ELECTRICITY BILLING SYSTEM

Academic Year: 2021 - 22 ODDSEMESTER

Department with Specialization : B.Tech., – Computer Science and Engineering with AI and ML

Semester : I

Course Code : 18CSS101J

Course Title : Programming and Problem Solving

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Telecom Billing System

Aim

To create a telecom billing system program using C language.

Abstract

C is a procedural programming language. It was initially developed by Dennis Ritchie as a system programming language to write operating system. The main features of C language include low-level access to memory, simple set of keywords, and clean style, these features make C language suitable for system programming like operating system or compiler development.

The Telecom Billing System with Source Code is a project that can generate a billing statement for Telecommunication. The system can manage the generating a bill for each customer. The purpose of the system is to help and manage for giving automates billing. The Telecom Billing System was developed in a simple console application; the system can only be access with user login information. The user can do many things in the system in the system, he/she can add new record, list all record, modify record, and search record. The system provides you some functionality that enables you to generate a billing statement for your customer. The inputted data are stored as a text file. The Telecom Billing System was built in a simple coding structure of C to ensure that beginner can learn something in this system.

Features:

- Login System with Proper Validations
- Easy Payments through the system
- Systematic arrangement of records
- Easy to add, modify, remove, list records

ALGORITHM

STEP 1: START

STEP 2: ENTER ANY OF THE OPTIONS “A”,” L”,”M”,” P”,” S”,” D”,”E”.

STEP 3: IF THE INPUT IS “A” THEN USER CAN ADD NEW RECORD BY ENTERING THE DISPLAYED CREDENTIALS.

STEP 4: IF USER ENTERS “ESC” HE CAN EXIT THE OPTION OR USER CAN ADD NEW RECORDS BY ENTERING ANY OTHER KEY.

STEP 5: IF THE INPUT RECIVED IS “L”, THE LIST OF RECORDS WILL BE DISPLAYED.

STEP 6: IF INPUT RECEIVED IS “M”, USER CAN MODIFY THE RECORDS WITH THE HELP OF PHONE NUMBER.

STEP 7: IF INPUT RECEVIED IS “P”, USER CAN DO THE PAYMENT WITH THE HELP OF PHONE NUMBER, NAME, AND AMOUNT TO BE PAID.

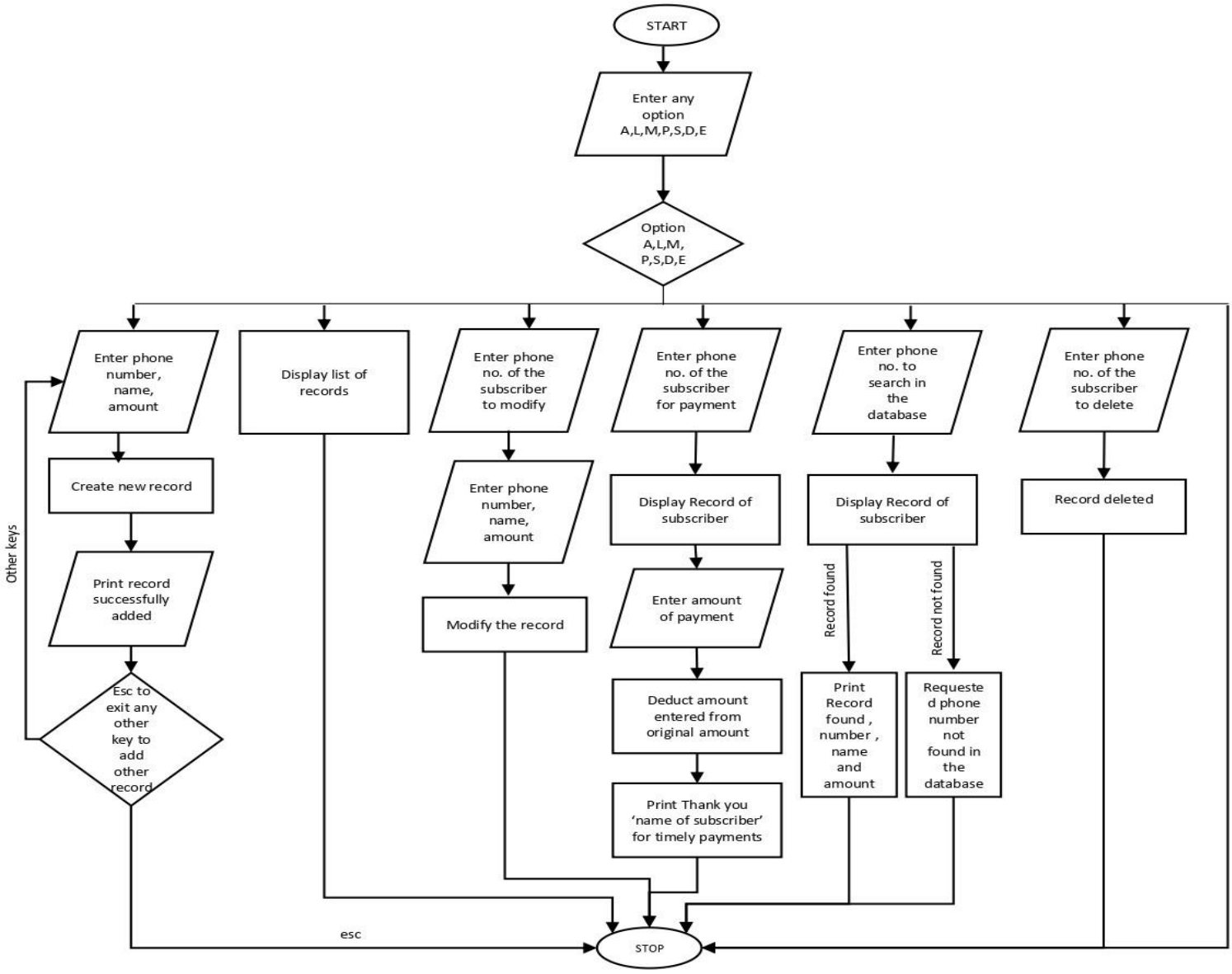
STEP 8: IF RECEIVED INPUT IS “S”, USER CAN SEARCH RECORDS BY USING VALID PHONE NUMBER.

STEP 9: IF RECEIVED INPUT IS “D”, USER CAN DELETE RECORDS FROM DATABASE BY USING VALID PHONE NUMBER.

STEP 10: IF RECEIVED INPUT IS “E” THE PROGRAM STOPS ITS EXCECUTION

STEP 11: STOP

Flow Chart


START
Enter any option A,L,M,P,S,D,E
Option A,L,M, P,S,D,E
Enter phone number, name, amount
Create new record
Print record successfully added
Esc to exit any other key to add other record
Other keys
Display list of records
Enter phone no. of the subscriber to modify
Enter phone number, name, amount
Modify the record
Enter phone no. of the subscriber for payment
Display Record of subscriber
Enter amount of payment
Deduct amount entered from original amount
Print Thank you 'name of subscriber' for timely payments
Enter phone no. to search in the database
Display Record of subscriber
Record found
Record not found
Print Record found , number , name and amount
Requested phone number not found in the database
Enter phone no. of the subscriber to delete
Record deleted
esc
STOP

