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Vellore Institute of Technology
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Fall Semester 2020-21
C Application Project Report
Advance C Programming
DA-4

Project Title : TELECOM BILLING SYSTEM

Team Members:

- 1. SHIVAM CHAHAR – 19BCT0234**
- 2. PRITH SHARMA – 19BCT0097**
- 3. PRATHYUSH – 19BDS0106**

Faculty In-charge: DR. R MANJULA, SCOPE, VIT



Project Abstract

Telecom Billing System is based on a concept to generate telecom office record just like the actual system, to add, update and maintain their daily records. Users can use this system to Add, List, Modify, delete record as well as the program contains Payment system which helps the users for the bill payments. All the records can be managed and payments can be done with in high efficiency. The program is coded in 'C' Programming language & different variables and strings have been used for the development of this project. It's easy and very well formatted to operate and understand by users. The program is very interactive and intuitive

Features of this program:

1. Login with authentication
2. Payments through the system
3. arrangement of records using file handling
4. add, modify, remove, list records

Overall description about the project

A structure with three members phonenumber, name, amount is created first to store the phone number, name and the balance of users.

MODULE 0:

Essential functions and header files are included such as windows.h, gotoxy(), sleep(),etc are used only for formatting and to make program more interactive

MODULE 1 (addRecords()):

This will take required data like phone number of the user, name of the user and amount which user initially wants to add in their account and will save all this information into a file named records_LIST.txt .

MODULE 2 (ListRecords()):

This will read the saved information in file records_LIST.txt and will show all the details of all the users.

MODULE 3 (ModifyRecord()):

This will first take the phone number (unique identifier) from the user and then will search for the exact same phone number in file records_LIST.txt if found it will redirect to add new information about that user and if not found then then it will return back to main menu.

MODULE 4(DeleteRecord()):

This will take the phone number (unique identifier) and then search for that phone number in file records_LIST.txt and if found it will delete the record and if not found it will return to main menu.

MODULE 5(SearchRecord()):

This function takes phone number as input and then search for it in the saved file that is records_LIST.txt

MODULE 6(Payment()):

This will take the phone number first and then search for that number and if found then it will show the user details and will give the option to make payment. If the user makes the payment then the amount which user paid would be deducted from the remaining balance in the user's account.

MODULE 7(Login()):

This module is used for authentication before entering into the system. User need to give login credentials and if the login credential matches then the user will be allowed to enter into the system otherwise not and if the user give wrong login credentials 4 times then the program will close.

MODULE 8(displaypictures(),print image professor(),print thank you message(),projectdisplay())

All these are used to print welcoming screens and to convert the image to ASCII art and to read it.

Result (Output Screenshot)

