

CYBER MANAGEMENT SYSTEM

A Mini Project

Academic Year: 2021 - 22 ODD SEMESTER

**BRANCH: B. TECH-COMPUTER SCIENCE ENGINEERING
WITH SPECIALIZATION IN ARTIFICIAL INTELLIGENCE
AND MACHINE LEARNING**

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Course Title : PROGRAMMING FOR PROBLEM SOLVING

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Aim & Abstract of the project:

Our project, Cyber Management System utilizes various features of C programming like Socket Multithreading, which helps us to connect a client to a server and more. This is a program which interconnects different computers, which allows users to communicate over the computer network and provide security from unauthorized users by a secure login system into the client server. Our project aims at managing the cyber cafe with multiple clients and to give the clients access of services that the cyber network can provide when someone logs in. The clients can log in as a member or guest and use the services that the cyber network is providing.

We will be using File handling as a database to store records. The whole project will be divided into parts, one for the client and one for the server. The different source codes in this project on Cyber Management System in will be: one for the client functions and other for the server functions. The server program is for managing settings and client requests whereas, the client program gives clients access to the various cyber services (by using .txt files).

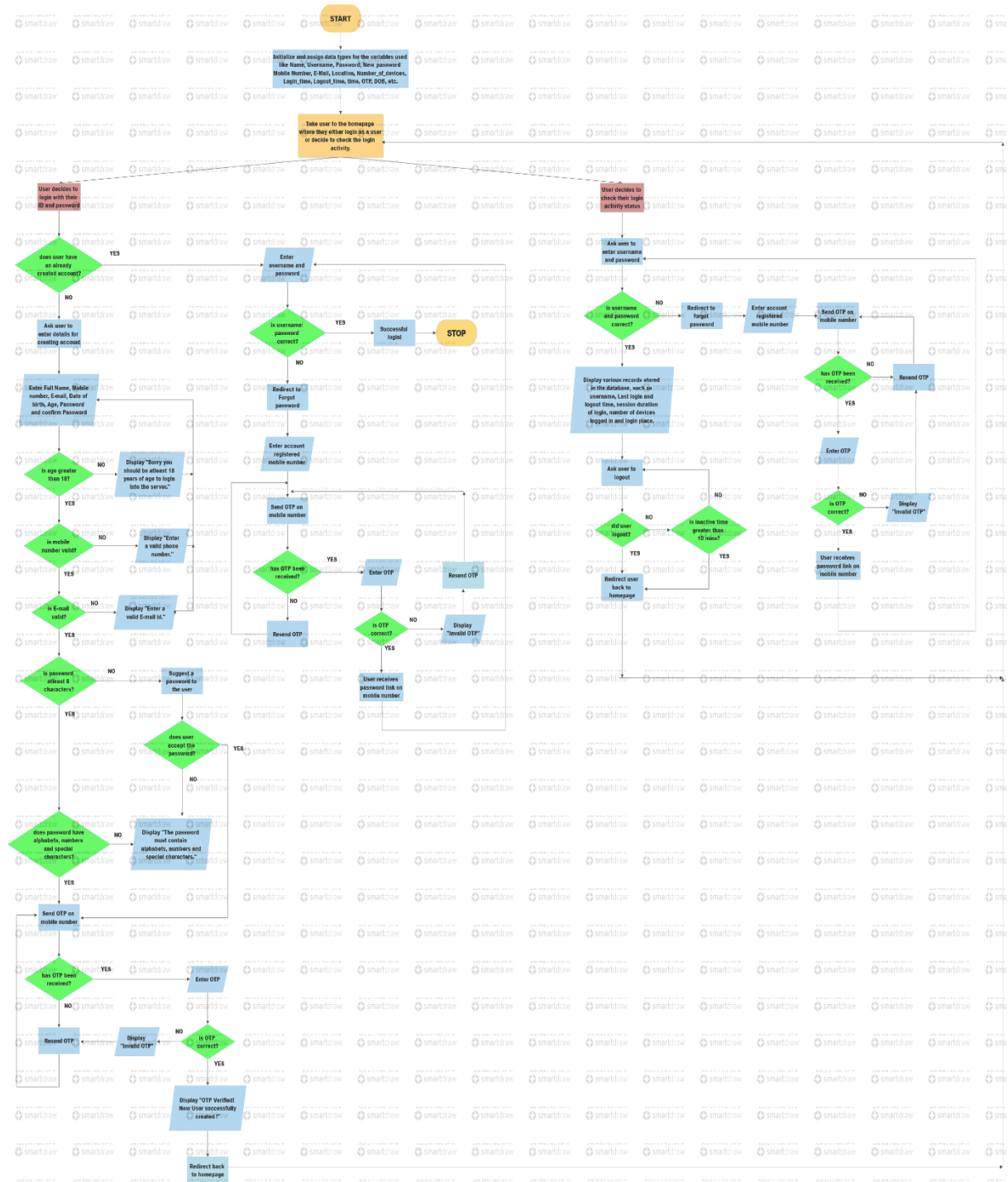
We will be providing a secure way for the users to log into their database or create a new login id. We will ask them to input the required personal details and suggest to create a safe and strong password which will be hidden, for their account. We will be using OTP generation as a two-step verification process to ensure enhanced security. On secure login, the user can utilize the available services. We will be using Visual Studio Code as the compiler for this project, which will be an interesting and fun experience.