Source Code

```
#include<stdio.h>
#include<conio.h>
#include<ctype.h>
#include<windows.h>
#include<stdlib.h>
struct subscriber
{
char phonenumber[20];
char name[50];
float amount;
}s;
void addrecords();
void listrecords();
void modifyrecords();
void deleterecords();
void searchrecords();
void payment();
char get;
int main()
{
        int phonenumber;
        char choice;
```

```
while (1)
        {
        system("cls");


        printf("\n     ******************************************");
        printf("\n    ****  TELEPHONE BILLING MANAGEMENT SYSTEM  ****");
        printf("\n    ******************************************");
          printf("\n");
        printf("\n\t A : Adding new records.\n \t L : Listing of records");
                printf("\n\t M : Modifying records.\n \t P : Payments");
                printf("\n\t S : Searching records.");
                printf("\n\t D : Deleting records.\n\t E : Exit Program\n");
                printf("\n");
                printf("\n\t PLEASE SELECT THE LETTERS ONLY " );
                choice=getche();
                choice=toupper(choice);
                switch(choice)
                {
                        case 'P':
                                payment();break;
                        case 'A' :
                                addrecords();break;
                        case 'L' :
```

```
                    listrecords();break;
                case 'M':
                    modifyrecords();break;
                case 'S' :
                    searchrecords();break;
                case 'D':
                    deleterecords();break;
                case 'E':
                    system("cls");
                    printf("\n\n\t\t\t\tTHANK YOU");
                    printf("\n\n\n\n\n:\n\tFOR USING OUR SERVICE");
                    Sleep(2000);
                    exit(0);
                    break;
                default:
                    system("cls");
                    printf("Incorrect Input");
                    printf("\nAny key to continue");
                    getch();
            }
        }
}
void addrecords()
{
```

```
FILE *f;
char test;
f=fopen("data.dat","ab+");
if(f==0)
{   f=fopen("data.dat","wb+");
        system("cls");
        printf("please wait while we configure your computer");
        printf("/npress any key to continue");
        getch();
}
while(1)
{
        system("cls");
        printf("\n Enter phone number:");
        scanf("%s",&s.phonenumber);
        printf("\n Enter name:");
        fflush(stdin);
        scanf("%[^\n]",&s.name);
        printf("\n Enter amount:");
        scanf("%f",&s.amount);
        fwrite(&s,sizeof(s),1,f);
        fflush(stdin);
        system("cls");
        printf("1 record successfully added");
```

```
            printf("\n Press esc key to exit, any other key to add other record:");
            test=getche();
            if(test==27)
                  break;
      }
      fclose(f);
}
void listrecords()
{
      FILE *f;
      int i;
      if((f=fopen("data.dat","rb"))==NULL)
            exit(0);
      system("cls");
      printf("Phone Number\t\tUser Name\t\t\tAmount\n");
      for(i=0;i<79;i++)
            printf("-");
      while(fread(&s,sizeof(s),1,f)==1)
      {
            printf("\n%-10s\t\t%-20s\t\t $. %.2f /-",s.phonenumber,s.name,s.amount);
      }
      printf("\n");
      for(i=0;i<79;i++)
            printf("-");
```

```
fclose(f);
getch();
}
void deleterecords()
{
        FILE *f,*t;
        int i=1;
        char phonenumber[20];
        if((t=fopen("temp.dat","w+"))==NULL)
        exit(0);
        if((f=fopen("data.dat","rb"))==NULL)
        exit(0);
        system("cls");
        printf("Enter the phone number to be deleted from the Database");
        fflush(stdin);
        scanf("%[^\n]",phonenumber);
        while(fread(&s,sizeof(s),1,f)==1)
        {
                if(strcmp(s.phonenumber,phonenumber)==0)
                {       i=0;
                        continue;

                }
```

```
            else
                    fwrite(&s,sizeof(s),1,t);
        }
        if(i==1)
        {     system("cls");
            printf("Phone number %s not found",phonenumber);
            remove("data.dat");
            rename("temp.dat","data.dat");
            getch();
            fclose(f);
            fclose(t);
            main();
        }
        remove("data.dat");
        rename("temp.dat","file.dat");
        system("cls");
        printf("The Number %s Successfully Deleted!!!!",phonenumber);
        fclose(f);
        fclose(t);
        getch();
}
void searchrecords()
{
        FILE *f;
```

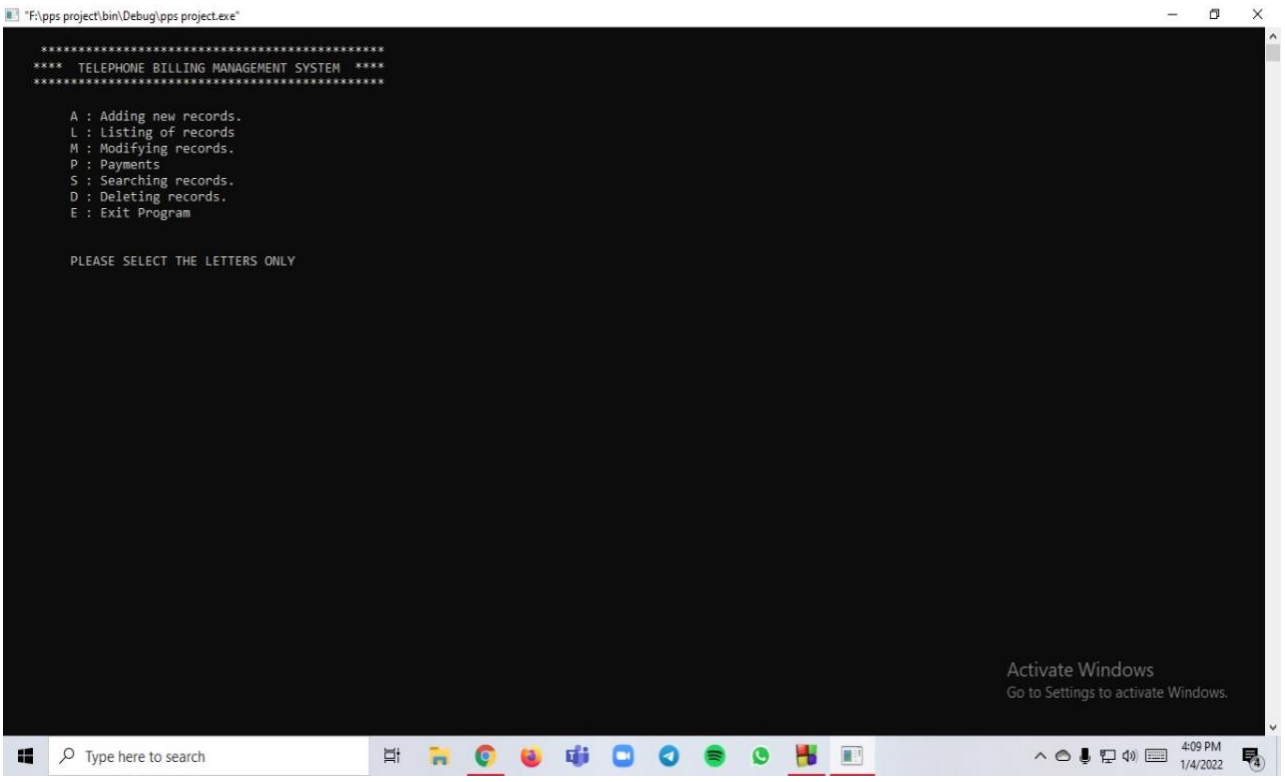
```
	char phonenumber[20];
	int flag=1;
	f=fopen("data.dat","rb+");
	if(f==0)
		exit(0);
	fflush(stdin);
	system("cls");
	printf("Enter Phone Number to search in our database");
	scanf("%s", phonenumber);
	while(fread(&s,sizeof(s),1,f)==1)
	{
		if(strcmp(s.phonenumber,phonenumber)==0)
		{	system("cls");
			printf(" Record Found ");
			printf("\n\nPhonenumber: %s\nName: %s\nAmount: $
%0.2f\n",s.phonenumber,s.name,s.amount);
			flag=0;
			break;
		}
		else if(flag==1)
		{	system("cls");
			printf("Requested Phone Number Not found in our database");
		}
	}
```

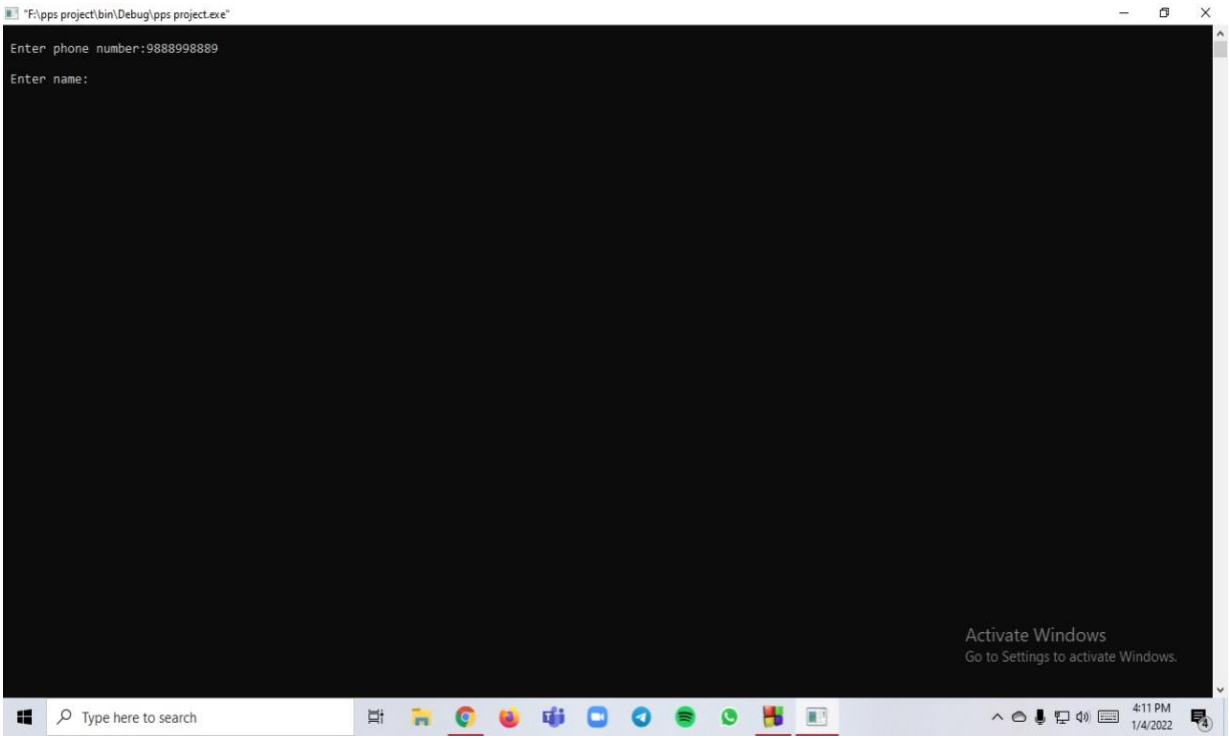
```
        getch();
        fclose(f);
}
void modifyrecords()
{
        FILE *f;
        char phonenumber[20];
        long int size=sizeof(s);
        if((f=fopen("data.dat","rb+"))==NULL)
                exit(0);
        system("cls");
        printf("Enter phone number of the subscriber to modify:");
        scanf("%[^\n]",phonenumber);
        fflush(stdin);
        while(fread(&s,sizeof(s),1,f)==1)
        {
                if(strcmp(s.phonenumber,phonenumber)==0)
                {
                        system("cls");
                        printf("\n Enter phone number:");
                        scanf("%s",&s.phonenumber);
                        printf("\n Enter name: ");
                        fflush(stdin);
                        scanf("%[^\n]",&s.name);
```