Code is after Result

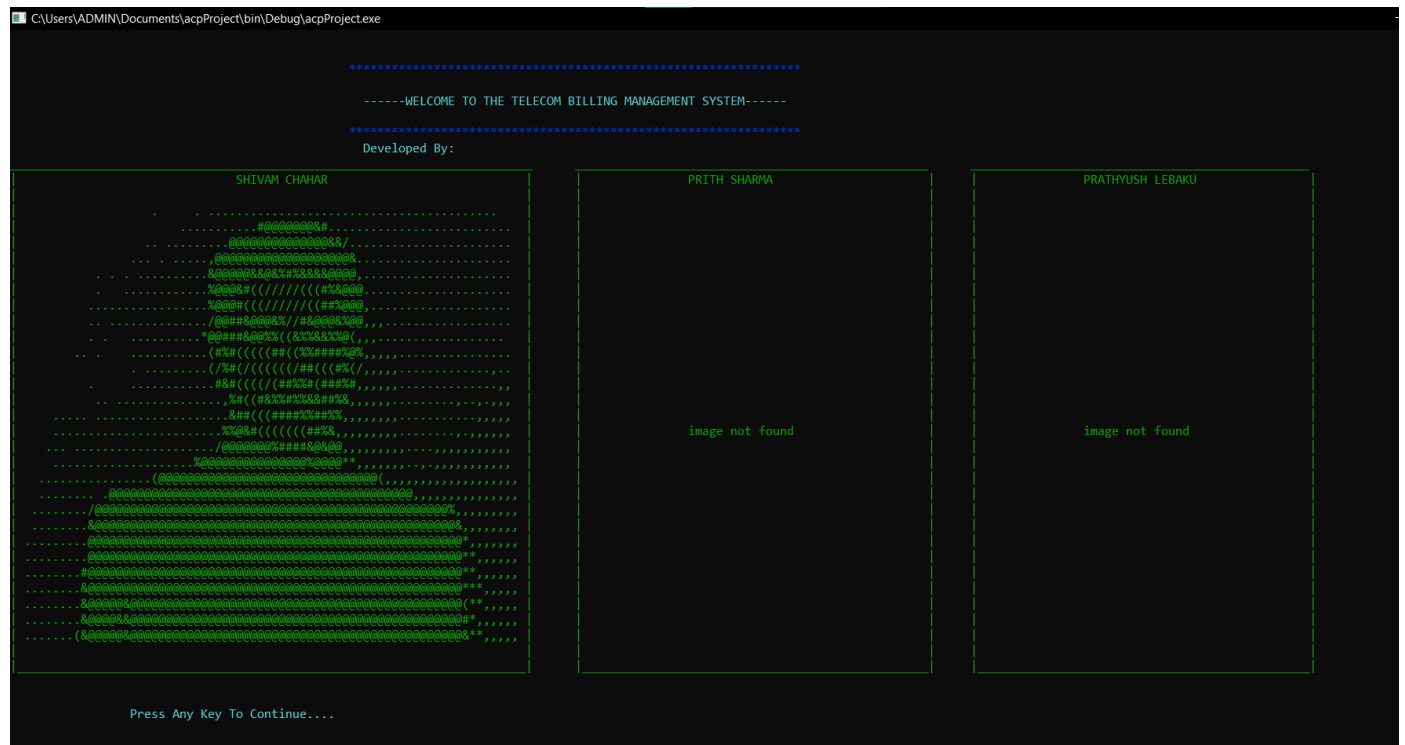
Project Welcome Screen:

DR. MANJULA R image is converted into ASCII art and then used

[illegible]

Developed By Screen:

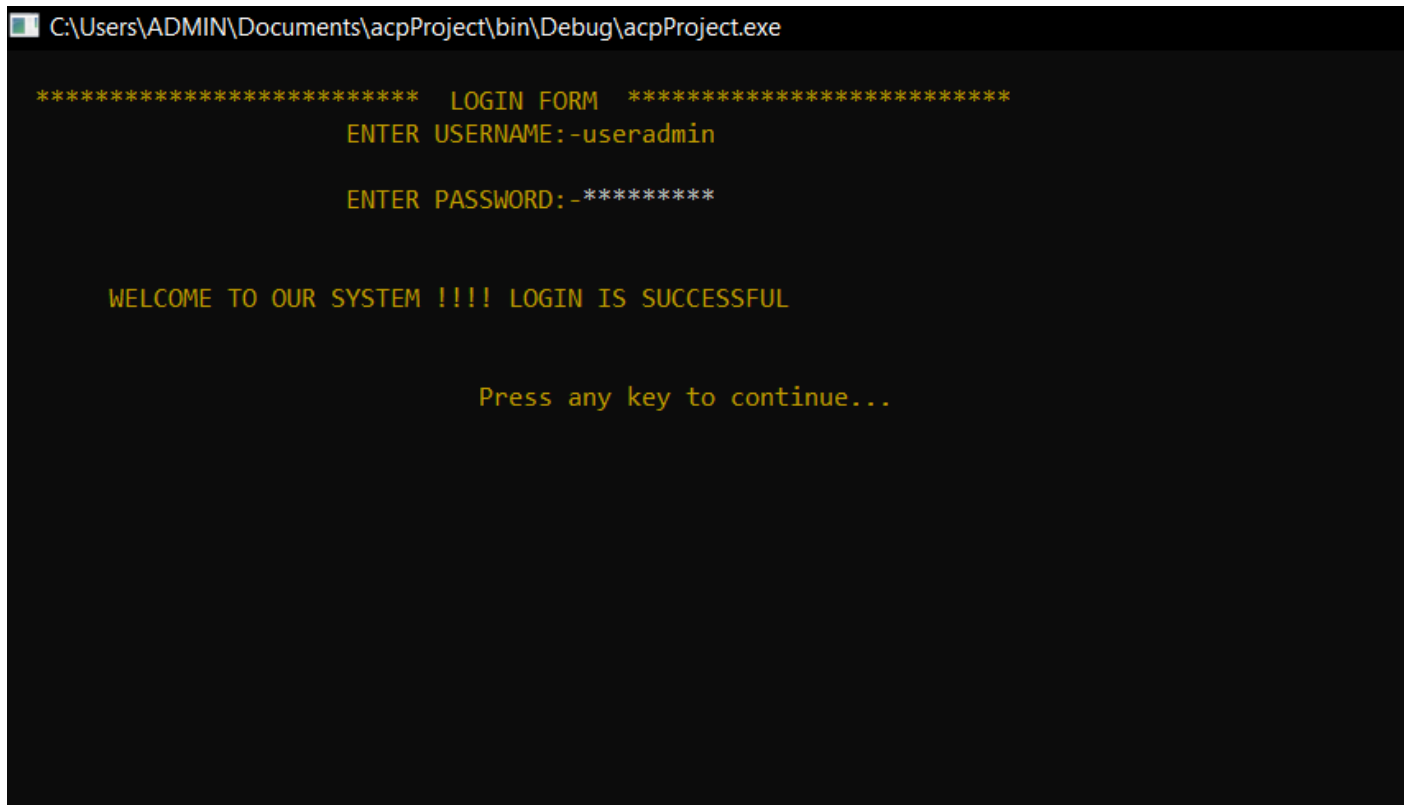
Same method is used the image of everyone in group is converted into ASCII art and then used with their names above each image