Algorithm:

1. Start.
2. Declare variables with their data types; name, username, password, new_password, mobile number, e-mail, location, number_of_devices, login_time, time, DOB, OTP.
3. Display homepage where user decides whether they want to login into their account or see their login activity.
4. If option1 is opted, display login page asking for their ID and password.
5. Check if user has an already created account.
6. If YES display page to enter username and password and if NO, display a page to enter your details to create a new account.
7. In case of creating new account, read name, mobile number, email, DOB, password and confirm password.
8. If age is greater than 18, let user continue else, display "Sorry you should be at least 18 years of age to login into the server."
9. Check If mobile number and E-mail are valid, and if not, then ask user to enter a valid phone number and E-mail.
10. Check If password created is at least 8 characters and has alphabets, numbers and special characters else suggest a password to a user or display the error message.
11. Send an OTP to the user for final verification and creation of the account.
12. If the OTP is not received, resend it or in case of wrong OTP, display error message.
13. If correct OTP is entered, display "Successful Login created" and then redirect to homepage.

14. Now user id is created and they can login with it.
15. While logging in, if they forget the password, they can click on forgot password and enter registered mobile number.
16. On the registered mobile number, they will receive an OTP.
17. If OTP is received, enter it else, resend the OTP, from here they can proceed to verify it, and if correct, will receive a password reset link, from where they can update the password.
18. If option2 is opted to check the login activity, redirect user to second page.
19. Read username and password.
20. If username and password is correct display username, last login, logout time, session duration, number of devices logged in and login place.
21. After displaying the data, ask the user to logout.
22. Check if the user has been inactive for more than 10 minutes. If YES, automatically log them out and redirect the user to the homepage. If NO, ask the user to log out.
23. If entered username and password is wrong, redirect the user to the forgot password page. On the forgot password page, let the user enter registered number and send an OTP on it.
24. If received, verify the OTP, else resend it.
25. On successful OTP entering, send a reset password link to the user.
26. On password being updated, redirect the user back to the homepage for login.
27. Stop.

Flowchart:



(You can zoom into the image for more clarity)

We have attached a pdf separately for the flowchart for convenience and better clarity.

SOURCE CODE

We Have used Microsoft VS Code for this project and recommend to use the same compiler for optimal and accurate results. Also, while running the code, "cyber.txt" and "login.txt" files are also required to be simultaneously open, since some commands will not work without them. We will be

sharing the output screens for the results too.

