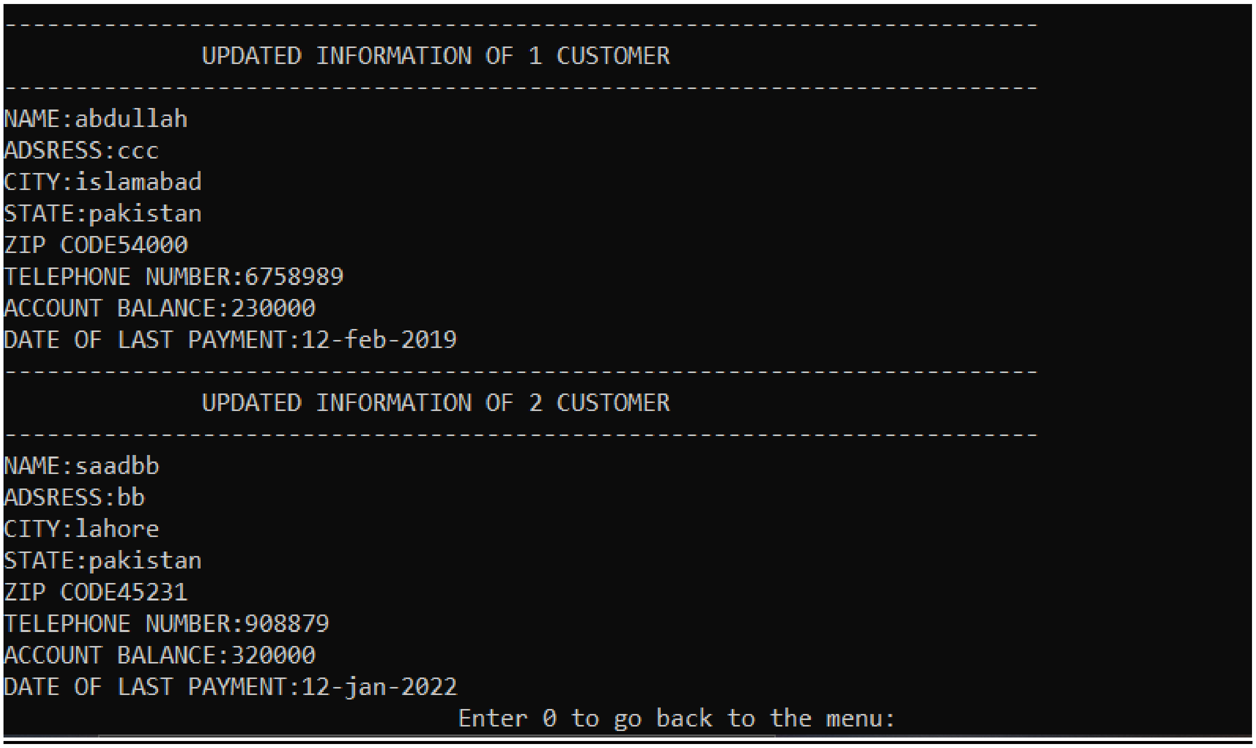
```
------------------------------------------------------------------------
                   INFORMATION OF 1 CUSTOMER
------------------------------------------------------------------------
NAME:abdullah
ADSRESS:aaa
CITY:lahore
STATE:pakistan
ZIP CODE43778
TELEPHONE NUMBER:9087675
ACCOUNT BALANCE:120000
DATE OF LAST PAYMENT:1-march-2021
------------------------------------------------------------------------
                   INFORMATION OF 2 CUSTOMER
------------------------------------------------------------------------
NAME:saad
ADSRESS:bb
CITY:lahore
STATE:pakistan
ZIP CODE45231
TELEPHONE NUMBER:908878
ACCOUNT BALANCE:320000
DATE OF LAST PAYMENT:130000
                                Enter 0 to go back to the menu:
```

Updating the data:



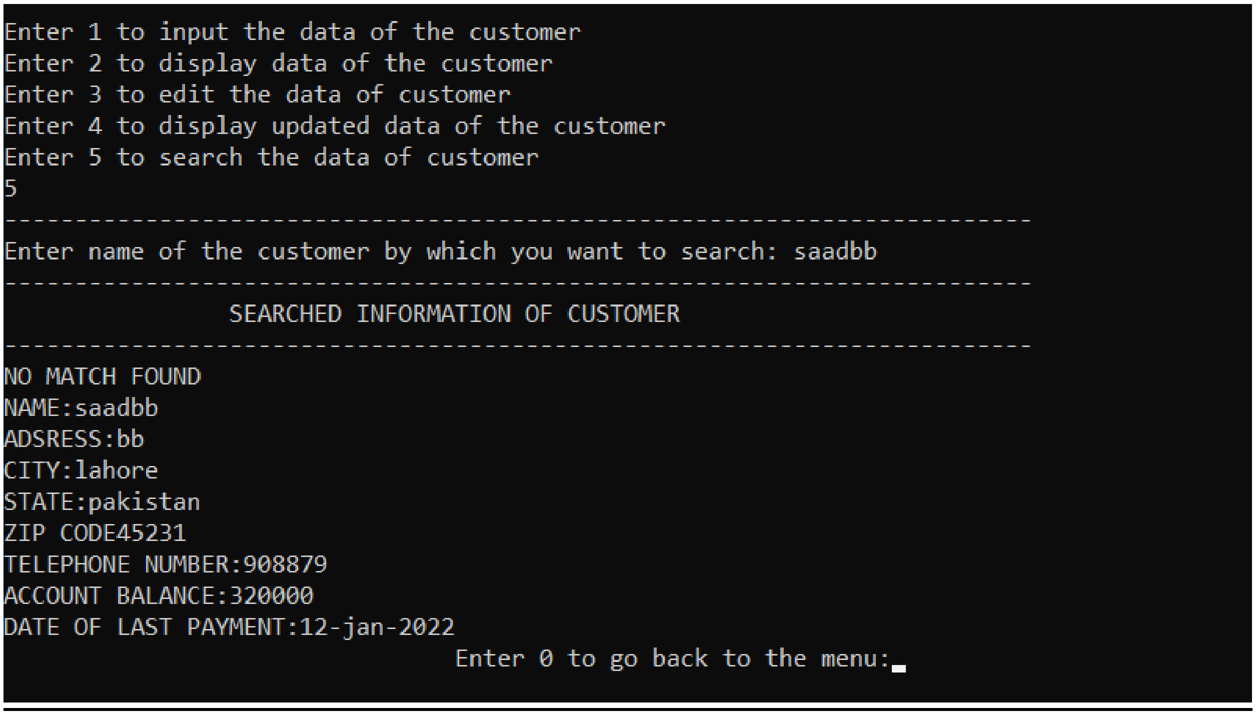
```
Enter 1 to input the data of the customer
Enter 2 to display data of the customer
Enter 3 to edit the data of customer
Enter 4 to display updated data of the customer
Enter 5 to search the data of customer
3
------------------------------------------------------------------------
Enter name of the customer of which you want to updated data: abdullah
Enter the address of the customer:ccc
Enter the name of city in which the customer lives:islamabad
Enter the name of state in which the customer lives:pakistan
Enter the ZIP code:54000
Enter the Telephone number of the customer:6758989
Enter the account balance of the customer:230000
Enter the date of last payment of the customer:12-feb-2019
                                Enter 0 to go back to the menu:
```