Authentication process before entering the system:

Username is useradmins and password is passadmin

If the user passes the authentication:



```
C:\Users\ADMIN\Documents\acpProject\bin\Debug\acpProject.exe

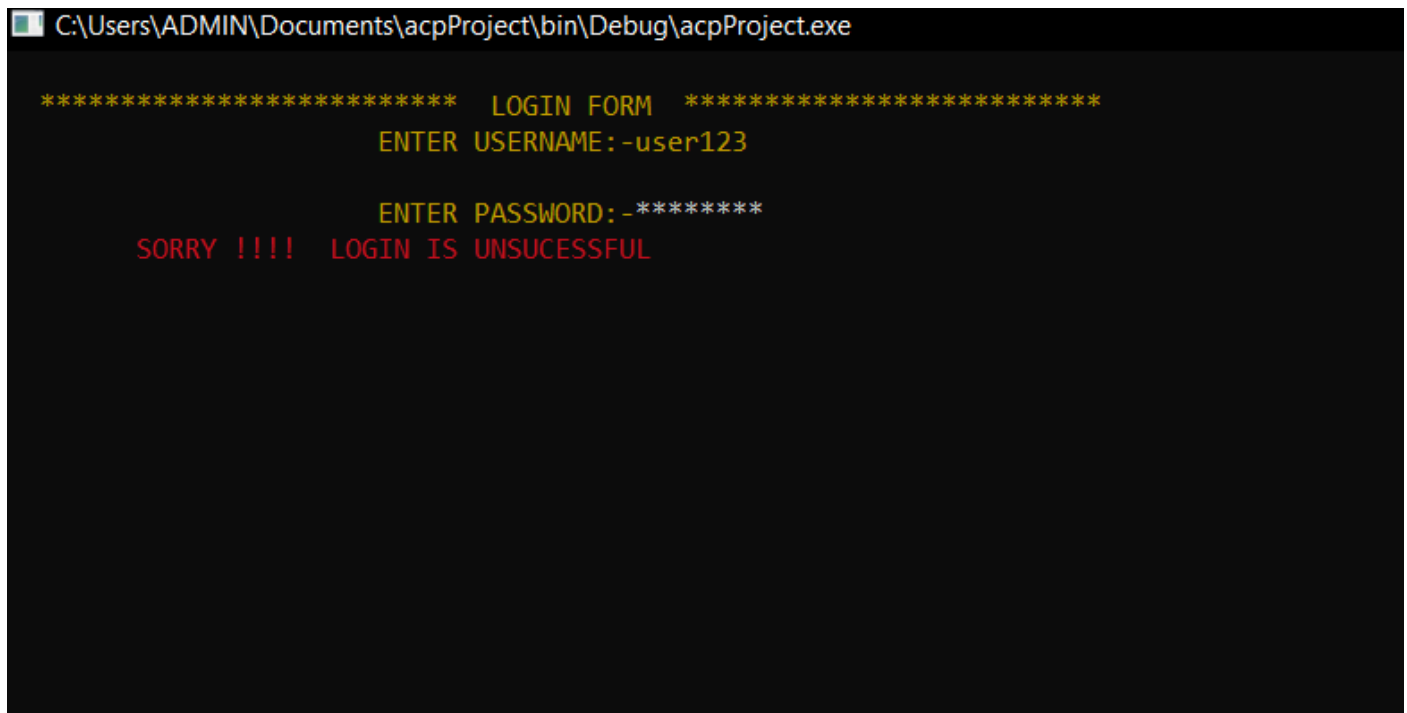
***** LOGIN FORM *****
ENTER USERNAME:-useradmin

ENTER PASSWORD:-*****

WELCOME TO OUR SYSTEM !!!! LOGIN IS SUCCESSFUL

Press any key to continue...
```