Given below is the source code:

```
#include<stdio.h>
#include<conio.h>
#include<string.h>
#include<stdlib.h>
#include<time.h>
#include<math.h>
void heading();
void main_heading();
void menu();
void user_menu();
void insert();
void display();
void search();
void delete();
void arrival_time();
void user_login();
void login_user();
void main()
{
    char name[30];
    int id;
    int ch;
    char username[20];
    char password[20];

    system("CLS");
    system("color 86");
    heading();
    printf("\n\n\t\t\t\t\t 1.) Login as an Admin to check/edit records");
```

```
printf("\n\t\t\t\t\t 2.) Login as a user to view your records");
printf("\n\n\t\t\t\t\t          Enter your choice (1/2) : ");
scanf("%d",&ch);
system("CLS");

switch(ch)
{
    case 1:system("CLS");
        heading();
        printf("\n\n\t\t\t\t\t\t\t\t\t[   ADMIN LOGIN PAGE   ][\t\t\t\t\t]");
        printf("\n\n\n\t\t\t\t\t\t\t\tEnter your Username : ");
        scanf("%s",&username);
        printf("\t\t\t\t\t\t\tEnter your Password : ");
        scanf("%s",&password);

        if(strcmp(username, "Admin_55")==0) /*Admin_55 is userid which is fixed since it is admin login and not user login*/
        {
            if(strcmp(password , "Cyber@123")==0) /*Cyber@123 is password which is fixed since it is admin login and not user login*/
            {
                system("CLS");
                main_heading();
                printf("\n\n\t\t\t\t\t\t\t\t\t\t\tWELCOME ADMIN!! LOGIN SUCCESSFULL");
                menu();
            }
            else
            {
                printf("\t\t\t\t\t\t\tIncorrect Password !!! Failed to Login");
            }
        }
        else
        {
            printf("\t\t\t\t\t\t\tUsername is invalid !! Failed to Login!");
        }

        break;
    case 2:system("CLS");
        heading();
        int cho;
        printf("\n\n\t\t\t\t\t\t\t\t\t1.) Login into your account");
        printf("\n\t\t\t\t\t\t\t\t\t2.) New user? Sign up ");
        printf("\n\t\t\t\t\t\t\t\t\t\t\tEnter your Choice (1/2) : ");
```


[illegible]