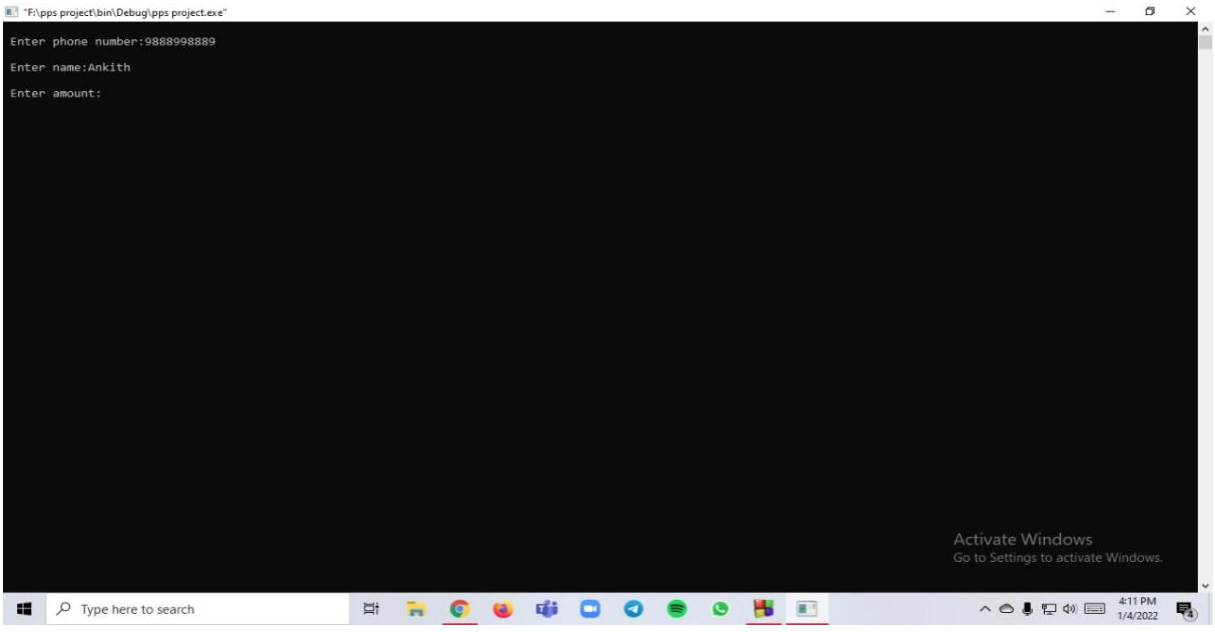
```
                printf("\n Enter amount: ");
                scanf("%f",&s.amount);
                fseek(f,-size,SEEK_CUR);
                fwrite(&s,sizeof(s),1,f);
                break;
            }
        }
        fclose(f);
}
void payment()
{
        FILE *f;
        char phonenumber[20];
        long int size=sizeof(s);
        float amt;
        int i;
        if((f=fopen("data.dat","rb+"))==NULL)
            exit(0);
        system("cls");
        printf("Enter phone number of the subscriber for payment");
        scanf("%[^\n]",phonenumber);
        fflush(stdin);
        while(fread(&s,sizeof(s),1,f)==1)
        {
```

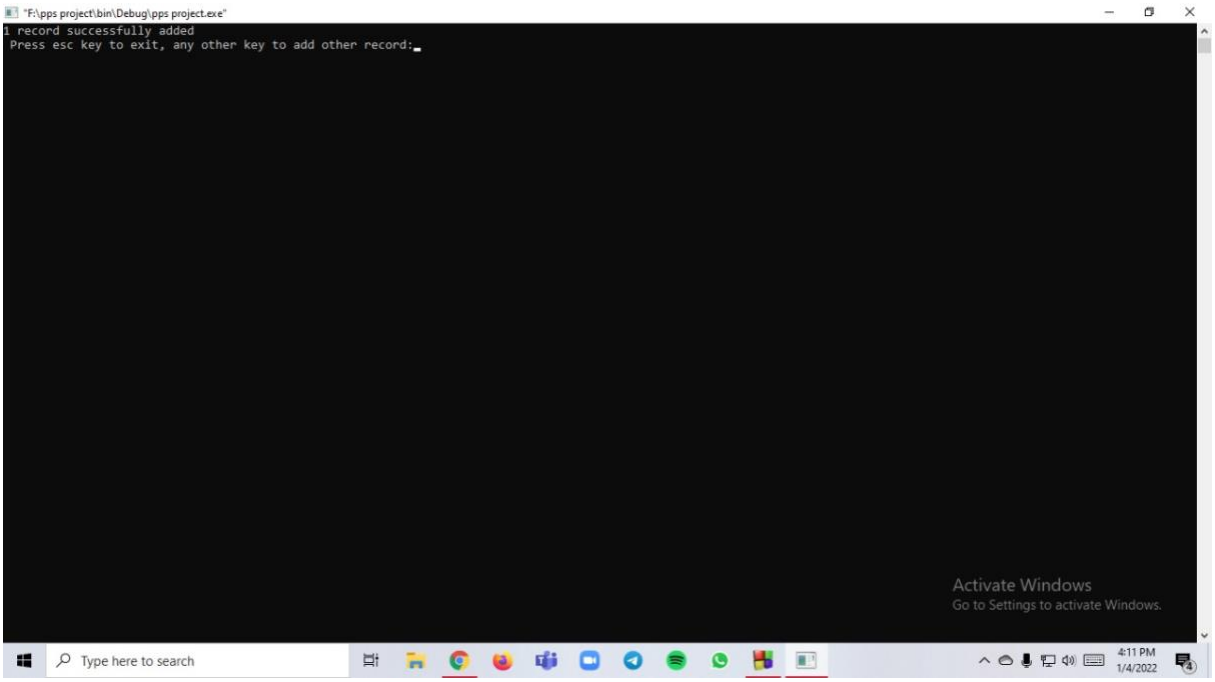
```
            if(strcmp(s.phonenumber,phonenumber)==0)
            {
                system("cls");
                printf("\n Phone No.: %s",s.phonenumber);
                printf("\n Name: %s",s.name);
                printf("\n Current amount: %f",s.amount);
                printf("\n");
                for(i=0;i<79;i++)
                    printf("-");
                printf("\n\nEnter amount of payment :");
                fflush(stdin);
                scanf(" %f",&amt);
                s.amount=(amt-s.amount);
                fseek(f,-size,SEEK_CUR);
                fwrite(&s,sizeof(s),1,f);
                break;
            }
        }
        system("cls");
        printf("THANK YOU %s FOR YOUR TIMELY PAYMENTS",s.name);
        getch();
        fclose(f);
}
```