If the authentication fails:



```
C:\Users\ADMIN\Documents\acpProject\bin\Debug\acpProject.exe

***** LOGIN FORM *****
ENTER USERNAME:-user123

ENTER PASSWORD:-*****
SORRY !!!! LOGIN IS UNSUCCESSFUL
```

If authentication fails 4 times then application will close

C:\Users\ADMIN\Documents\acpProject\bin\Debug\acpProject.exe

Sorry you have entered the wrong username and password for four times!!!

Menu After successful authentication

C:\Users\ADMIN\Documents\acpProject\bin\Debug\acpProject.exe

TELECOM BILLING MANAGMENT CONSOLE

1 : Add New Records.

2 : List Of Records

3 : Modify Records.

4 : For Payment

5 : Search Records.

6 : Delete Records.

7 : Exit

Enter Your Choice:-

Add New Records Menu

```
C:\Users\ADMIN\Documents\acpProject\bin\Debug\acpProject.exe

Enter phone number: 9910818777

Enter name: Shivam

Enter amount: 999

Record Is Successfully Added
Press esc Key to exit or Press any other key to add other record:
```

List of Records Screen

```
C:\Users\ADMIN\Documents\acpProject\bin\Debug\acpProject.exe

Phone Number      User Name      Amount
-----
9599967688        Shivam         Rs. 999.00 /-
9910919755        Prith          Rs. 599.00 /-
999577789         Pyush          Rs. 799.00 /-
-----

Press Any Key To Go Back
```

Modify Record Screen

```
C:\Users\ADMIN\Documents\acpProject\bin\Debug\acpProject.exe

Enter phone number of the subscriber to modify: 9910919745
```


Payments Screen

C:\Users\ADMIN\Documents\acpProject\bin\Debug\acpProject.exe

Enter phone number of the subscriber for payment: 9996667778

DETAILS

Phone No.: 9996667778

Name: Shivam

Current amount: 899.000000

Enter amount of payment: 899

System Message: THANK YOU Shivam FOR YOUR TIMELY PAYMENTS!!