[illegible]

```
printf("\n\n\t\t\t\t\tENTER NEW USER DATA :");
printf("\n\n\t\t\t\t\tEnter USER ID : ");
scanf("%d",&id);
fflush(stdin);
printf("\n\n\t\t\t\t\tEnter Name of the user : ");
scanf("%s",&name);
fflush(stdin);
fprintf(fp,"%d %s\t",id,name);
fprintf(fp,"%02d/%02d/%d %02d:%02d",current_time->tm_mday,current_time-
>tm_mon+1,current_time->tm_year+1900,current_time->tm_hour,current_time->tm_min);
fprintf(fp,"\n");
arrival_time();
printf("\n\n\t\t\t\t\tUSER RECORD HAS BEEN INSERTED SUCCESSFULLY !!");

printf("\n\n\t\t\t\t\tDo you want to add another record ? (y/n) : ");
scanf("%c",&choice);
fflush(stdin);
system("CLS");
fflush(stdin);
}
fclose(fp);
printf("\n\n\t\t\t\t\tPress any key to continue ");
getchar();
menu();
}

void display()
{
    int duration,tothr;
    int totmin;
    time_t mytime;
    struct tm* current_time;
    mytime = time(NULL);
    current_time = localtime(&mytime);
    FILE *fp;
    fp = fopen("cyber.txt","rb");

    if(fp==NULL)
    {
        printf("\n\t\t\t\t\tERROR OPENING FILE !!!");
        return;
    }
    char name[30];
    int id;
```

```
int mday,mmon,myear,mmin,mhour;
printf("\n\n\t\t\t\t\t USER DETAILS ARE AS FOLLOWS :\n");
//printf("\n\t\t\t\t\t _____\n\n\t\t\t\t\t ");
printf("\n\n\t\t\t\t\t User ID\t\tName of the User\tDate\tTime\t Duration");
//printf("\n\t\t\t\t\t _____\n\n\t\t\t\t\t ");

while(fscanf(fp,"%d %s %02d/%02d/%d
%02d:%02d",&id,&name,&mday,&mmon,&myear,&mhour,&mmin)!=EOF)
{
    printf("\n\n\t\t\t\t\t %d \t\t\t\t\t s \t\t\t\t\t %02d/%02d/%d
\t\t\t\t\t %02d:%02d",id,name,mday,mmon,myear,mhour,mmin);
    tothr =(((current_time->tm_hour*60)+(current_time->tm_min))-
((mhour*60)+mmin));
    duration = tothr/60;
    totmin = tothr-(duration*60);
    printf("\t %dHr:%dMin",duration,totmin);
}
fclose(fp);
}

void search()
{
    system("CLS");
    main_heading();
    int my_id,flag=0;
    int duration,tothr,totmin;
    time_t mytime;
    struct tm* current_time;
    mytime = time(NULL);
    current_time = localtime(&mytime);
    FILE *fp;
    char name[30];
    int id;
    int mday,mmon,myear,mmin,mhour;
    fp = fopen("cyber.txt","rb");
    if(fp==NULL)
    {
        printf("\n\t\t\t\t\t ERROR OPENING FILE !!!");
        return;
    }
    printf("\n\n\t\t\t\t\t Enter USER ID to fetch login information : ");
    scanf("%d",&my_id);
    while(fscanf(fp,"%d %s %02d/%02d/%d
%02d:%02d",&id,&name,&mday,&mmon,&myear,&mhour,&mmin)!=EOF)
```

```

{
    if(my_id == id)
    {
        flag=1;
        printf("\n\t\t\t\t\t RECORD FOUND SUCCESSFULLY !!");
        printf("\n\n\t\t\t\t\t User_ID : %d",id);
        printf("\n\t\t\t\t\t Name of User : %s",name);
        printf("\n\t\t\t\t\t Login Date And Time :
%02d/%02d/%d   %02d:%02d",mday,mmon,myear,mhour,mmin);
        tothr =(((current_time->tm_hour*60)+(current_time->tm_min))-
((mhour*60)+mmin));
        duration = tothr/60;
        totmin = tothr-(duration*60);
        printf("\n\t\t\t\t\t Duration : %dHr:%dMin",duration,totmin);
        if(tothr>300)
        {
            printf("\n\n\t\t\t\t\t ALERT!! SUSPICIOUS ACTIVITY,
\n\t\t\t\t\t SESSION DURATION TOO LONG!");
        }
        break;
    }
}

fclose(fp);
if(flag==0)
{
    printf("\n\t\t\t\t\t Record not found !!");
}

}

void delete()
{
    system("CLS");
    main_heading();
    FILE *fp,*ft;
    time_t mytime;
    struct tm* current_time;
    mytime = time(NULL);
    current_time = localtime(&mytime);
    int my_id;
    char name[30];
    int id;
    int mday,mmon,myear,mmin,mhour;
    unsigned flag=0;
    fp = fopen("cyber.txt","rb");

```

```

if(fp==NULL)
{
    printf("\n\t\t\t\t\tERROR OPENING FILE !!!");
    return;
}
printf("\n\n\t\t\t\t\t |----- PREVIOUS ENTERED DATA -----|");
display();
printf("\n\n\n\t\t\t\t\t Enter ID of the user which you want to delete : ");
scanf("%d",&my_id);

ft = fopen("cyber1.txt","wb");
if(ft==NULL)
{
    printf("\n\t\t\t\t\tERROR OPENING NEW FILE !!!");
}
while(fscanf(fp,"%d %s %02d/%02d/%d
%02d:%02d",&id,&name,&mday,&mmon,&myear,&mhour,&mmin)!=EOF)
{
    if(my_id!=id)
    {
        flag=1;
        fprintf(ft,"%d %s\t",id,name);
        fprintf(ft,"%02d/%02d/%d %02d:%02d",mday,mmon,myear,mhour,mmin);
        fprintf(ft,"\n");
    }
}
if(flag==0)
{
    printf("\n\t\t\t\t\tNo Such Record Found!!");
}
fclose(fp);
fclose(ft);
remove("cyber.txt");
rename("cyber1.txt","cyber.txt");
printf("\n\n\n\n\t\t\t\t\t Record Deleted Successfully!!");
printf("\n\n\n\t\t\t\t\t |----- Updated Records -----| ");
display();
printf("\n\n\n\t\t\t\t\t Press any key to Continue");
fflush(stdin);
getchar();
system("CLS");
main_heading();
menu();
}