Displaying the updated data of customer



```
-------------------------------------------------------------------------
              UPDATED INFORMATION OF 1 CUSTOMER
-------------------------------------------------------------------------
NAME:abdullah
ADSRESS:ccc
CITY:islamabad
STATE:pakistan
ZIP CODE54000
TELEPHONE NUMBER:6758989
ACCOUNT BALANCE:230000
DATE OF LAST PAYMENT:12-feb-2019
-------------------------------------------------------------------------
              UPDATED INFORMATION OF 2 CUSTOMER
-------------------------------------------------------------------------
NAME:saadbb
ADSRESS:bb
CITY:lahore
STATE:pakistan
ZIP CODE45231
TELEPHONE NUMBER:908879
ACCOUNT BALANCE:320000
DATE OF LAST PAYMENT:12-jan-2022
                                Enter 0 to go back to the menu:
```

Searching the customer by name:



```
Enter 1 to input the data of the customer
Enter 2 to display data of the customer
Enter 3 to edit the data of customer
Enter 4 to display updated data of the customer
Enter 5 to search the data of customer
5
-------------------------------------------------------------------------
Enter name of the customer by which you want to search: saadbb
-------------------------------------------------------------------------
                SEARCHED INFORMATION OF CUSTOMER
-------------------------------------------------------------------------
NO MATCH FOUND
NAME:saadbb
ADSRESS:bb
CITY:lahore
STATE:pakistan
ZIP CODE45231
TELEPHONE NUMBER:908879
ACCOUNT BALANCE:320000
DATE OF LAST PAYMENT:12-jan-2022
                                Enter 0 to go back to the menu:
```

Programme: 9

```
#include<iostream>
using namespace std;
struct speaker
{
            string name;
            string tel_num;
            string speaking_topic;
            int fee_requied ;
};
void input_info(speaker arr[], int j);
void edit_info(speaker arr[], int j, string n);
void display_info(speaker arr[], int j);
void display_updated_info(speaker arr[], int j);
int main()
{
             int op;
            speaker x[2];
            menu:
            cout << "-----------------------------------------------------------------------" << endl;
            cout << "                              MENU                              " << endl;
            cout << "-----------------------------------------------------------------------" << endl;
            cout << "Enter 1 to input the data of the speaker" << endl;
            cout << "Enter 2 to display data of the speaker" << endl;
            cout << "Enter 3 to edit the data of speaker " << endl;
            cout << "Enter 4 to display updated data of the speaker" <<
endl;
            cin >> op;
            cout << "--------------------------------------------------------------------
-" << endl;
            if (op == 1)
            {
                input_info(x, 2);
                int back;
                cout << "                     Enter 0 to go back to the
menu:";
                cin >> back;
                if (back == 0)
                {
                    goto menu;
                }
            }
            if (op == 2)
            {
                display_info(x, 2);
                int back;
                cout << "                     Enter 0 to go back to the
menu:";
```

```
                cin >> back;
                if (back == 0)
                {
                    goto menu;
                }
            }
            if (op == 3)
            {
                string a;
                cout << "Enter name of the speaker of which you want
to updated data:";
                cin >> a;
                edit_info(x, 2, a);
                int back;
                cout << "                         Enter 0 to go back to the
menu:";
                cin >> back;
                if (back == 0)
                {
                    goto menu;
                }
            }
            if (op == 4)
            {
                display_updated_info(x, 2);
```

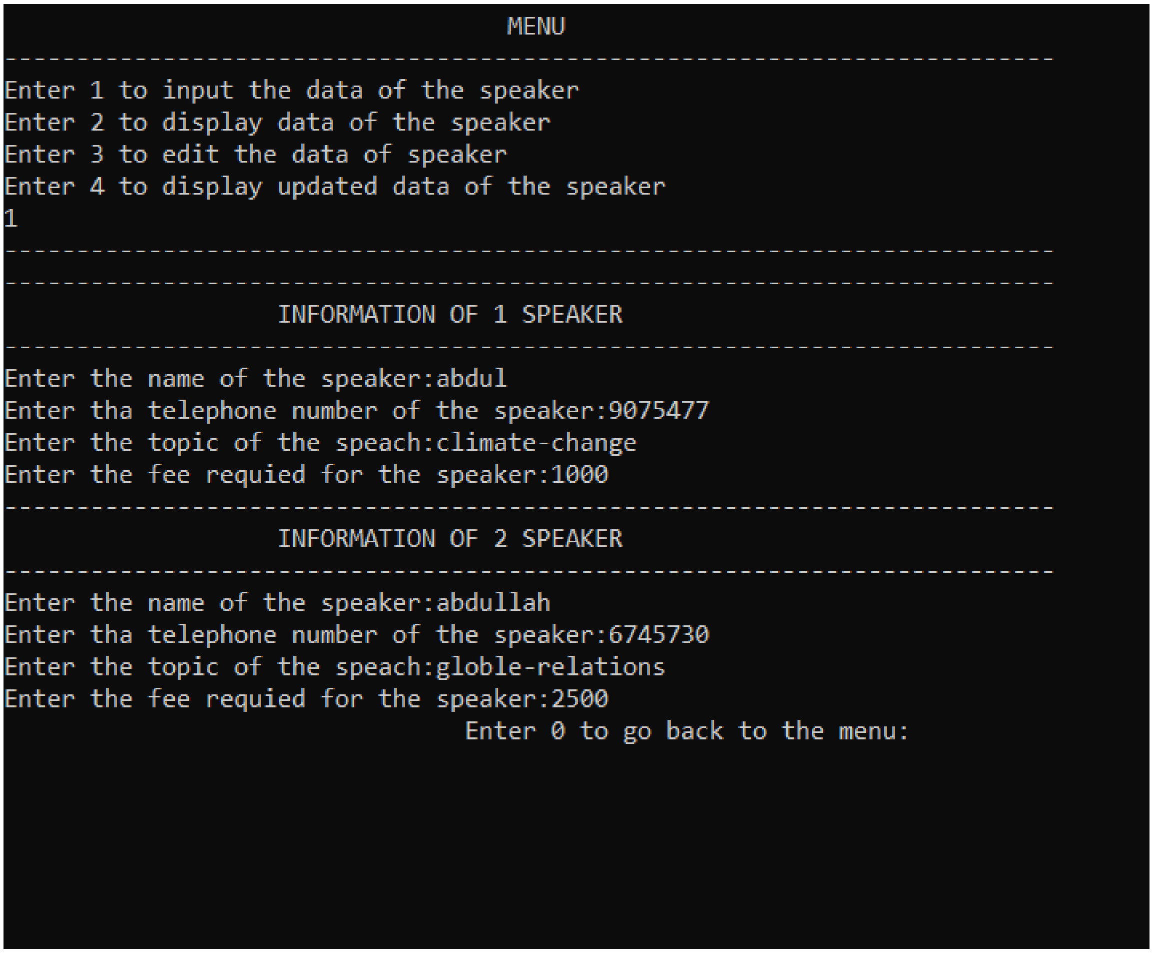
```
                                        int back;
                                        cout << "                            Enter 0 to go back to the
menu:";
                                        cin >> back;
                                        if (back == 0)
                                        {
                                                  goto menu;
                                        }
                              }

}
void input_info(speaker arr[], int j)
{
                             for (int i = 0; i < j; i++)
                             {
                              cout << "----------------------------------------------------------------------
-" << endl;
                              cout << "                 INFORMATION OF " << i + 1 <<"
SPEAKER"<< endl;
                             cout << "----------------------------------------------------------------------
-" << endl;
                              cout << "Enter the name of the speaker:";
                              cin >> arr[i].name;
                              cout << "Enter tha telephone number of the speaker:";
                              cin >> arr[i].tel_num;
                              cout << "Enter the topic of the speach:";
```

```
             cin >> arr[i].speaking_topic;
             cout << "Enter the fee requied for the speaker:";
             cin >> arr[i].fee_requied;
            }
}
void edit_info(speaker arr[], int j,string n)
{
            cout << "----------------------------------------------------------------------
-" << endl;
            cout << "                 UPDATE INFORMATION OF SPEAKER" <<
endl;
            cout << "----------------------------------------------------------------------
-" << endl;
            for (int i = 0; i < j; i++)
            {
             if (arr[i].name == n)
             {
                    cout << "Enter tha telephone number of the speaker:";
                    cin >> arr[i].tel_num;
                    cout << "Enter the topic of the speach:";
                    cin >> arr[i].speaking_topic;
                    cout << "Enter the fee requied for the speaker:";
                    cin >> arr[i].fee_requied;
             }
            }
```