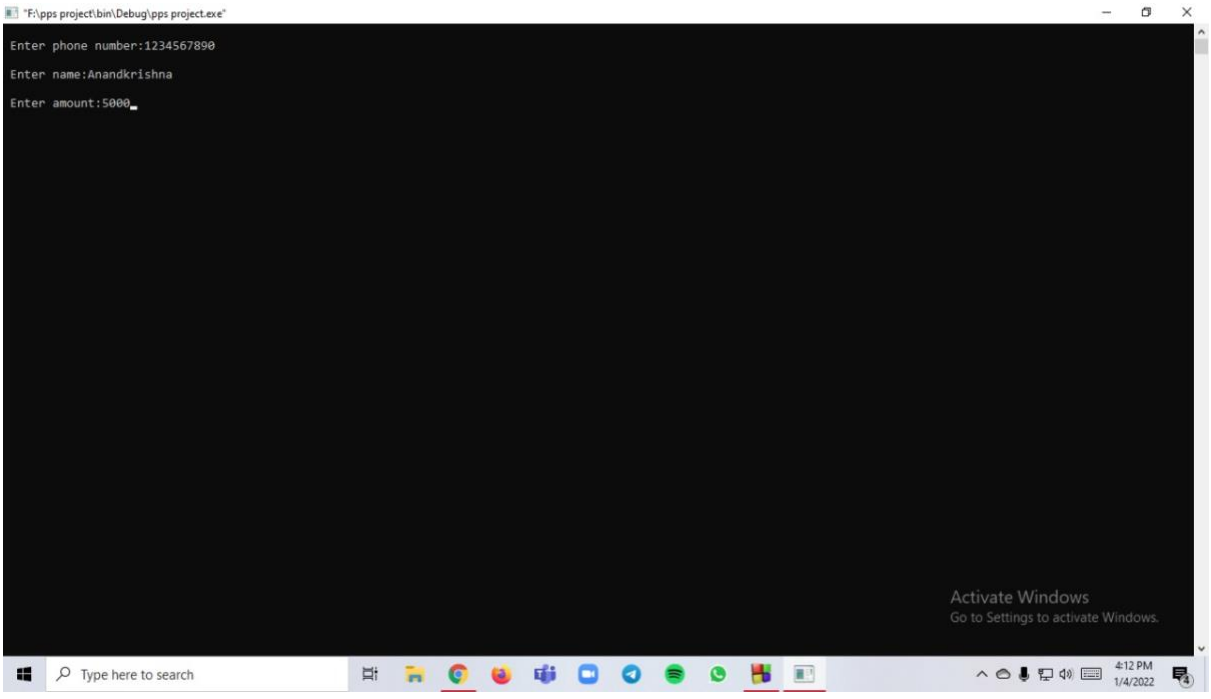
OUTPUT

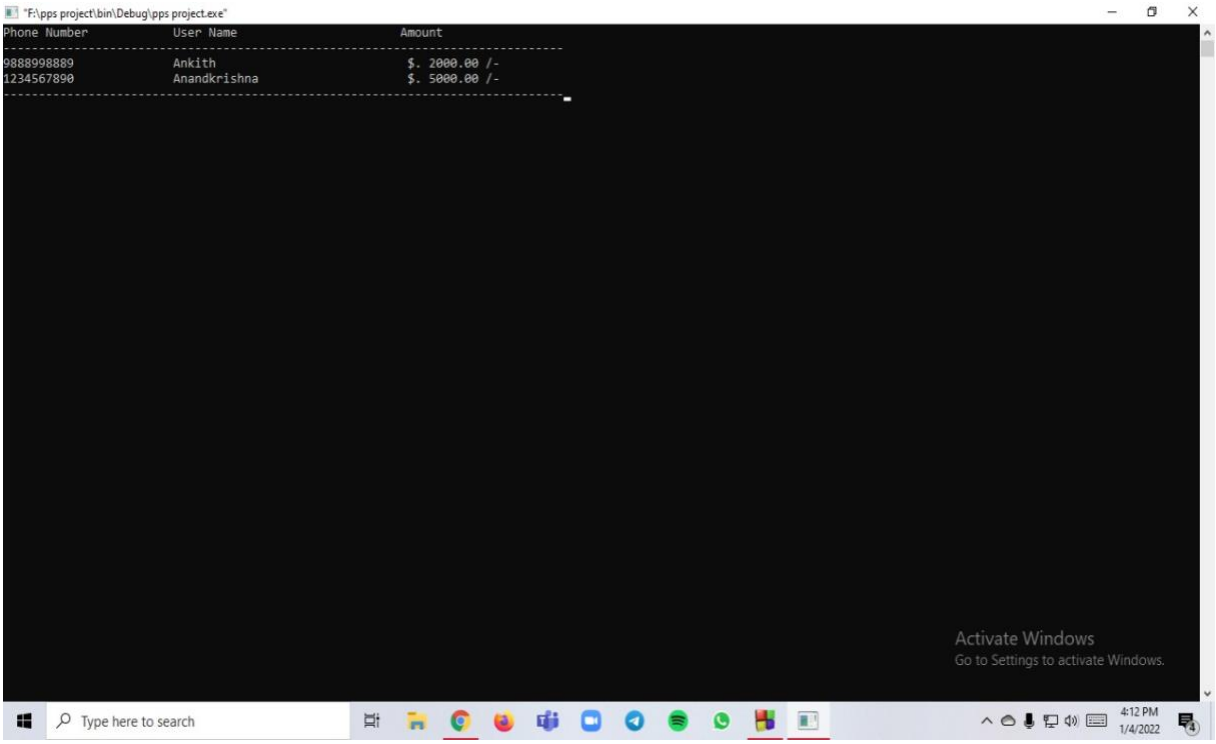

"F:\pps project\bin\Debug\pps project.exe"
****
**** TELEPHONE BILLING MANAGEMENT SYSTEM ****
****
A : Adding new records.
L : Listing of records
M : Modifying records.
P : Payments
S : Searching records.
D : Deleting records.
E : Exit Program
PLEASE SELECT THE LETTERS ONLY
Activate Windows
Go to Settings to activate Windows.
Type here to search
4:09 PM
1/4/2022

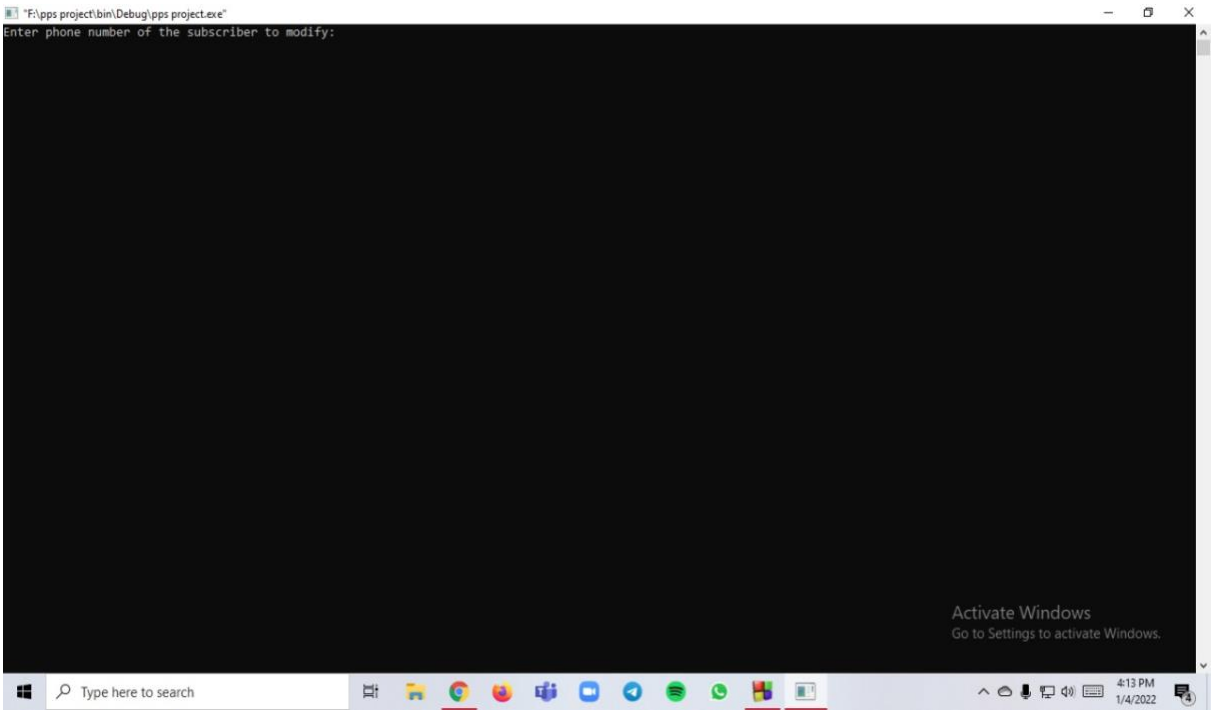

"F:\pps project\bin\Debug\pps project.exe"
Enter phone number:9888998889
Enter name:
Activate Windows
Go to Settings to activate Windows.
Type here to search
4:11 PM
1/4/2022