Search Screen after completing the payment

C:\Users\ADMIN\Documents\acpProject\bin\Debug\acpProject.exe

Record Found

Phonenumber: 9996667778

Name: Shivam

Amount: Rs.0.00

Delete Record Screen

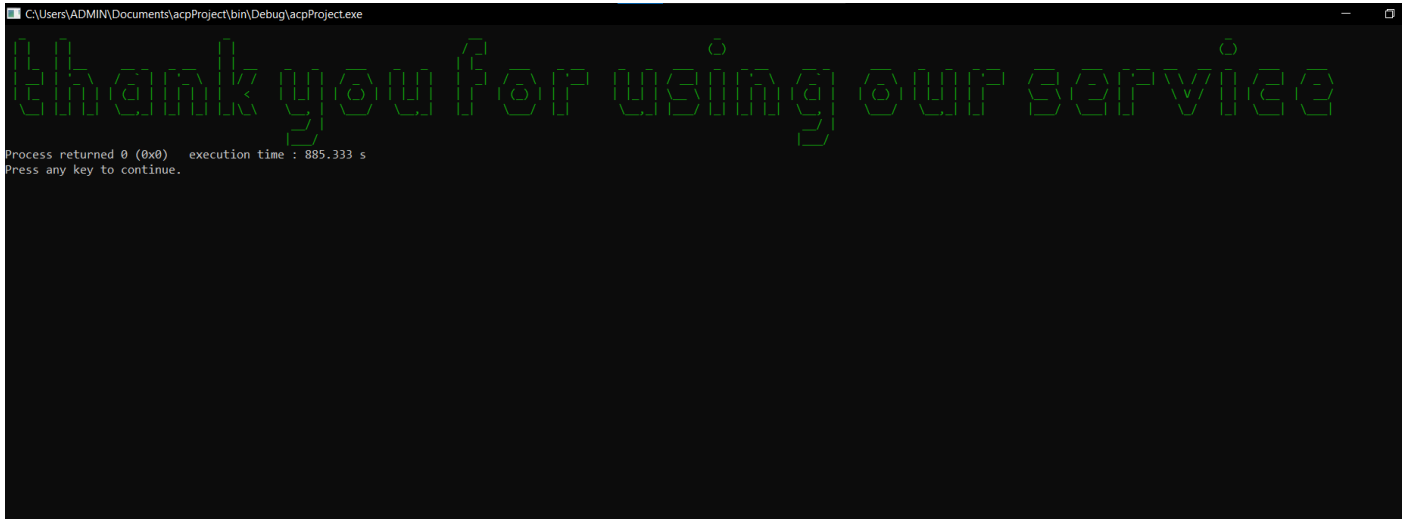
C:\Users\ADMIN\Documents\acpProject\bin\Debug\acpProject.exe

Enter the phone number to be deleted from the Database: 9996667778

Record deleted successfully.

Do you want to delete another record (y/n):

Exit Screen



Project Code

From next page

```

1 #include<stdio.h>
2 #include<conio.h>
3 #include<windows.h>
4
5 #include<stdlib.h>
6 #include <ctype.h>
7 #define MAX_LEN 128
8 struct subscriber
9 {
10     char phonenumber[20];
11     char name[50];
12     float amount;
13 }s;
14
15 void gotoxy(int,int);
16 void addrecords();
17 void listrecords();
18 void modifyrecords();
19 void deleterecords();
20 void searchrecords();
21 void payment();
22 void login();
23 void displaypictures();
24 void print_image(FILE *fptr);
25 void print_image_professor(FILE *fptr);
26 void print_thank_you_message(FILE *fptr);
27 void projectdisplay();
28
29 char get;
30 int main()
31 {
32     int password;
33     int phonenumber;
34     char choice;
35     projectdisplay();
36     system("cls");
37     system("color 0");
38     gotoxy(10,2);
39     system("cls");
40     system("color 0F");
41     gotoxy(0,2);
42     printf("\033[0;34m");
43     printf("\t\t\t\t\t*****");
44     printf("\033[0m");
45     printf("\033[1;36m");
46     printf("\n\n\t\t\t\t\t -----WELCOME TO THE TELECOM BILLING MANAGEMENT SYSTEM-----\n");
47     printf("\033[0m");
48     printf("\033[0;34m");
49     printf("\n\t\t\t\t\t*****");
50     printf("\033[0m");
51     displaypictures();
52     printf("\033[1;36m");
53     printf("\n\n\n\t\t\t Press Any Key To Continue.... ");
54     printf("\033[0m");
55     Sleep(0);
56     getch();
57     system("cls");
58     login();
59     system ("color 0F");
60
61     system("cls");
62     system ("color 0F");
63     gotoxy(30,0);
64     system("color 0F");
65     printf("\033[0;33m");
66     printf("\n\n TELECOM BILLING MANAGMENT CONSOLE ");
67     printf("\033[0m");
68
69     while (1){
70         printf("\033[0;33m");
71         printf("\n\n 1 : Add New Records.\n\n 2 : List Of Records");
72         printf("\n\n 3 : Modify Records.\n\n 4 : For Payment");
73         printf("\n\n 5 : Search Records.");
74         printf("\n\n 6 : Delete Records.\n\n 7 : Exit\n");
75         printf("\n Enter Your Choice:-");
76         printf("\033[0m");
77         choice=getche();
78         choice=toupper(choice);
79         switch(choice)
80         {
81             case '1':
82                 addrecords();break;
83             case '2':
84                 listrecords();break;
85             case '3':
86                 modifyrecords();break;
87             case '4':
88                 payment() ;break;
89             case '5':
90                 searchrecords() ;break;
91             case '6':
92                 deleterecords();break;
93             case '7':
94                 system("cls");
95                 printf("\033[0;32m");
96                 display_thankyou_message();