```

```
void arrival_time()
{
    time_t rawtime;
    struct tm* timeinfo;
    struct tm* dateinfo;
    char buf[80];
    char buffer[80];
    FILE *fp;

    fp = fopen("cyber.txt", "ab+");

    time(&rawtime);
    timeinfo = localtime(&rawtime);
    dateinfo = localtime(&rawtime);

    strftime(buffer, 80, "%I:%M:%S", timeinfo);
    strftime(buf, 80, "%b %d, %Y", dateinfo);
    printf("\n\n\t\t\t\t\t Arrival Time : %s",buffer);
    printf("\t\t\t\t\t Date : %s",buf);
}

void user_login()
{
    char usern[20],pass[20];
    FILE *fp;
    fp=fopen("login.txt","ab+");
    printf("\n\n\t\t\t\t\t| CREATE NEW USER |");
    printf("\n\n\t\t\t\t\t Enter Username :");
    scanf("%s",&usern);
    printf("\n\t\t\t\t\t Enter Password : ");
    scanf("%s",&pass);
    fprintf(fp,"%s %s",usern,pass);
    fprintf(fp,"\n");
    system("CLS");
    printf("\n\t\t\t\t\t New User Successfully Created! ");
    user_menu();
}

void login_user()
{
    char u_id[20],p[20];
    char usern[20],pass[20];
    FILE *fp;
    fp=fopen("login.txt","rb");
```