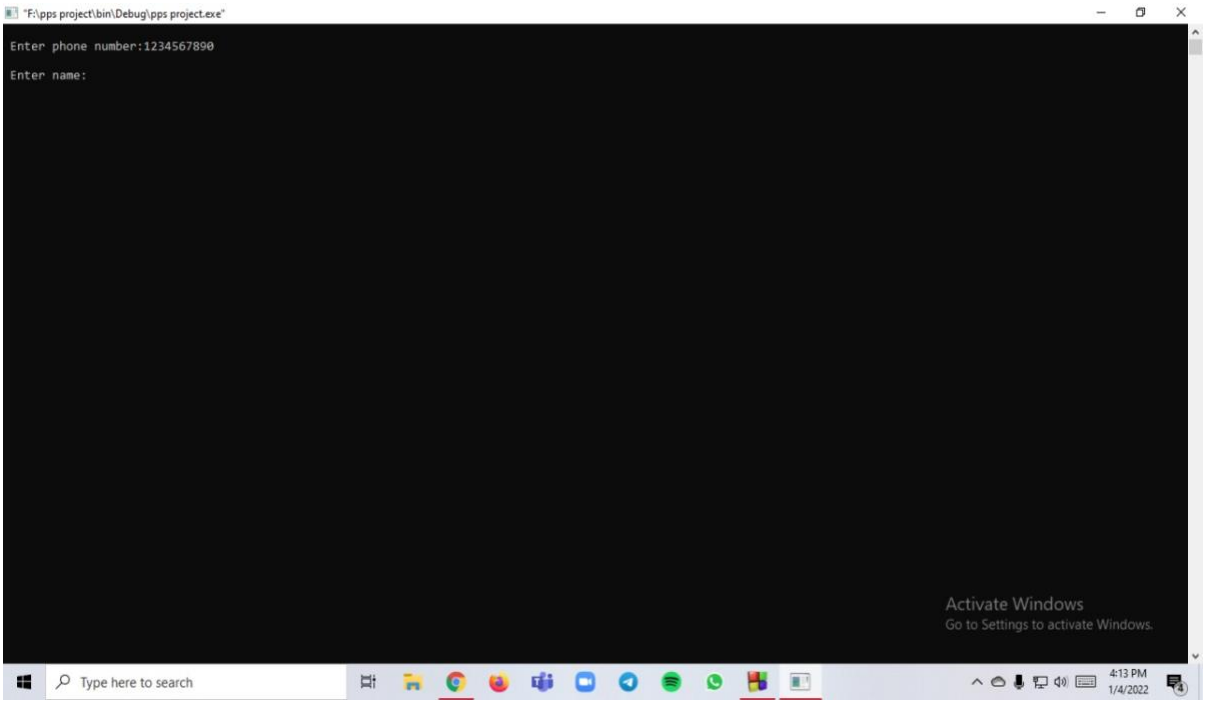

"F:\pps project\bin\Debug\pps project.exe"
Enter phone number:9888998889
Enter name:Ankith
Enter amount:
Activate Windows
Go to Settings to activate Windows.
Type here to search
4:11 PM
1/4/2022

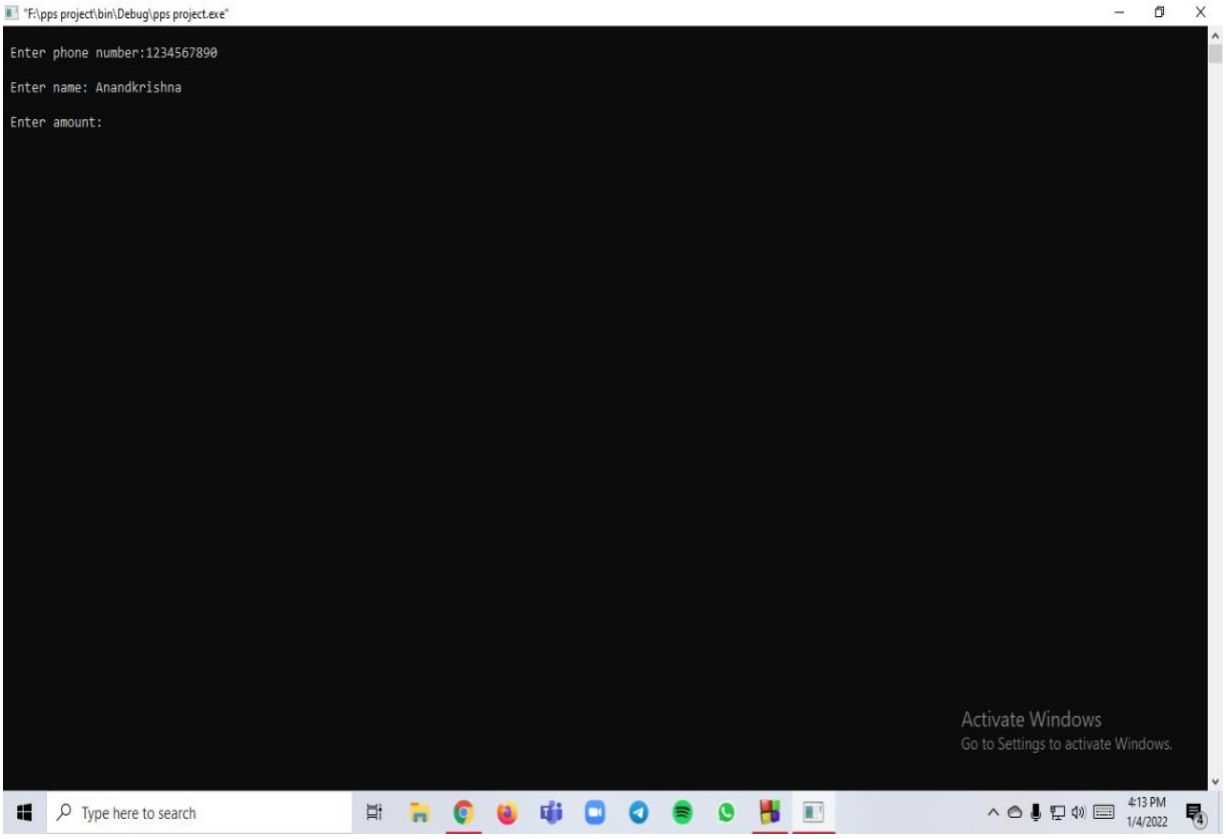

"F:\pps project\bin\Debug\pps project.exe"
1 record successfully added
Press esc key to exit, any other key to add other record:
Activate Windows
Go to Settings to activate Windows.
Type here to search
4:11 PM
1/4/2022

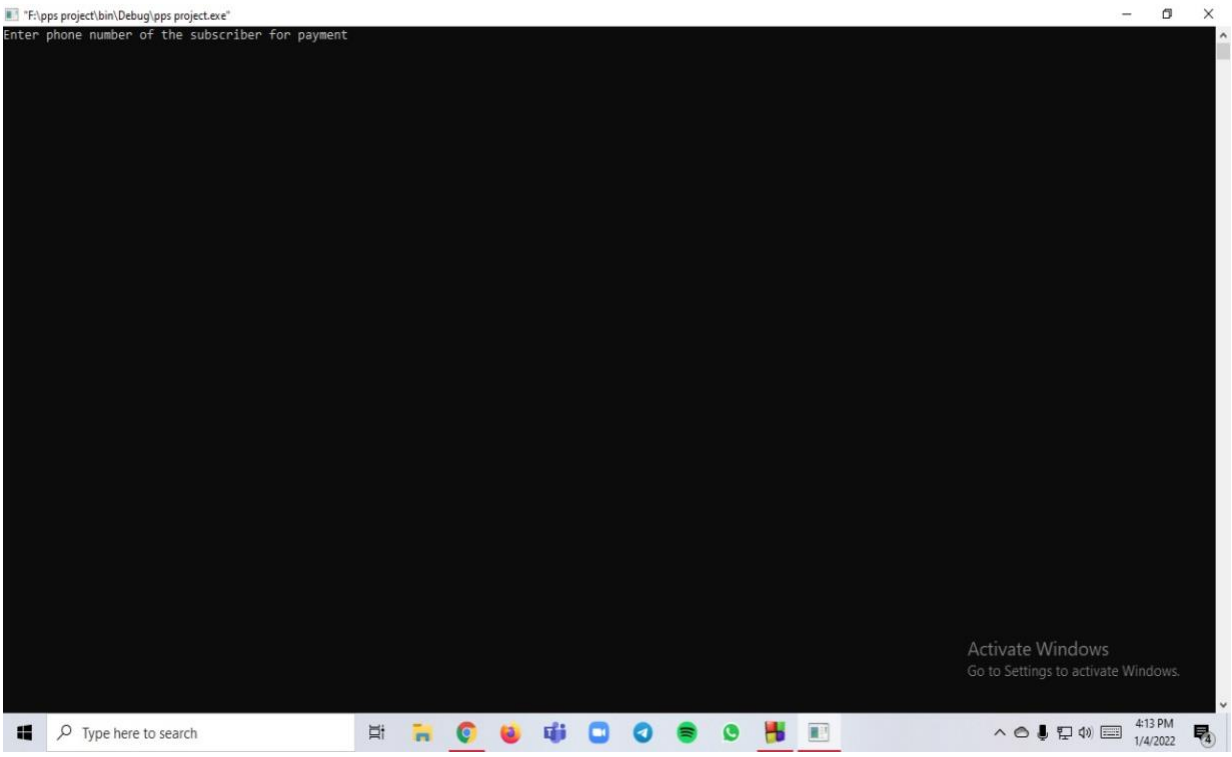

"F:\pps project\bin\Debug\pps project.exe"
Enter phone number:1234567890
Enter name:Anandkrishna
Enter amount:5000
Activate Windows
Go to Settings to activate Windows.
Type here to search
4:12 PM
1/4/2022