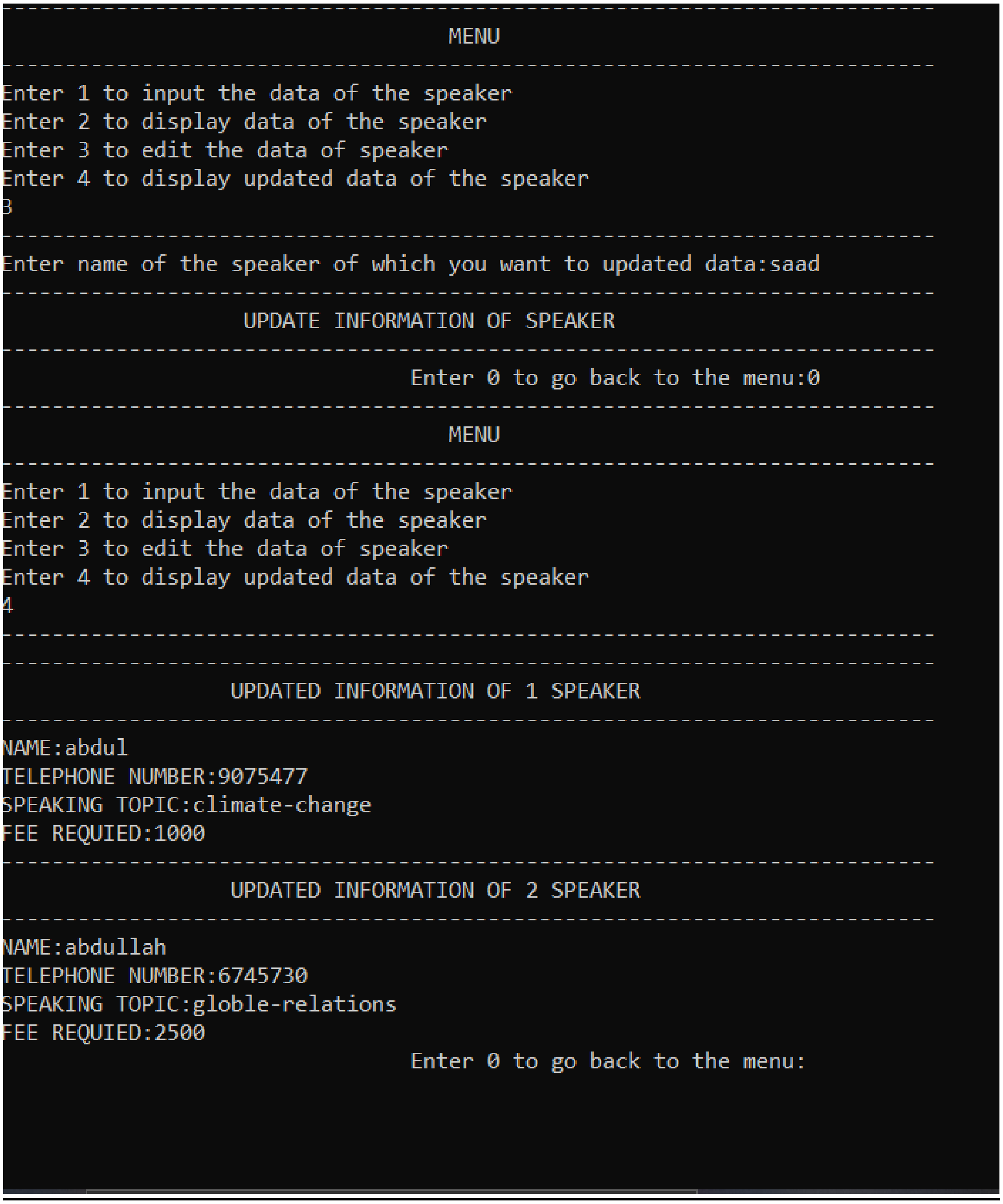
```
}
void display_info(speaker arr[], int j)
{
                for (int i = 0; i < j; i++)
                {
                 cout << "---------------------------------------------------------------------------
-" << endl;
                 cout << "                   INFORMATION OF " << i + 1 << " SPEAKER"
<< endl;
                 cout << "---------------------------------------------------------------------------
-" << endl;
                 cout << "NAME:" << arr[i].name << endl;
                 cout << "TELEPHONE NUMBER:" << arr[i].tel_num << endl;
                 cout << "SPEAKING TOPIC:" << arr[i].speaking_topic << endl;
                 cout << "FEE REQUIED:" << arr[i].fee_requied << endl;
                }
}
void display_updated_info(speaker arr[], int j)
{
                for (int i = 0; i < j; i++)
                {
                 cout << "---------------------------------------------------------------------------
-" << endl;
                 cout << "                  UPDATED INFORMATION OF " << i + 1 << "
SPEAKER" << endl;
```

```
                    cout << "------------------------------------------------------------------------" << endl;
                    cout << "NAME:" << arr[i].name << endl;
                    cout << "TELEPHONE NUMBER:" << arr[i].tel_num << endl;
                    cout << "SPEAKING TOPIC:" << arr[i].speaking_topic << endl;
                    cout << "FEE REQUIED:" << arr[i].fee_requied << endl;
                   }
}
```