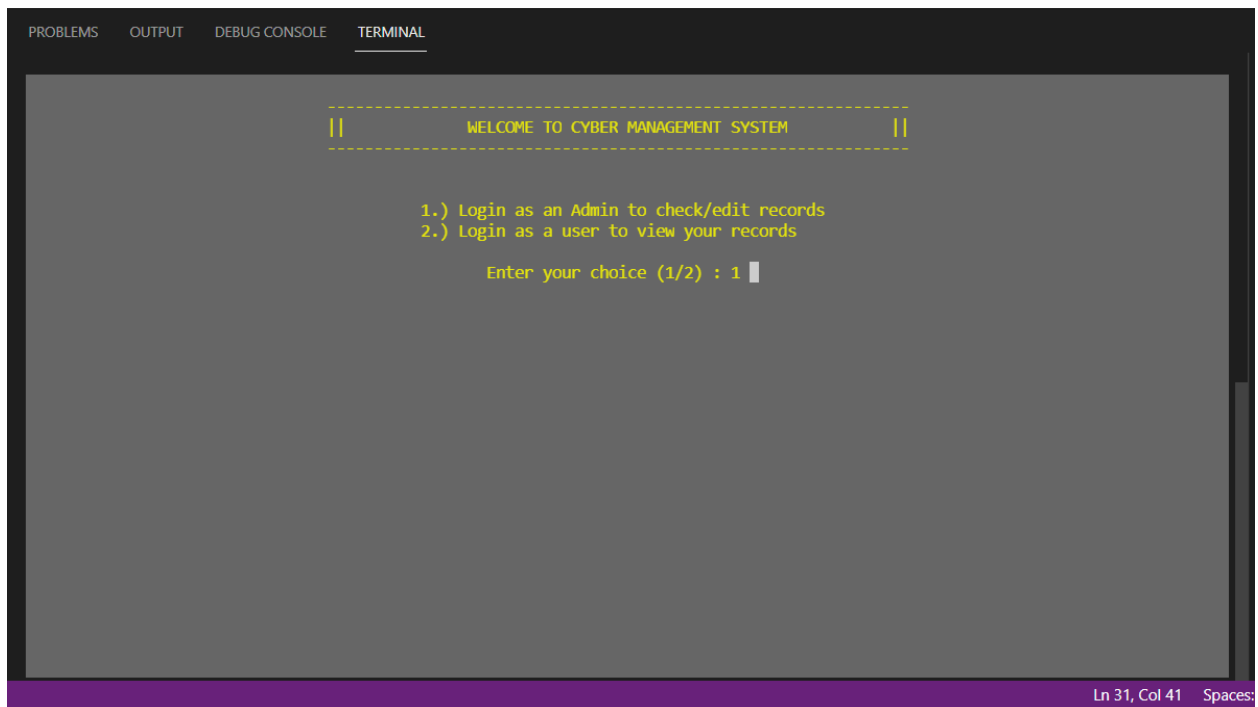


```
printf("\n\n\t\t\t\t\t Username : ");
scanf("%s",u_id);
while(fscanf(fp,"%s %s",&usern,&pass)!=EOF)
{
    if(strcmp(u_id,usern)==0)
    {
        printf("\n\n\t\t\t\t\t Password : ");
        scanf("%s",&p);
        if(strcmp(p,pass)==0)
        {
            system("CLS");
            main_heading();
            printf("\n\n\t\t\t\t\tWELCOME USER!! LOGIN SUCCESSFULL!");
            printf("\n\n");
            user_menu();
            printf("\n\n\t\t\t\t\t any key to continue ");
            fflush(stdin);
            getchar();
            user_menu();
        }
        else
        {
            printf("\n\n\t\t\t\t\tIncorrect username or password");
            printf("\n\n\t\t\t\t\tTRY AGAIN");