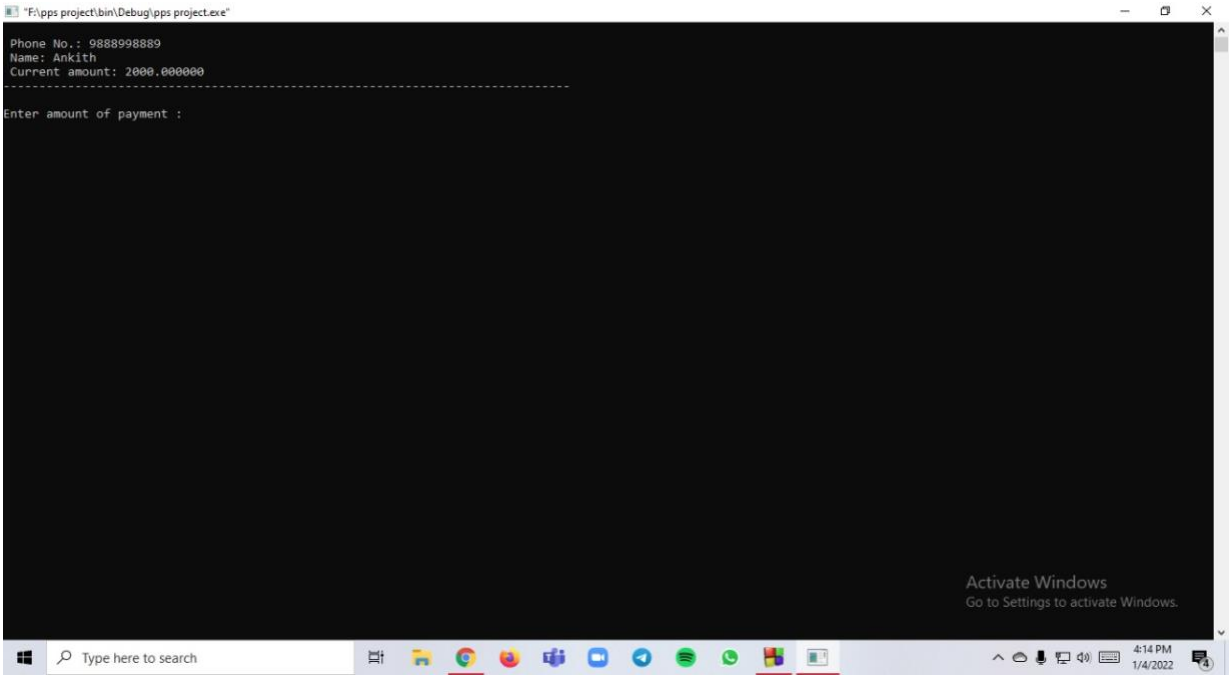

"F:\pps project\bin\Debug\pps project.exe"
Phone Number User Name Amount
9888998889 Ankith $. 2000.00 /-
1234567890 Anandkrishna $. 5000.00 /-
Activate Windows
Go to Settings to activate Windows.
Type here to search
4:12 PM
1/4/2022

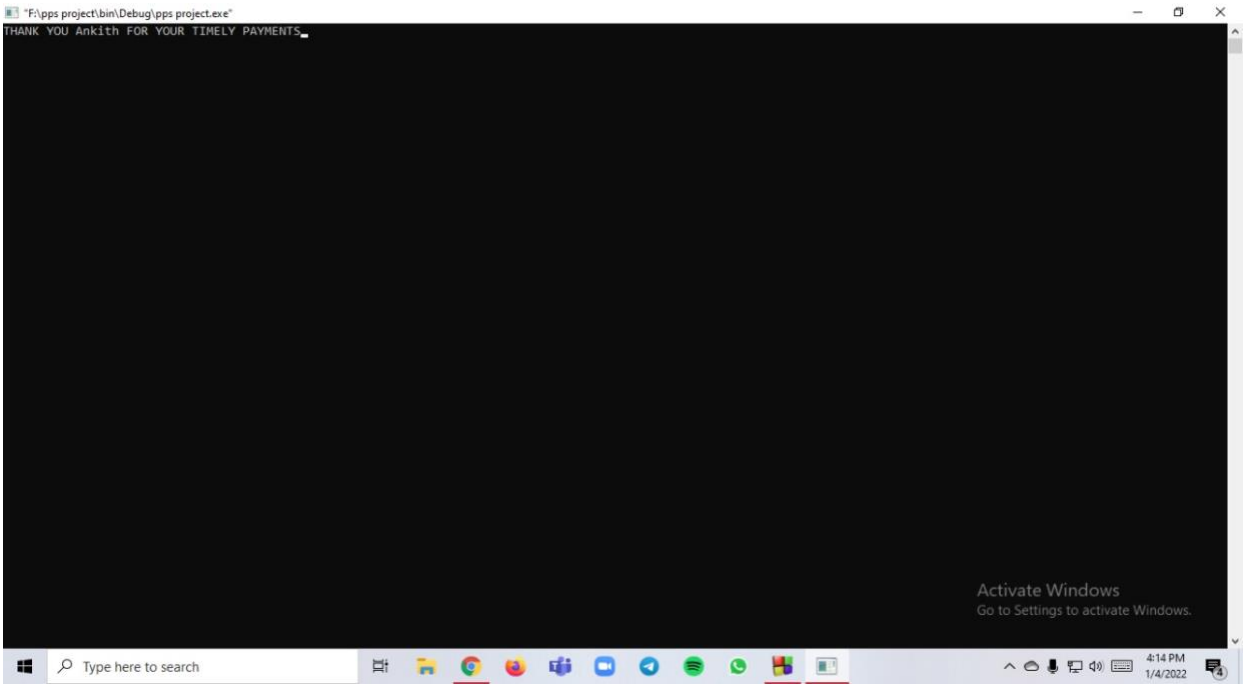

"F:\pps project\bin\Debug\pps project.exe"
Enter phone number of the subscriber to modify:
Activate Windows
Go to Settings to activate Windows.
Type here to search
4:13 PM
1/4/2022

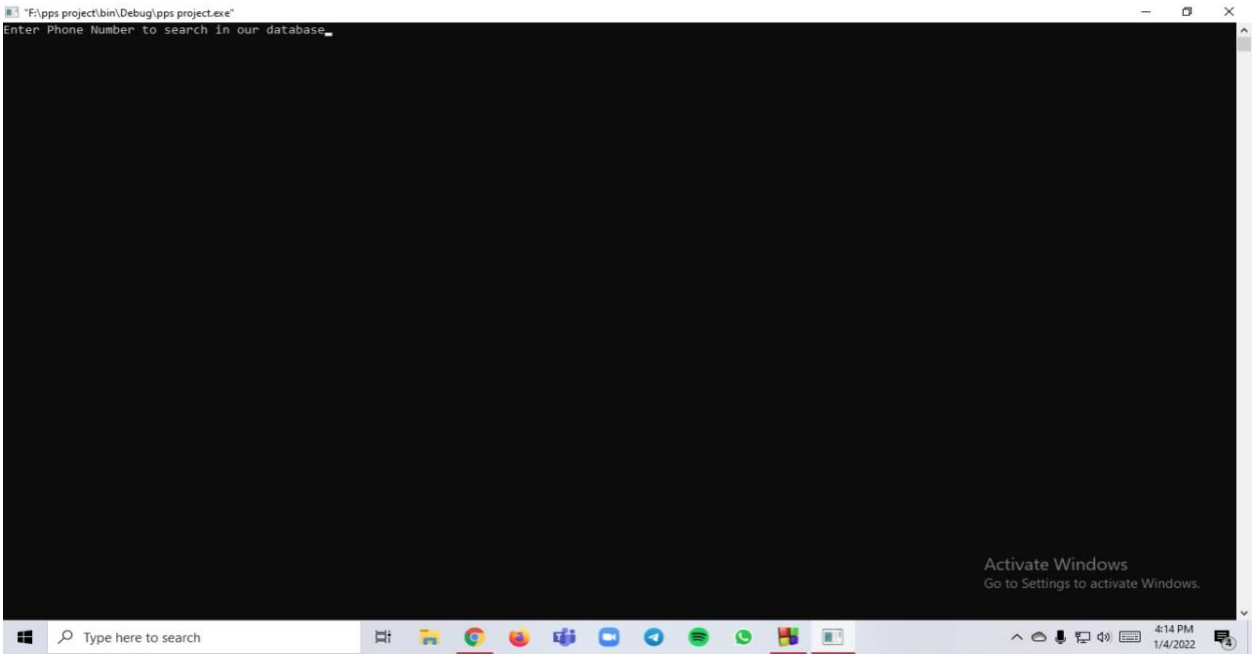

"F:\pps project\bin\Debug\pps project.exe"
Enter phone number:1234567890
Enter name:
Activate Windows
Go to Settings to activate Windows.
Type here to search
4:13 PM
1/4/2022