Output:



```
                                   MENU
-------------------------------------------------------------------------
Enter 1 to input the data of the speaker
Enter 2 to display data of the speaker
Enter 3 to edit the data of speaker
Enter 4 to display updated data of the speaker
1
-------------------------------------------------------------------------
-------------------------------------------------------------------------
                   INFORMATION OF 1 SPEAKER
-------------------------------------------------------------------------
Enter the name of the speaker:abdul
Enter tha telephone number of the speaker:9075477
Enter the topic of the speach:climate-change
Enter the fee requied for the speaker:1000
-------------------------------------------------------------------------
                   INFORMATION OF 2 SPEAKER
-------------------------------------------------------------------------
Enter the name of the speaker:abdullah
Enter tha telephone number of the speaker:6745730
Enter the topic of the speach:globle-relations
Enter the fee requied for the speaker:2500
                                Enter 0 to go back to the menu:
```



```
------------------------------------------------------------------------
                                  MENU
------------------------------------------------------------------------
Enter 1 to input the data of the speaker
Enter 2 to display data of the speaker
Enter 3 to edit the data of speaker
Enter 4 to display updated data of the speaker
3
------------------------------------------------------------------------
Enter name of the speaker of which you want to updated data:saad
------------------------------------------------------------------------
                  UPDATE INFORMATION OF SPEAKER
------------------------------------------------------------------------
                               Enter 0 to go back to the menu:0
------------------------------------------------------------------------
                                  MENU
------------------------------------------------------------------------
Enter 1 to input the data of the speaker
Enter 2 to display data of the speaker
Enter 3 to edit the data of speaker
Enter 4 to display updated data of the speaker
4
------------------------------------------------------------------------
------------------------------------------------------------------------
                 UPDATED INFORMATION OF 1 SPEAKER
------------------------------------------------------------------------
NAME:abdul
TELEPHONE NUMBER:9075477
SPEAKING TOPIC:climate-change
FEE REQUIED:1000
------------------------------------------------------------------------
                 UPDATED INFORMATION OF 2 SPEAKER
------------------------------------------------------------------------
NAME:abdullah
TELEPHONE NUMBER:6745730
SPEAKING TOPIC:globle-relations
FEE REQUIED:2500
                               Enter 0 to go back to the menu:
```

Programme:10

```
#include<iostream>

using namespace std;

struct speaker
```

```
{
                string name;
                string tel_num;
                string speaking_topic;
                int fee_requied ;
};
void input_info(speaker arr[], int j);
void edit_info(speaker arr[], int j, string n);
void display_info(speaker arr[], int j);
void display_updated_info(speaker arr[], int j);
void search_info(speaker arr[], int j, string name);
int main()
{
                int op;
                speaker x[2];
menu:
                cout << "---------------------------------------------------------------------
-" << endl;
                cout << "                       MENU                       " << endl;
                cout << "---------------------------------------------------------------------
-" << endl;
                cout << "Enter 1 to input the data of the speaker" << endl;
                cout << "Enter 2 to display data of the speaker" << endl;
                cout << "Enter 3 to edit the data of speaker " << endl;
```

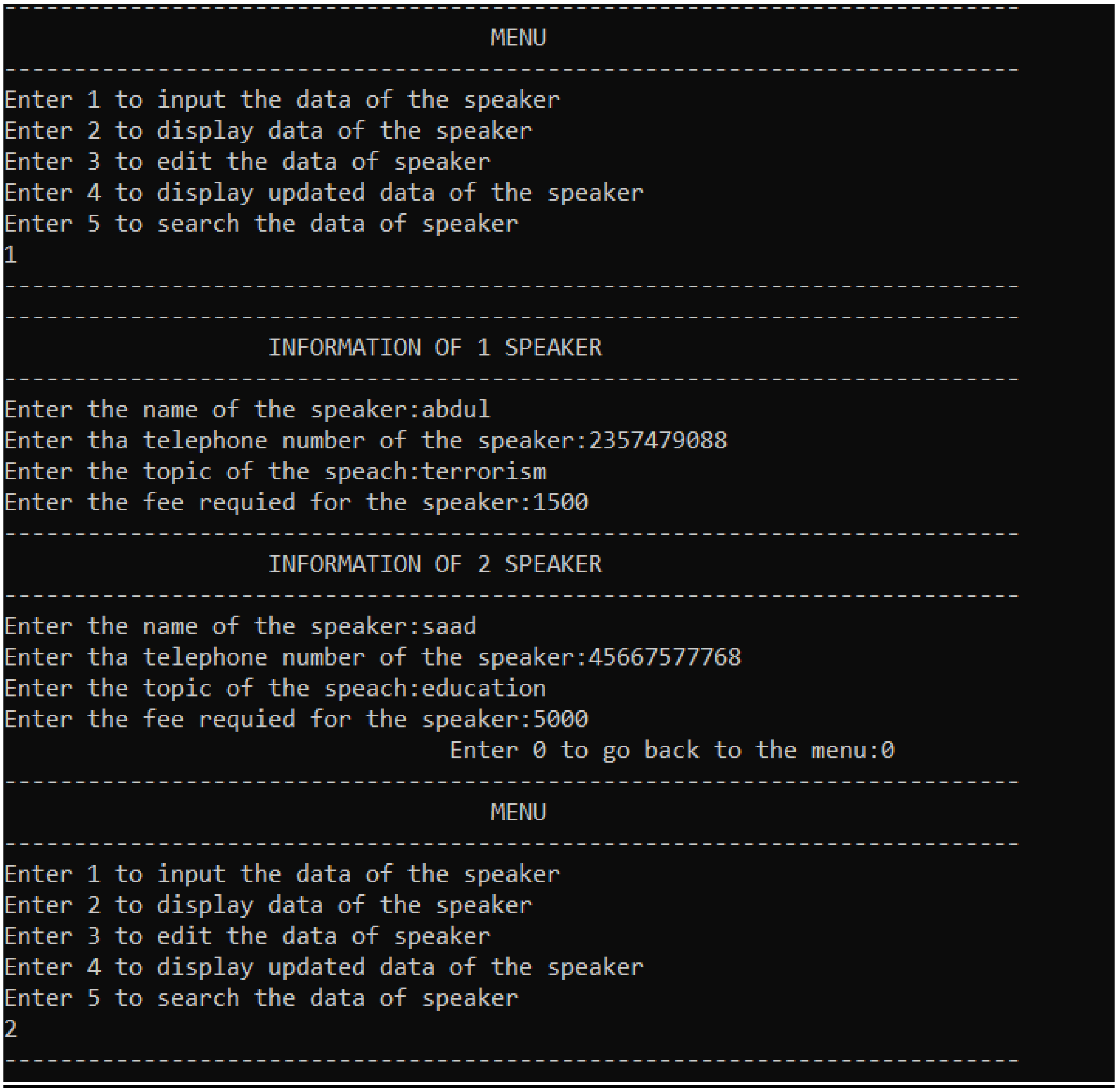
```
                        cout << "Enter 4 to display updated data of the speaker" << 
endl;
                        cout << "Enter 5 to search the data of speaker " << endl;
                        cin >> op;
                        cout << "----------------------------------------------------------------------
-" << endl;
                        if (op == 1)
                        {
                         input_info(x, 2);
                         int back;
                         cout << "                        Enter 0 to go back to the menu:";
                         cin >> back;
                         if (back == 0)
                         {
                                 goto menu;
                         }
                        }
                        if (op == 2)
                        {
                         display_info(x, 2);
                         int back;
                         cout << "                        Enter 0 to go back to the menu:";
                         cin >> back;
                         if (back == 0)
                         {
                                 goto menu;
                         }
                        }
                        if (op == 3)
                        {
                         string a;
                         cout << "Enter name of the speaker you want to edit the
data:";
                         cin >> a;
                         edit_info(x, 2, a);
                         int back;
                         cout << "                       Enter 0 to go back to the menu:";
                         cin >> back;
                         if (back == 0)
                         {
                                 goto menu;
                         }
                        }
                        if (op == 4)
                        {
                         display_updated_info(x, 2);
                         int back;
                         cout << "                       Enter 0 to go back to the menu:";
                         cin >> back;
                         if (back == 0)
                         {
                                   goto menu;
                         }
                        }
                        if (op == 5)
                        {
                         string a;
                         cout << "Enter name of the speaker by which you want to
search: ";
                         cin >> a;
                         search_info(x, 2, a);
                         int back;
                         cout << "                         Enter 0 to go back to the menu:";
                         cin >> back;
                         if (back == 0)
                         {
                                   goto menu;
                         }
                        }
}
void input_info(speaker arr[], int j)
{
                        for (int i = 0; i < j; i++)
                        {
```

```
                        cout << "--------------------------------------------------------------------
-" << endl;
                        cout << "                 INFORMATION OF " << i + 1 << " SPEAKER"
<< endl;
                        cout << "--------------------------------------------------------------------
-" << endl;
                        cout << "Enter the name of the speaker:";
                        cin >> arr[i].name;
                        cout << "Enter tha telephone number of the speaker:";
                        cin >> arr[i].tel_num;
                        cout << "Enter the topic of the speach:";
                        cin >> arr[i].speaking_topic;
                        cout << "Enter the fee requied for the speaker:";
                        cin >> arr[i].fee_requied;
                       }
}
void edit_info(speaker arr[], int j, string n)
{
                       cout << "--------------------------------------------------------------------
-" << endl;
                       cout << "                 UPDATE INFORMATION OF SPEAKER" <<
endl;
                       cout << "--------------------------------------------------------------------
-" << endl;
                       for (int i = 0; i < j; i++)
                       {
                        if (arr[i].name == n)
                        {
                                cout << "Enter tha telephone number of the speaker:";
                                cin >> arr[i].tel_num;
                                cout << "Enter the topic of the speach:";
                                cin >> arr[i].speaking_topic;
                                cout << "Enter the fee requied for the speaker:";
                                cin >> arr[i].fee_requied;
                        }
                       }
}
void display_info(speaker arr[], int j)
{
                       for (int i = 0; i < j; i++)
                       {
                        cout << "----------------------------------------------------------------------
-" << endl;
                        cout << "              INFORMATION OF " << i + 1 << " SPEAKER"
<< endl;
                        cout << "----------------------------------------------------------------------
-" << endl;
                        cout << "NAME:" << arr[i].name << endl;
                        cout << "TELEPHONE NUMBER:" << arr[i].tel_num << endl;
                        cout << "SPEAKING TOPIC:" << arr[i].speaking_topic << endl;
                        cout << "FEE REQUIED:" << arr[i].fee_requied << endl;
```