```

```

96         printf("\033[0m");
97         Sleep(2000);
98         exit(0);
99         break;
100     default:
101         system("cls");
102         system("color 0F");
103         gotoxy(30,20);
104         printf("Incorrect Input");
105         printf("\a.....");
106         gotoxy(30,24);
107         printf("Any key to continue");
108         getch();
109     }
110 }
111 }
112 COORD coord = {0, 0};
113 // sets coordinates to 0,0
114 //COORD max_buffer_size = GetLargestConsoleWindowSize(hOut);
115 COORD max_res,cursor_size;
116 void gotoxy (int x,int y)
117 {
118
119     coord.X = x; coord.Y = y;
120     // X and Y coordinates
121
122     SetConsoleCursorPosition(GetStdHandle(STD_OUTPUT_HANDLE), coord);
123 }
124
125 void addrecords()
126 {
127     FILE *f;
128     char test;
129     f=fopen("records_LIST.txt","ab+");
130     if(f==0)
131     {
132         f=fopen("records_LIST.txt","wb+");
133         system("cls");
134         printf("Please wait while we configure your computer");
135         printf("\npress any key to continue");
136         getch();
137     }
138     while(1)
139     {
140         printf("\033[0;33m");
141         system("cls");
142         printf("\n Enter phone number: ");
143         scanf("%s",&s.phonenumber);
144         printf("\n Enter name: ");
145         fflush(stdin);
146         scanf("%s",&s.name);
147         printf("\n Enter amount: ");
148         scanf("%f",&s.amount);
149         fwrite(&s,sizeof(s),1,f);
150         fflush(stdin);
151         printf("\n Record Is Successfully Added");
152         printf("\n Press esc Key to exit or Press any other key to add other record:");
153         printf("\033[0;33m");
154         test=getche();
155         if(test==27)
156             break;
157     }
158     fclose(f);
159     system("cls");
160 }
161 void listrecords()
162 {
163     printf("\033[0;33m");
164     FILE *f;
165     int i;
166     if((f=fopen("records_LIST.txt","rb"))==NULL)
167         exit(0);
168     system("cls");
169     printf("Phone Number\t\tUser Name\tAmount\n");
170     for(i=0;i<79;i++)
171     {
172         printf("-");
173         while(fread(&s,sizeof(s),1,f)==1)
174         {
175             printf("\n%s\t\t%s\t\tRs. %.2f /-",s.phonenumber,s.name,s.amount);
176         }
177         printf("\n");
178         for(i=0;i<79;i++)
179             printf("-");
180     }
181     fclose(f);
182     printf("\n\nPress Any Key To Go Back");
183     getch();
184     printf("\033[0m");
185     system("cls");
186 }
187 void deleterecords()
188 {
189     printf("\033[0;33m");
190     FILE *f,*t;
191     char phonenumber[20];
192     system("cls");
193     f=fopen("records_LIST.txt","rb+");