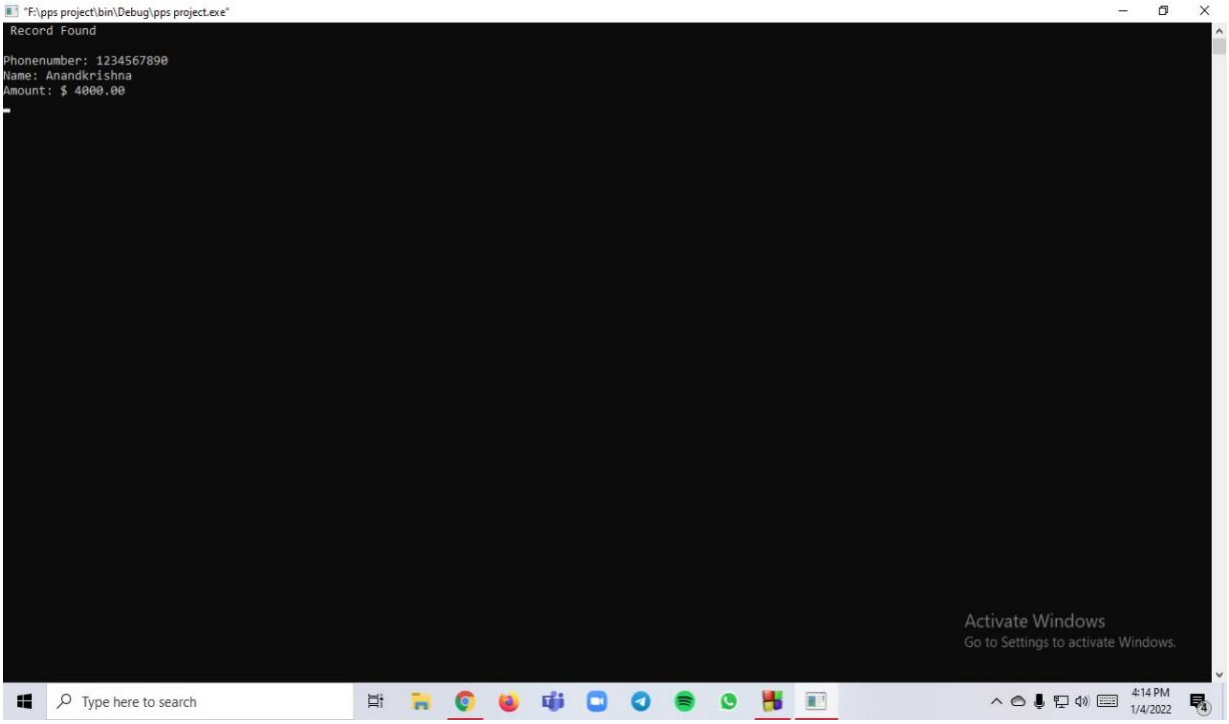

"F:\pps project\bin\Debug\pps project.exe"
Enter phone number:1234567890
Enter name: Anandkrishna
Enter amount:
Activate Windows
Go to Settings to activate Windows.
Type here to search
4:13 PM
1/4/2022

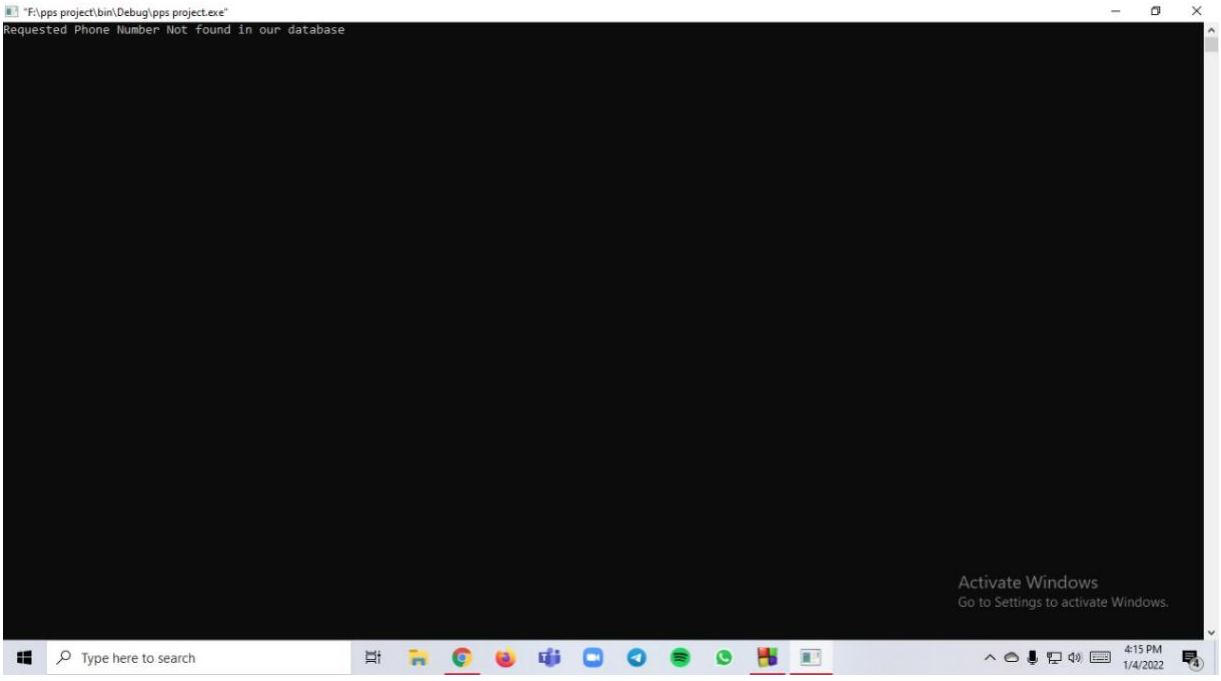

"F:\pps project\bin\Debug\pps project.exe"
Enter phone number of the subscriber for payment
Activate Windows
Go to Settings to activate Windows.
Type here to search
4:13 PM
1/4/2022

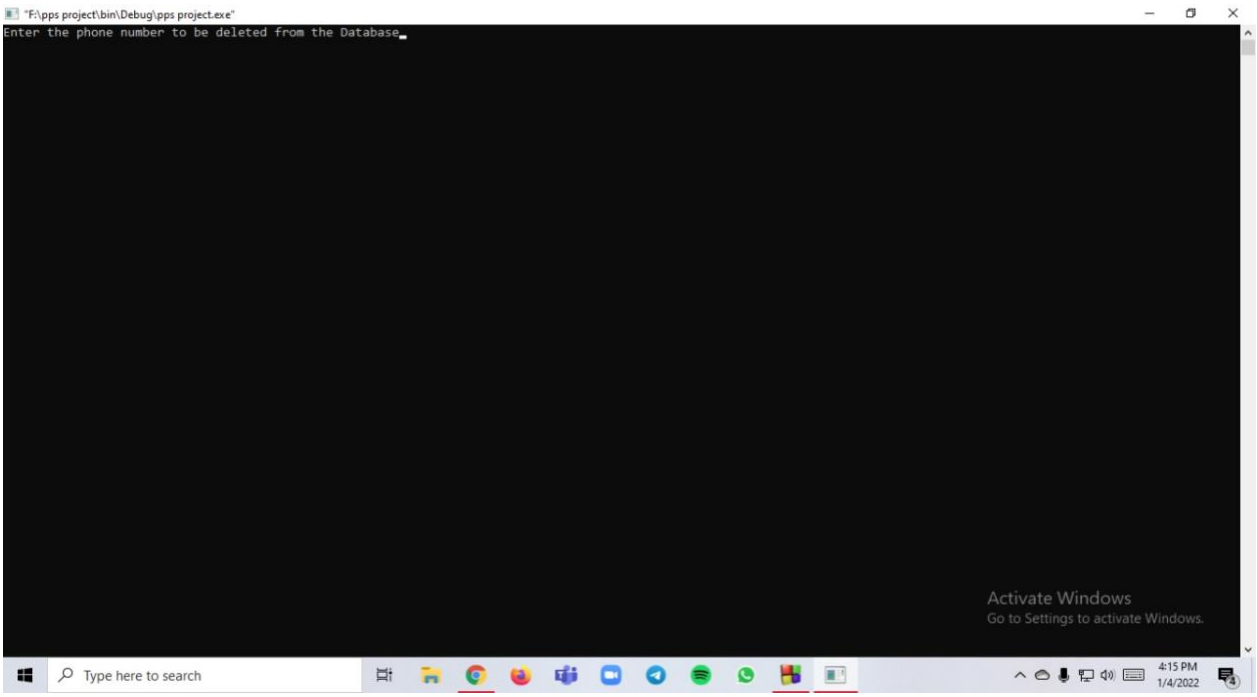

"F:\pps project\bin\Debug\pps project.exe"
Phone No.: 9888998889
Name: Ankith
Current amount: 2000.000000
Enter amount of payment :
Activate Windows
Go to Settings to activate Windows.
Type here to search
4:14 PM
1/4/2022