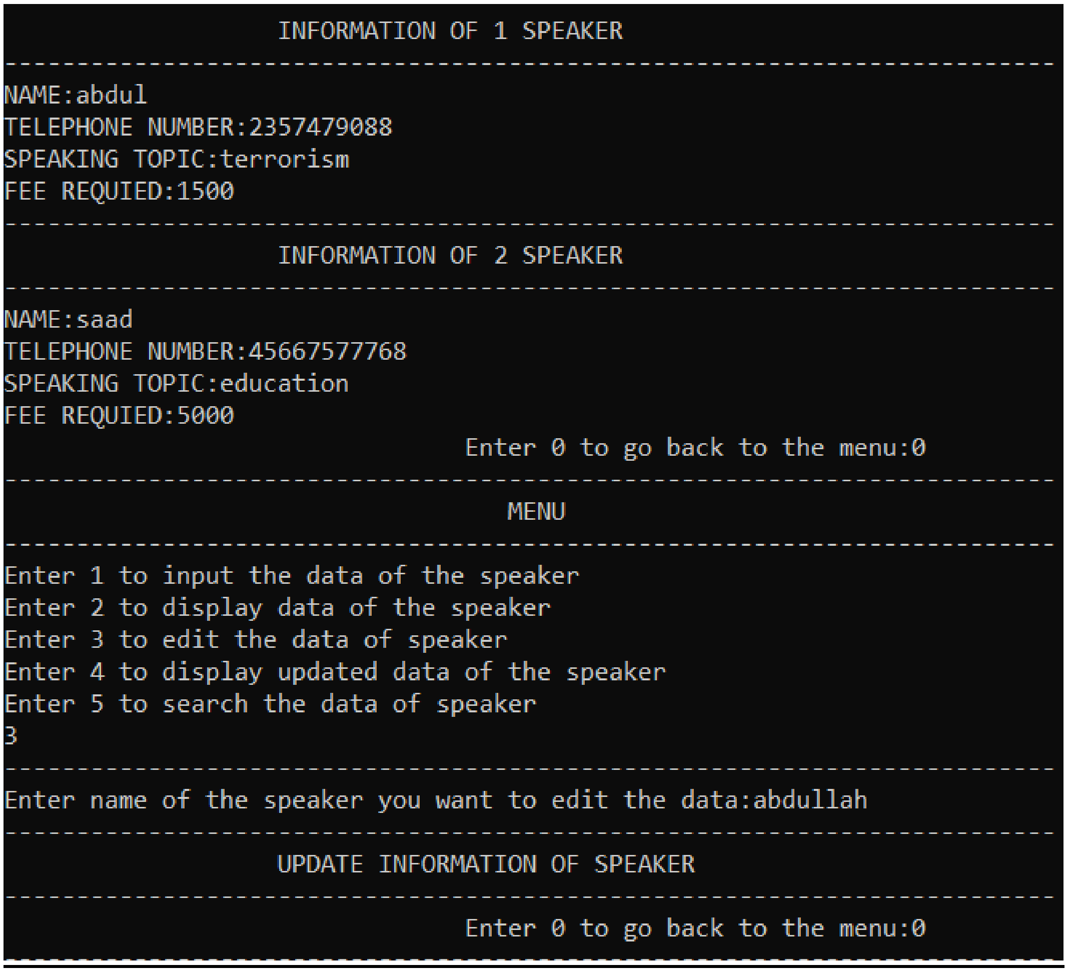
```
                              }
}
void display_updated_info(speaker arr[], int j)
{
                              for (int i = 0; i < j; i++)
                              {
                               cout << "-------------------------------------------------------------------
-" << endl;
                               cout << "                 UPDATED INFORMATION OF " << i + 1 << "
SPEAKER" << endl;
                               cout << "-------------------------------------------------------------------
-" << endl;
                               cout << "NAME:" << arr[i].name << endl;
                               cout << "TELEPHONE NUMBER:" << arr[i].tel_num << endl;
                               cout << "SPEAKING TOPIC:" << arr[i].speaking_topic << endl;
                               cout << "FEE REQUIED:" << arr[i].fee_requied << endl;
                              }
}
void search_info(speaker arr[], int j, string name)
{
                              cout << "-------------------------------------------------------------------
-" << endl;
                              cout << "               SEARCHED INFORMATION OF CUSTOMER  "
<< endl;
                              cout << "-------------------------------------------------------------------
-" << endl;
```

```
                        for (int i = 0; i < j; i++)
                        {
                         if (name == arr[i].name)
                         {
                                 cout << "NAME:" << arr[i].name << endl;
                                 cout << "TELEPHONE NUMBER:" << arr[i].tel_num << 
endl;
                                 cout << "SPEAKING TOPIC:" << arr[i].speaking_topic << 
endl;
                                 cout << "FEE REQUIED:" << arr[i].fee_requied << endl;
                         }
                        }
}
```