```

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191 t=fopen("pro1.txt", "wb+");
192 do{
193     rewind(f);
194     printf("Enter the phone number to be deleted from the Database: ");
195     scanf("%s", phonenumber);
196     while(fread(&s, sizeof(s), 1, f)==1)
197     {
198         if(strcmp(s.phonenumber, phonenumber)!=0)
199             fwrite(&s, sizeof(s), 1, t);
200     }
201     else
202         printf("Record deleted successfully.");
203 }
204
205 fclose(f);
206 fclose(t);
207 remove("pro1.txt");
208 rename("pro1.txt", "pro.txt");
209
210 f=fopen("pro.txt", "rb+");
211 t=fopen("pro1.txt", "wb+");
212 printf("\nDo you want to delete another record (y/n):");
213 fflush(stdin);
214 }
215 while(getche()=='y' || getche()=='Y');
216 fclose(f);
217 getch();
218 printf("\033[0m");
219 system("cls");
220 }
221
222 void searchrecords()
223 {
224     printf("\033[0;33m");
225     FILE *f;
226     char phonenumber[20];
227     int flag=1;
228     f=fopen("records_LIST.txt", "rb+");
229
230     fflush(stdin);
231     system("cls");
232     printf("Enter Phone Number to search in our database: ");
233     scanf("%s", phonenumber);
234     while(fread(&s, sizeof(s), 1, f)==1)
235     {
236         if(strcmp(s.phonenumber, phonenumber)==0)
237         {
238             system("cls");
239             printf("Record Found ");
240             printf("\n\nPhonenumber: %s\nName: %s\nAmount: Rs.%0.2f\n", s.phonenumber, s.name, s.amount);
241             flag=0;
242             break;
243         }
244         else if(flag==1)
245         {
246             system("cls");
247             printf("Requested Phone Number Not found in our database");
248         }
249     }
250     getch();
251     printf("\033[0m");
252     fclose(f);
253     system("cls");
254 }
255
256 void modifyrecords()
257 {
258     printf("\033[0;33m");
259     FILE *f;
260     char phonenumber[20];
261     long int size=sizeof(s);
262     if((f=fopen("records_LIST.txt", "rb+"))==NULL)
263         exit(0);
264     system("cls");
265     printf("Enter phone number of the subscriber to modify: ");
266     scanf("%s", phonenumber);
267     fflush(stdin);
268     while(fread(&s, sizeof(s), 1, f)==1)
269     {
270         if(strcmp(s.phonenumber, phonenumber)==0)
271         {
272             system("cls");
273             printf("\n Enter phone number: ");
274             scanf("%s", &s.phonenumber);
275             printf("\n Enter name: ");
276             fflush(stdin);
277             scanf("%[^\n]", &s.name);
278             printf("\n Enter amount: ");
279             scanf("%f", &s.amount);
280             fseek(f, -size, SEEK_CUR);
281             fwrite(&s, sizeof(s), 1, f);
282             break;
283         }
284     }
285     printf("\033[0m");
286     fclose(f);
287     system("cls");
288 }

```

```

286 void payment()
287 {
288     printf("\033[0;33m");
289     FILE *f;
290     char phonenumber[20];
291     long int size=sizeof(s);
292     float amt;
293     int i;
294     if((f=fopen("records_LIST.txt","rb+"))==NULL)
295         exit(0);
296     system("cls");
297     printf("Enter phone number of the subscriber for payment: ");
298     scanf("%s",phonenumber);
299     fflush(stdin);
300     while(fread(&s,sizeof(s),1,f)==1)
301     {
302         if(strcmp(s.phonenumber,phonenumber)==0)
303         {
304             printf("\n ***DETAILS***");
305             printf("\n Phone No.: %s",s.phonenumber);
306             printf("\n Name: %s",s.name);
307             printf("\n Current amount: %f",s.amount);
308             printf("\n");
309             for(i=0;i<79;i++)
310                 printf("-");
311             printf("\n\nEnter amount of payment: ");
312             fflush(stdin);
313             scanf("%f",&amt);
314             s.amount=s.amount-amt;
315             fseek(f,-size,SEEK_CUR);
316             fwrite(&s,sizeof(s),1,f);
317             break;
318         }
319     }
320     printf("\n\n");
321     printf("System Message: THANK YOU %s FOR YOUR TIMELY PAYMENTS!!",s.name);
322     getch();
323     printf("\033[0m");
324     fclose(f);
325     system("cls");
326 }
327 void login()
328 {
329     int a=0,i=0;
330     char uname[10],c=' ';
331     char pword[10],code[10];
332     char user[10]="useradmin";
333     char pass[10]="passadmin";
334     do
335     {
336         printf("\033[0;33m");
337         printf("\n ***** LOGIN FORM ***** ");
338         printf("\n          ENTER USERNAME:-");
339         scanf("%s", &uname);
340         printf("\n          ENTER PASSWORD:-");
341         printf("\033[0m");
342         while(i<10)
343         {
344             pword[i]=getch();
345             c=pword[i];
346             if(c==13) break;
347             else printf("*");
348             i++;
349         }
350         pword[i]='\0';
351         //char code=pword;
352         i=0;
353         //scanf("%s",&pword);
354         if(strcmp(uname,"useradmin")==0 && strcmp(pword,"passadmin")==0)
355         { printf("\033[0;33m");
356           printf("\n\n          WELCOME TO OUR SYSTEM !!!! LOGIN IS SUCCESSFUL");
357           printf("\n\n\n\t\t\t\t\tPress any key to continue...");
358           printf("\033[0m");
359           getch();//holds the screen
360           break;
361         }
362         else
363         {
364             printf("\033[0;31m");
365             printf("\n          SORRY !!!! LOGIN IS UNSUCCESSFUL");
366             a++;
367             printf("\033[0m");
368             getch();//holds the screen
369             system("cls");
370         }
371     }
372 }
373 while(a<=2);
374 if (a>2)
375 {
376     printf("\033[0;31m");
377     printf("\nSorry you have entered the wrong username and password for four times!!!");
378     printf("\033[0m");
379     getch();
380 }

```