            login_user();
        }
    }
    printf("\n\n\t\t\t\t\t Incorrect Username!! Please Try
again\n\n\t\t\t\t\t or create a new user\n");
    user_login();
}
```

Screenshots:

Here we have attached several screenshots of the terminal window the user gets on executing the program. It includes all the various cases/choices that the user may opt for, and we have shown the final result/output displayed for each case.

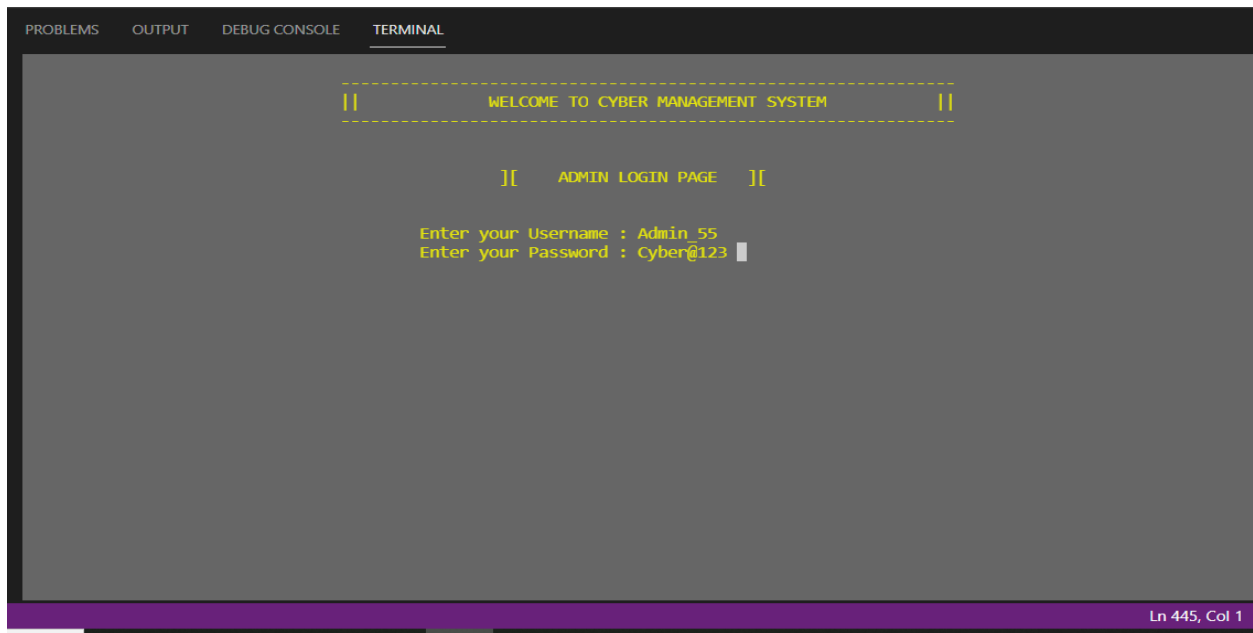
This is the main homepage:



```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
||----- WELCOME TO CYBER MANAGEMENT SYSTEM -----||
1.) Login as an Admin to check/edit records
2.) Login as a user to view your records
Enter your choice (1/2) : 1
```