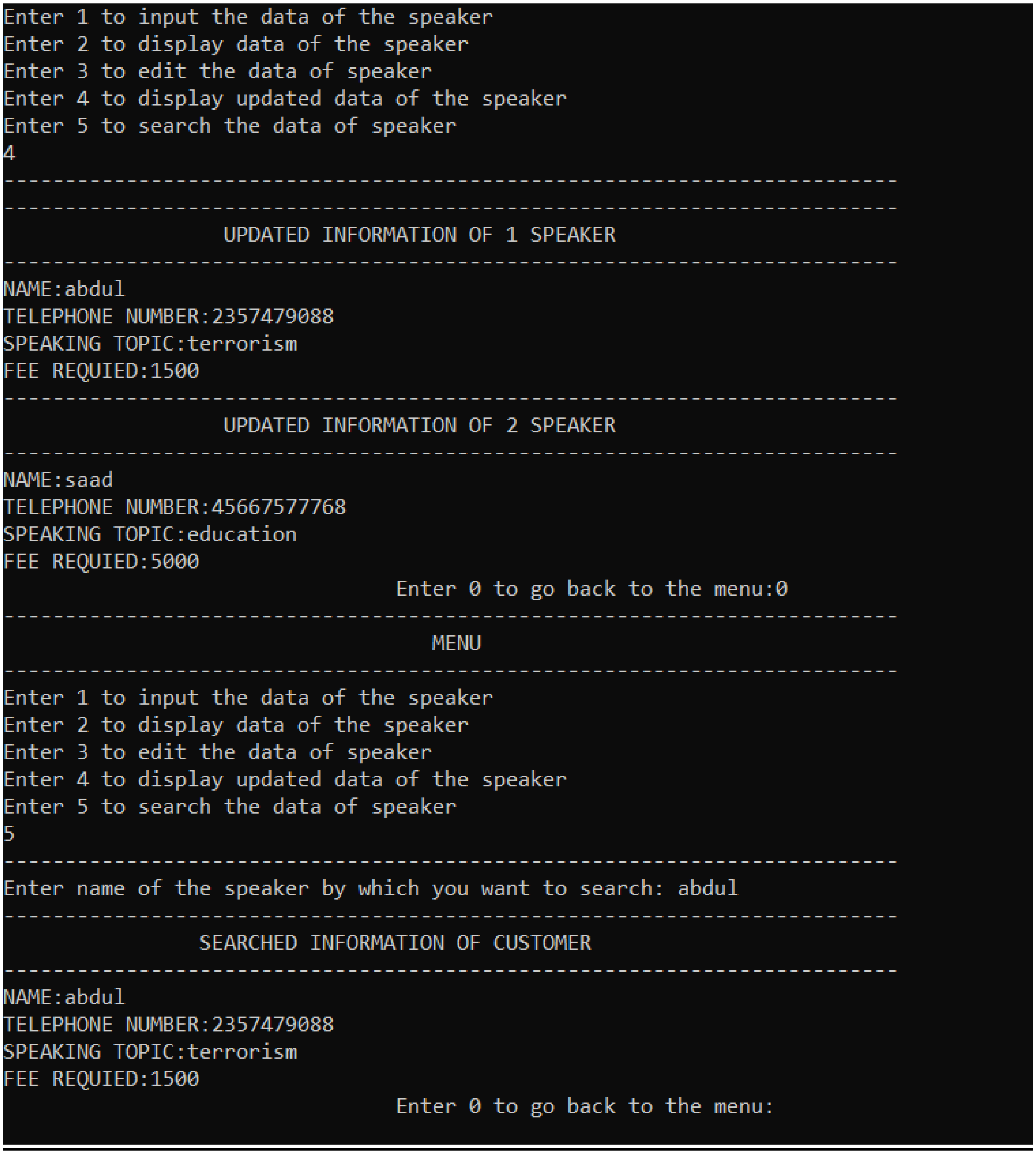
<u>Output:</u>



```
-------------------------------------------------------------------------
                                   MENU
-------------------------------------------------------------------------
Enter 1 to input the data of the speaker
Enter 2 to display data of the speaker
Enter 3 to edit the data of speaker
Enter 4 to display updated data of the speaker
Enter 5 to search the data of speaker
1
-------------------------------------------------------------------------
-------------------------------------------------------------------------
                   INFORMATION OF 1 SPEAKER
-------------------------------------------------------------------------
Enter the name of the speaker:abdul
Enter tha telephone number of the speaker:2357479088
Enter the topic of the speach:terrorism
Enter the fee requied for the speaker:1500
-------------------------------------------------------------------------
                   INFORMATION OF 2 SPEAKER
-------------------------------------------------------------------------
Enter the name of the speaker:saad
Enter tha telephone number of the speaker:45667577768
Enter the topic of the speach:education
Enter the fee requied for the speaker:5000
                                Enter 0 to go back to the menu:0
-------------------------------------------------------------------------
                                   MENU
-------------------------------------------------------------------------
Enter 1 to input the data of the speaker
Enter 2 to display data of the speaker
Enter 3 to edit the data of speaker
Enter 4 to display updated data of the speaker
Enter 5 to search the data of speaker
2
-------------------------------------------------------------------------
```



```
                   INFORMATION OF 1 SPEAKER
-------------------------------------------------------------------------
NAME:abdul
TELEPHONE NUMBER:2357479088
SPEAKING TOPIC:terrorism
FEE REQUIED:1500
-------------------------------------------------------------------------
                   INFORMATION OF 2 SPEAKER
-------------------------------------------------------------------------
NAME:saad
TELEPHONE NUMBER:45667577768
SPEAKING TOPIC:education
FEE REQUIED:5000
                                Enter 0 to go back to the menu:0
-------------------------------------------------------------------------
                                   MENU
-------------------------------------------------------------------------
Enter 1 to input the data of the speaker
Enter 2 to display data of the speaker
Enter 3 to edit the data of speaker
Enter 4 to display updated data of the speaker
Enter 5 to search the data of speaker
3
-------------------------------------------------------------------------
Enter name of the speaker you want to edit the data:abdullah
-------------------------------------------------------------------------
                   UPDATE INFORMATION OF SPEAKER
-------------------------------------------------------------------------
                                Enter 0 to go back to the menu:0
-------------------------------------------------------------------------
```



```
Enter 1 to input the data of the speaker
Enter 2 to display data of the speaker
Enter 3 to edit the data of speaker
Enter 4 to display updated data of the speaker
Enter 5 to search the data of speaker
4
-------------------------------------------------------------------------
-------------------------------------------------------------------------
                  UPDATED INFORMATION OF 1 SPEAKER
-------------------------------------------------------------------------
NAME:abdul
TELEPHONE NUMBER:2357479088
SPEAKING TOPIC:terrorism
FEE REQUIED:1500
-------------------------------------------------------------------------
                  UPDATED INFORMATION OF 2 SPEAKER
-------------------------------------------------------------------------
NAME:saad
TELEPHONE NUMBER:45667577768
SPEAKING TOPIC:education
FEE REQUIED:5000
                                Enter 0 to go back to the menu:0
-------------------------------------------------------------------------
                                   MENU
-------------------------------------------------------------------------
Enter 1 to input the data of the speaker
Enter 2 to display data of the speaker
Enter 3 to edit the data of speaker
Enter 4 to display updated data of the speaker
Enter 5 to search the data of speaker
5
-------------------------------------------------------------------------
Enter name of the speaker by which you want to search: abdul
-------------------------------------------------------------------------
                SEARCHED INFORMATION OF CUSTOMER
-------------------------------------------------------------------------
NAME:abdul
TELEPHONE NUMBER:2357479088
SPEAKING TOPIC:terrorism
FEE REQUIED:1500
                                Enter 0 to go back to the menu:
```