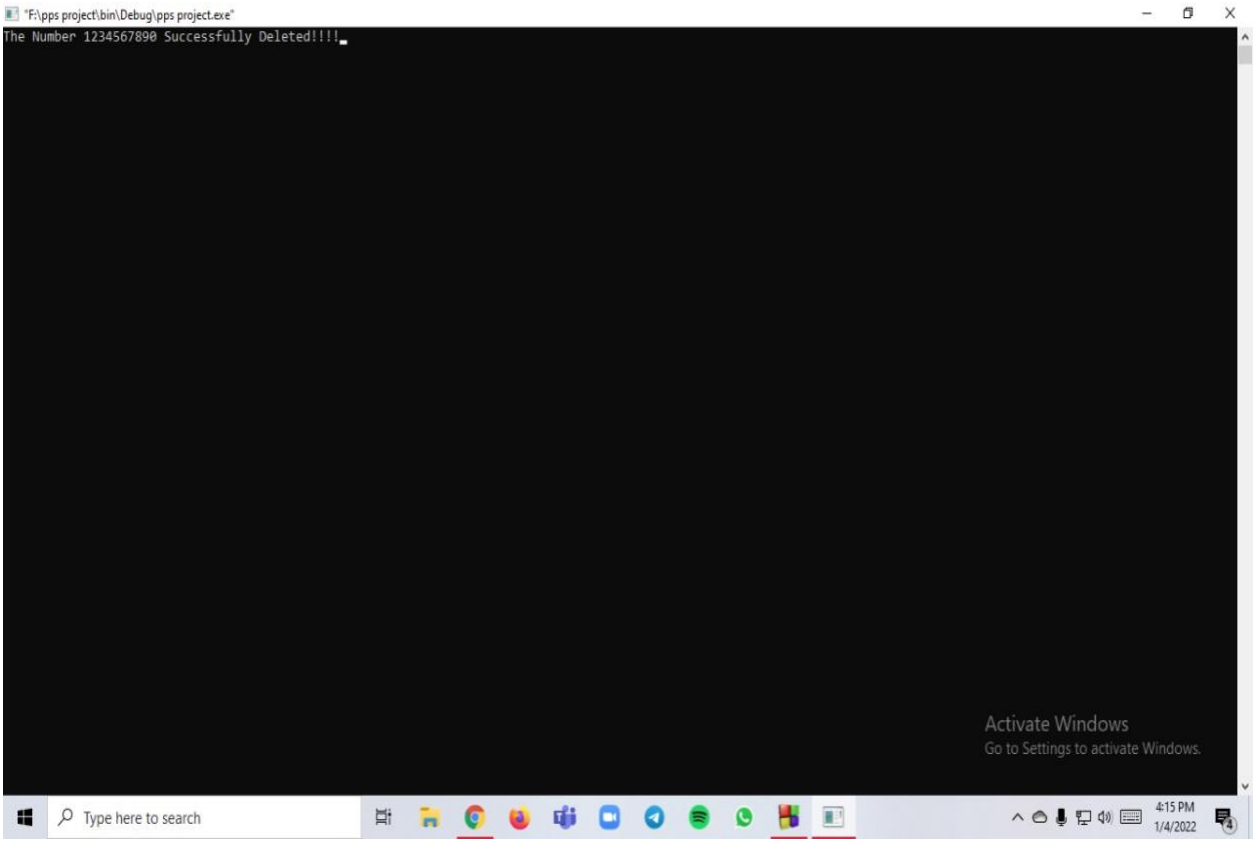

"F:\pps project\bin\Debug\pps project.exe"
THANK YOU Ankith FOR YOUR TIMELY PAYMENTS
Activate Windows
Go to Settings to activate Windows.
Type here to search
4:14 PM
1/4/2022

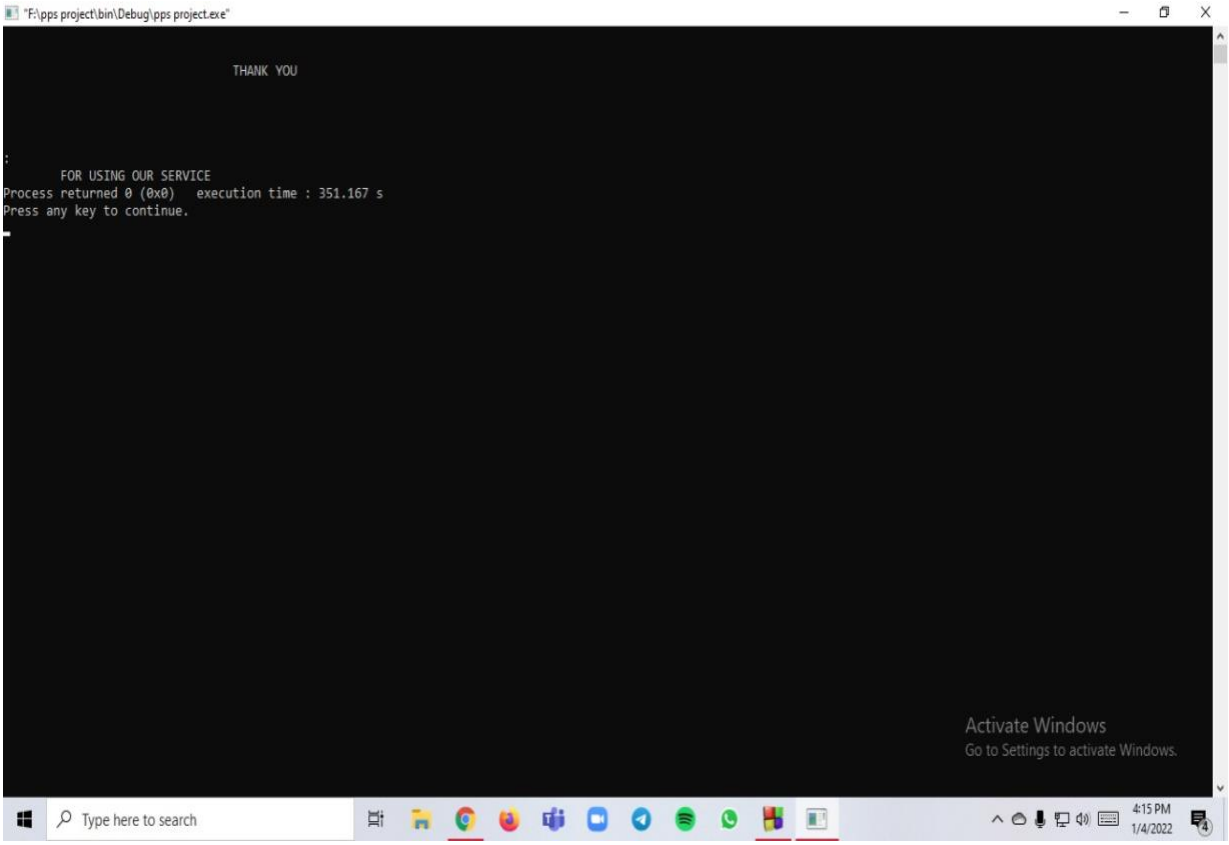

"F:\pps project\bin\Debug\pps project.exe"
Enter Phone Number to search in our database
Activate Windows
Go to Settings to activate Windows.
Type here to search
4:14 PM
1/4/2022


"F:\pps project\bin\Debug\pps project.exe"
Record Found
Phonenumber: 1234567890
Name: Anandkrishna
Amount: $ 4000.00
Activate Windows
Go to Settings to activate Windows.
Type here to search
4:14 PM
1/4/2022


"F:\pps project\bin\Debug\pps project.exe"
Requested Phone Number Not found in our database
Activate Windows
Go to Settings to activate Windows.
Type here to search
4:15 PM
1/4/2022


"F:\pps project\bin\Debug\pps project.exe"
Enter the phone number to be deleted from the Database
Activate Windows
Go to Settings to activate Windows.
Type here to search
4:15 PM
1/4/2022


"F:\pps project\bin\Debug\pps project.exe"
The Number 1234567890 Successfully Deleted!!!!
Activate Windows
Go to Settings to activate Windows.
Type here to search
4:15 PM
1/4/2022


"F:\pps project\bin\Debug\pps project.exe"
THANK YOU
:
FOR USING OUR SERVICE
Process returned 0 (0x0) execution time : 351.167 s
Press any key to continue.
Activate Windows
Go to Settings to activate Windows.
Type here to search
4:15 PM
1/4/2022

RESULT

A telecom billing system has been created using c language. The source code provides expected output during runtime from the users.

CONCLUSION

Based on the computer program source code and output, customers can now have a mini statement of bills that contains the customer's name, phone number, duration of calls and amount immediately after calls. The implication of this research is that it could guarantee more security in GSM calls and help to strengthen their billing system output. Through this project we got acquainted with how we can develop bills of customers report in c program these types of projects also fulfil many of the given course outcomes as per the given syllabus of the course. Such type of project helps to build up our abilities so that we can implement it in the future.