```

381     }
382     system("cls");
383 }
384 void projectdisplay(){
385     system("cls");
386     system("color 0");
387     gotoxy(10,2);
388     system("cls");
389     system("color 0F");
390     gotoxy(0,2);
391     printf("\033[0;34m");
392     printf("\t\t\t\t\t*****");
393     printf("\033[0m");
394     printf("\033[1;36m");
395     printf("\n\t\t\t\t\t-----Advance C Programming Project-----");
396     printf("\033[0m");
397     printf("\033[0;34m");
398     printf("\n\t\t\t\t\t*****");
399     printf("\033[0m");
400     printf("\033[0;34m");
401     printf("\n\t\t\t\t\t*****");
402     printf("\033[0m");
403     printf("\033[1;36m");
404     printf("\n\t\t\t\t\tUnder the Guidance of :-");
405     printf("\n\t\t\t\t\tDR. MANJULA R\n");
406     printf("\033[0m");
407     printf("\033[1;31m");
408     display_professor();
409     printf("\033[0m");
410     printf("\033[0;34m");
411     printf("\n\t\t\t\t\t*****");
412     printf("\033[0m");
413     printf("\033[1;36m");
414     printf("\n\t\t Press Any Key To Continue.... ");
415     printf("\033[0m");
416     Sleep(0);
417     getch();
418     system("cls");
419 }
420 void print_thank_you_message(FILE *fptr)
421 {
422     char read_string[MAX_LEN];
423     while(fgets(read_string,sizeof(read_string),fptr) != NULL)
424         printf("%s",read_string);
425 }
426 }
427 void print_image(FILE *fptr)
428 {
429     char read_string[MAX_LEN];
430     while(fgets(read_string,sizeof(read_string),fptr) != NULL){
431         printf("\033[0;32m");
432         printf("%s",read_string);
433         printf("\033[0m");
434     }
435 }
436 }
437 void print_image_professor(FILE *fptr)
438 {
439     char read_string[MAX_LEN];
440     while(fgets(read_string,sizeof(read_string),fptr) != NULL)
441         printf("\t\t\t\t\t%s",read_string);
442 }
443 }
444 void displaypictures(){
445     printf("\033[1;36m");
446     printf("\n\t\t\t\t\tDeveloped By:\n");
447     printf("\033[0m");
448     char *filename = "shivam.txt";
449     FILE *fptr = NULL;
450     if((fptr = fopen(filename,"r")) == NULL)
451     {
452         fprintf(stderr,"error opening %s\n",filename);
453         return 1;
454     }
455 }
456 
457 print_image(fptr);
458 
459 fclose(fptr);
460 }
461 void display_professor(){
462     char *filename = "professor.txt";
463     FILE *fptr = NULL;
464     if((fptr = fopen(filename,"r")) == NULL)
465     {
466         fprintf(stderr,"error opening %s\n",filename);
467         return 1;
468     }
469 }
470 
471 print_image_professor(fptr);
472 
473 fclose(fptr);
474 }
475 void display_thankyou_message(){

```

```
476 char *filename = "thankmessage.txt";
477 FILE *fptr = NULL;
478
479 if((fptr = fopen(filename,"r")) == NULL)
480 {
481     fprintf(stderr,"error opening %s\n",filename);
482     return 1;
483 }
484
485 print_thank_you_message(fptr);
486
487 fclose(fptr);
488 }
489
```