Programme:11

```
#include<iostream>

using namespace std;
```

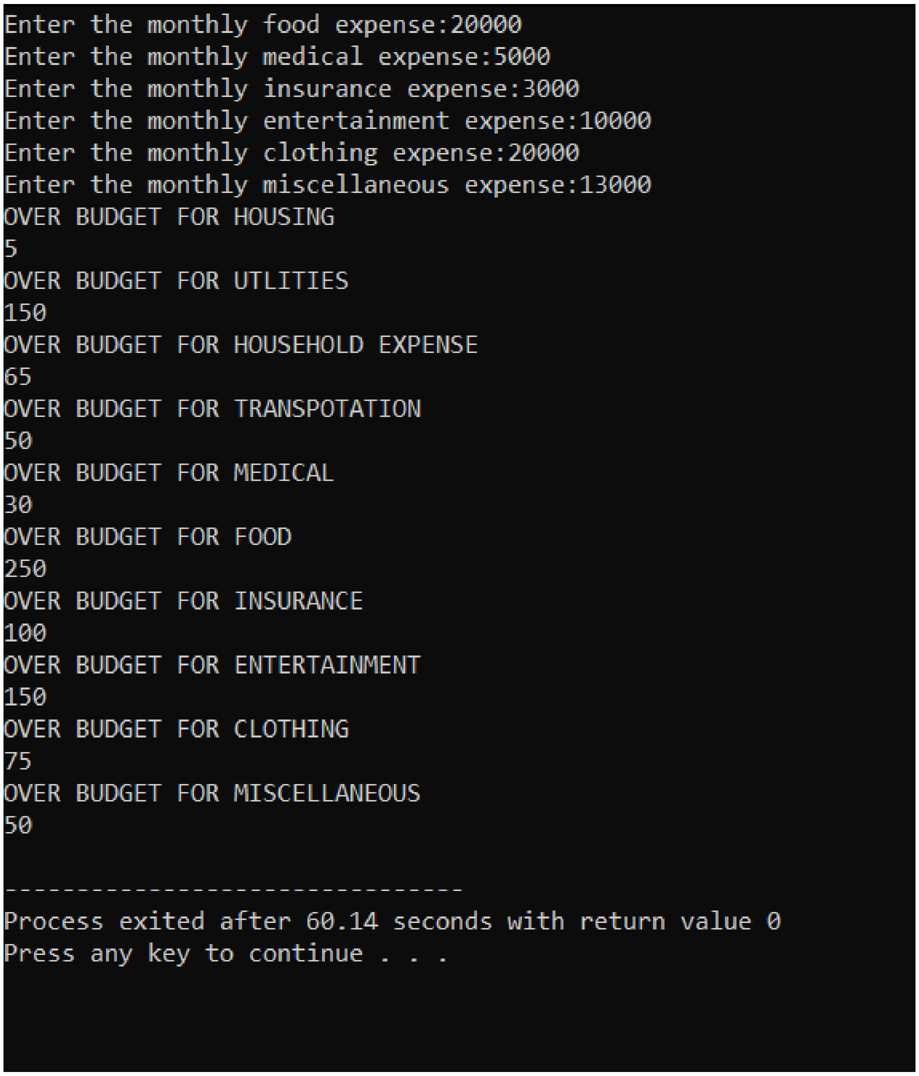
```
struct monthly_budget
{
                float housing, utlities, household_expenses, transpotation,
food, medical, insurance, entertainment,
                 clothing,miscellaneous;
};
void input(monthly_budget a);
void report(monthly_budget x, monthly_budget y);
int main()
{
                monthly_budget a;
                monthly_budget x{};
                a.housing = 5.00;
                a.utlities = 150;
                a.household_expenses = 65.0;
                a.transpotation = 50.0;
                a.food = 250.0;
                a.medical = 30.0;
                a.insurance = 100.0;
                a.entertainment = 150.0;
                a.clothing = 75.0;
                a.miscellaneous = 50.0;

                input(x);
                report(x, a);
}
void input(monthly_budget a)
{
                cout << "Enter the monthly housing expense:";
                cin >> a.housing;
                cout << "Enter the monthly utlities expense:";
                cin >> a.utlities;
                cout << "Enter the monthly household expenses expense:";
                cin >> a.household_expenses;
                cout << "Enter the monthly transpotation expense:";
                cin >> a.transpotation;
                cout << "Enter the monthly food expense:";
                cin >> a.food;
                cout << "Enter the monthly medical expense:";
                cin >> a.medical;
                cout << "Enter the monthly insurance expense:";
                cin >> a.insurance;
                cout << "Enter the monthly entertainment expense:";
                cin >> a.entertainment;
                cout << "Enter the monthly clothing expense:";
                cin >> a.clothing;
                cout << "Enter the monthly miscellaneous expense:";
                cin >> a.miscellaneous;
}
```

```
void report(monthly_budget x,monthly_budget y)
{
                float z;
                z = y.housing - x.housing;
                if (y.housing > x.housing)
                {
                 cout << "OVER BUDGET FOR HOUSING" << endl;
                 cout << z << endl;
                }
                else
                {
                 cout << "UNDER AMOUNT" << endl;
                 cout << z << endl;
                }
                z = y.utlities - x.utlities;
                if (y.utlities > x.utlities)
                {
                 cout << "OVER BUDGET FOR UTLITIES" << endl;
                 cout << z << endl;
                }
                else
                {
                 cout << "UNDER AMOUNT" << endl;
                 cout << z << endl;
                }
                z = y.household_expenses - x.household_expenses;
                if (y.household_expenses > x.household_expenses)
                {
                 cout << "OVER BUDGET FOR HOUSEHOLD EXPENSE" << endl;
                 cout << z << endl;
                }
                else
                {
                 cout << "UNDER AMOUNT" << endl;
                 cout << z << endl;
                }
                z = y.transpotation - x.transpotation;
                if (y.transpotation > x.transpotation)
                {
                 cout << "OVER BUDGET FOR TRANSPOTATION" << endl;
                 cout << z << endl;
                }
                else
                {
                 cout << "UNDER AMOUNT" << endl;
                 cout << z << endl;
                }
                z = y.medical - x.medical;
```

```
if (y.medical > x.medical)
{
 cout << "OVER BUDGET FOR MEDICAL" << endl;
 cout << z << endl;
}
else
{
 cout << "UNDER AMOUNT" << endl;
 cout << z << endl;
}
z = y.food - x.food;
if (y.food > x.food)
{
 cout << "OVER BUDGET FOR FOOD" << endl;
 cout << z << endl;
}
else
{
 cout << "UNDER AMOUNT" << endl;
 cout << z << endl;
}
z = y.insurance - x.insurance;
if (y.insurance > x.insurance)
{
 cout << "OVER BUDGET FOR INSURANCE" << endl;
 cout << z << endl;
}
else
{
 cout << "UNDER AMOUNT" << endl;
}
z = y.entertainment - x.entertainment;
if (y.entertainment > x.entertainment)
{
 cout << "OVER BUDGET FOR ENTERTAINMENT" << endl;
 cout << z << endl;
}
else
{
 cout << "UNDER AMOUNT" << endl;
 cout << z << endl;
}
z = y.clothing - x.clothing;
if (y.clothing > x.clothing)
{
 cout << "OVER BUDGET FOR CLOTHING" << endl;
 cout << z << endl;
}
```

```
                        else
                        {
                         cout << "UNDER AMOUNT" << endl;
                         cout << z << endl;
                        }
                        z = y.miscellaneous - x.miscellaneous;
                        if (y.miscellaneous > x.miscellaneous)
                        {
                         cout << "OVER BUDGET FOR MISCELLANEOUS" << endl;
                         cout << z << endl;
                        }
                        else
                        {
                         cout << "UNDER AMOUNT" << endl;
                         cout << z << endl;
                        }
}
```

Output:



```
Enter the monthly food expense:20000
Enter the monthly medical expense:5000
Enter the monthly insurance expense:3000
Enter the monthly entertainment expense:10000
Enter the monthly clothing expense:20000
Enter the monthly miscellaneous expense:13000
OVER BUDGET FOR HOUSING
5
OVER BUDGET FOR UTLITIES
150
OVER BUDGET FOR HOUSEHOLD EXPENSE
65
OVER BUDGET FOR TRANSPOTATION
50
OVER BUDGET FOR MEDICAL
30
OVER BUDGET FOR FOOD
250
OVER BUDGET FOR INSURANCE
100
OVER BUDGET FOR ENTERTAINMENT
150
OVER BUDGET FOR CLOTHING
75
OVER BUDGET FOR MISCELLANEOUS
50

--------------------------------
Process exited after 60.14 seconds with return value 0
Press any key to continue . . .
```

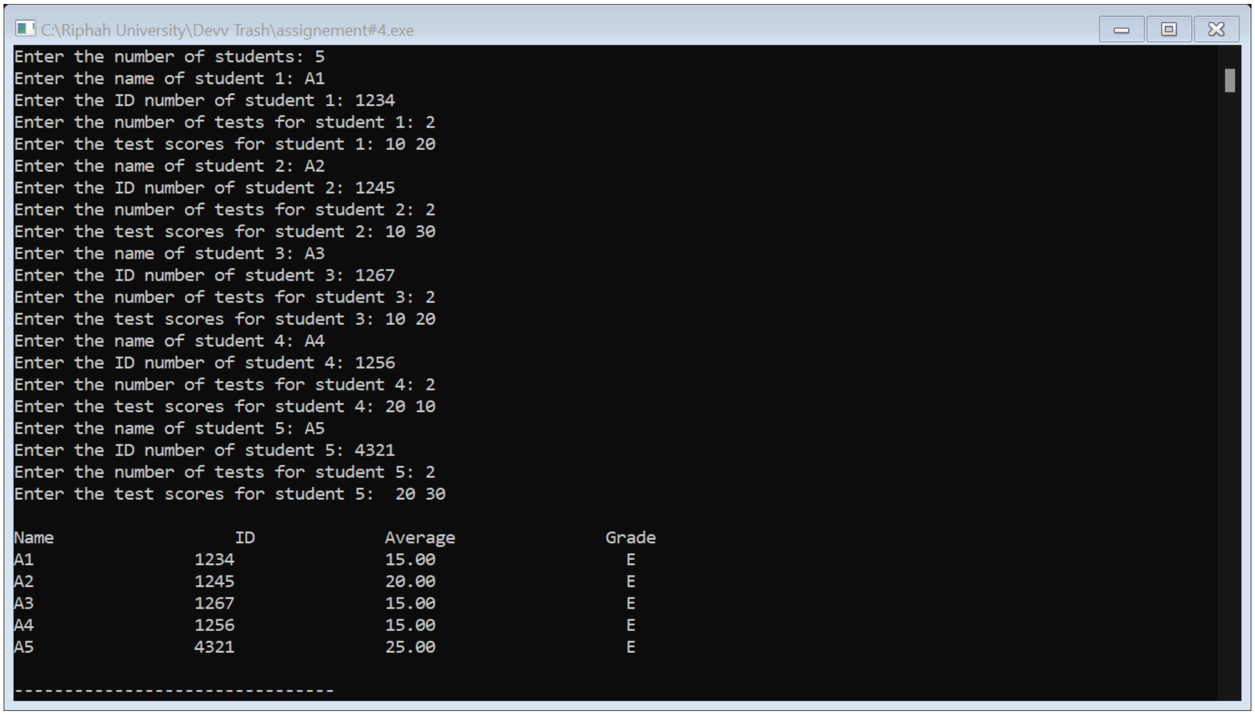
Programme :12

```
#include <iostream>

#include <cstring>

#include <cstdlib>

#include <iomanip>
```

```
using namespace std;

const int MAX_NAME_LENGTH = 50;

struct Member {
  char name[MAX_NAME_LENGTH];
  int id;
  int num;
  int* tests;
  float average;
  char grade;
};

int main() {
  int numStudents;
  cout << "Enter the number of students: ";
  cin >> numStudents;

  Member* students = new Member[numStudents];
  for (int i = 0; i < numStudents; i++) {
    cout << "Enter the name of student " << i+1 << ": ";
    cout << "Enter the ID number of student " << i+1 << ": ";
    cin >> students[i].id;

    cout << "Enter the number of tests for student " << i+1 << ": ";
    cin >> students[i].num;
    students[i].tests = new int[students[i].num];

    cout << "Enter the test scores for student " << i+1 << ": ";
    int sum = 0;
    for (int j = 0; j < students[i].num; j++) {
      cin >> students[i].tests[j];
      sum += students[i].tests[j];
    }
    students[i].average = (float)sum / students[i].num;

    if (students[i].average >= 91) {
      students[i].grade = 'A';
    } else if (students[i].average >= 81) {
      students[i].grade = 'B';
    } else if (students[i].average >= 71) {
      students[i].grade = 'C';
    } else if (students[i].average >= 61) {
    } else {
      students[i].grade = 'E';
    }
  }


  cout << endl << "Name" << setw(20) << "ID" << setw(20) << "Average" << setw(20) <<
"Grade" << endl;
  for (int i = 0; i < numStudents; i++) {
    cout << students[i].name << setw(20) << students[i].id << setw(20) << setprecision(2) <<
fixed << students[i].average << setw(20) << students[i].grade << endl;
  }


  // Deallocate memory
  for (int i = 0; i < numStudents; i++) {
    delete[] students[i].tests;
  }
  delete[] students;
  return 0;
```

}

<u>Output:</u>



```
Enter the number of students: 5
Enter the name of student 1: A1
Enter the ID number of student 1: 1234
Enter the number of tests for student 1: 2
Enter the test scores for student 1: 10 20
Enter the name of student 2: A2
Enter the ID number of student 2: 1245
Enter the number of tests for student 2: 2
Enter the test scores for student 2: 10 30
Enter the name of student 3: A3
Enter the ID number of student 3: 1267
Enter the number of tests for student 3: 2
Enter the test scores for student 3: 10 20
Enter the name of student 4: A4
Enter the ID number of student 4: 1256
Enter the number of tests for student 4: 2
Enter the test scores for student 4: 20 10
Enter the name of student 5: A5
Enter the ID number of student 5: 4321
Enter the number of tests for student 5: 2
Enter the test scores for student 5:  20 30

Name                  ID             Average               Grade
A1                1234               15.00                   E
A2                1245               20.00                   E
A3                1267               15.00                   E
A4                1256               15.00                   E
A5                4321               25.00                   E

--------------------------------
```