Ln 31, Col 41 Spaces:

This is window displayed when user opts for admin login:

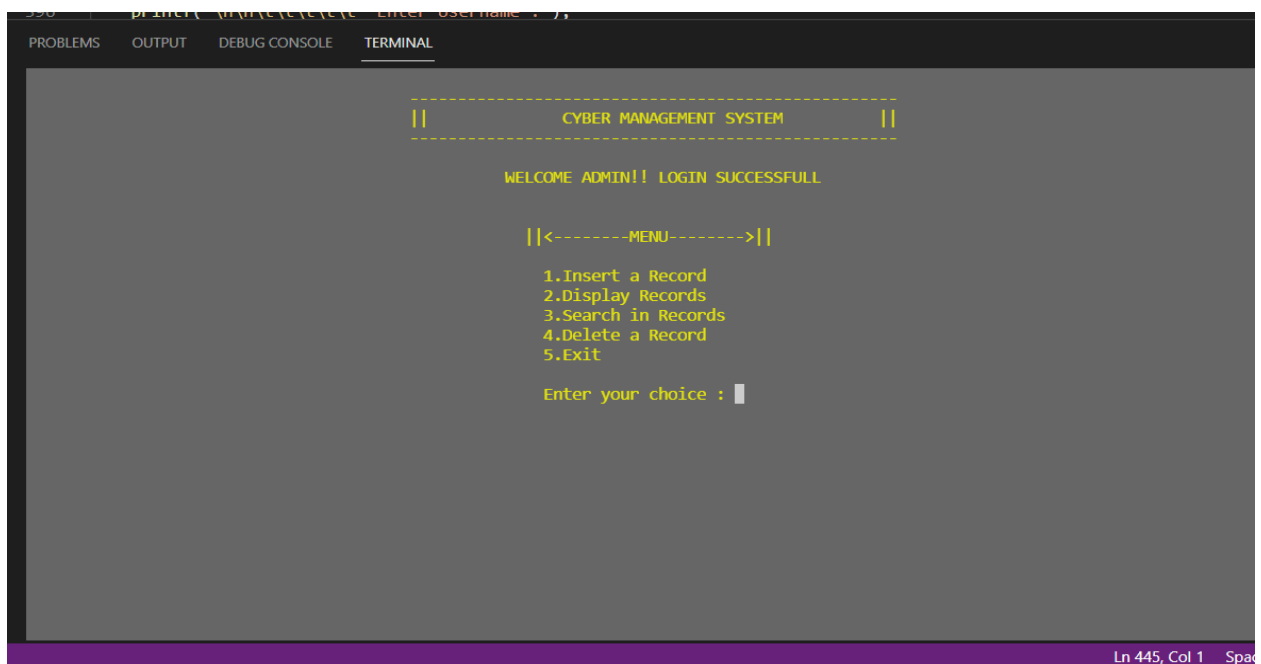


The screenshot shows a terminal window with a dark background and yellow text. At the top, there is a header bar with tabs: PROBLEMS, OUTPUT, DEBUG CONSOLE, and TERMINAL. The main content area displays the following text:

```
||-----WELCOME TO CYBER MANAGEMENT SYSTEM-----||  
  
][ ADMIN LOGIN PAGE ][  
  
Enter your Username : Admin_55  
Enter your Password : Cyber@123
```

The bottom status bar shows "Ln 445, Col 1".

This is the page displayed on successful admin login:

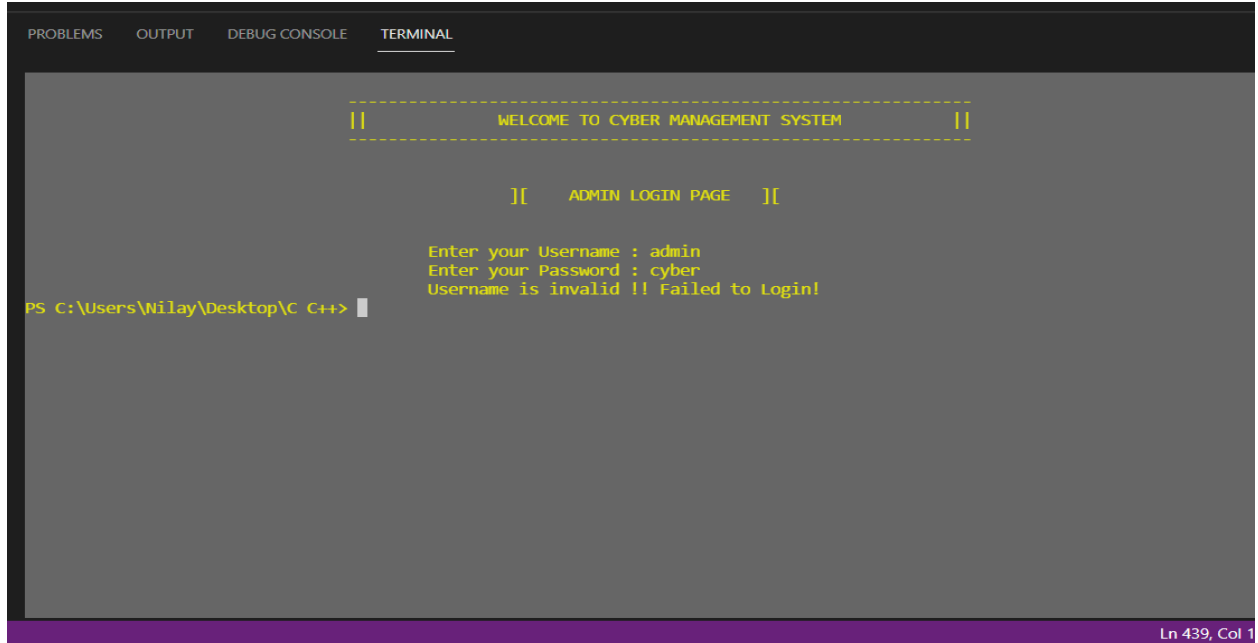


The screenshot shows a terminal window with a dark background and yellow text. At the top, there is a header bar with tabs: PROBLEMS, OUTPUT, DEBUG CONSOLE, and TERMINAL. The main content area displays the following text:

```
||-----CYBER MANAGEMENT SYSTEM-----||  
  
WELCOME ADMIN!!! LOGIN SUCCESSFULL  
  
][<-----MENU----->][  
  
1.Insert a Record  
2.Display Records  
3.Search in Records  
4.Delete a Record  
5.Exit  
  
Enter your choice :
```

The bottom status bar shows "Ln 445, Col 1" and "Spa".

This is the page displayed on entering incorrect username:

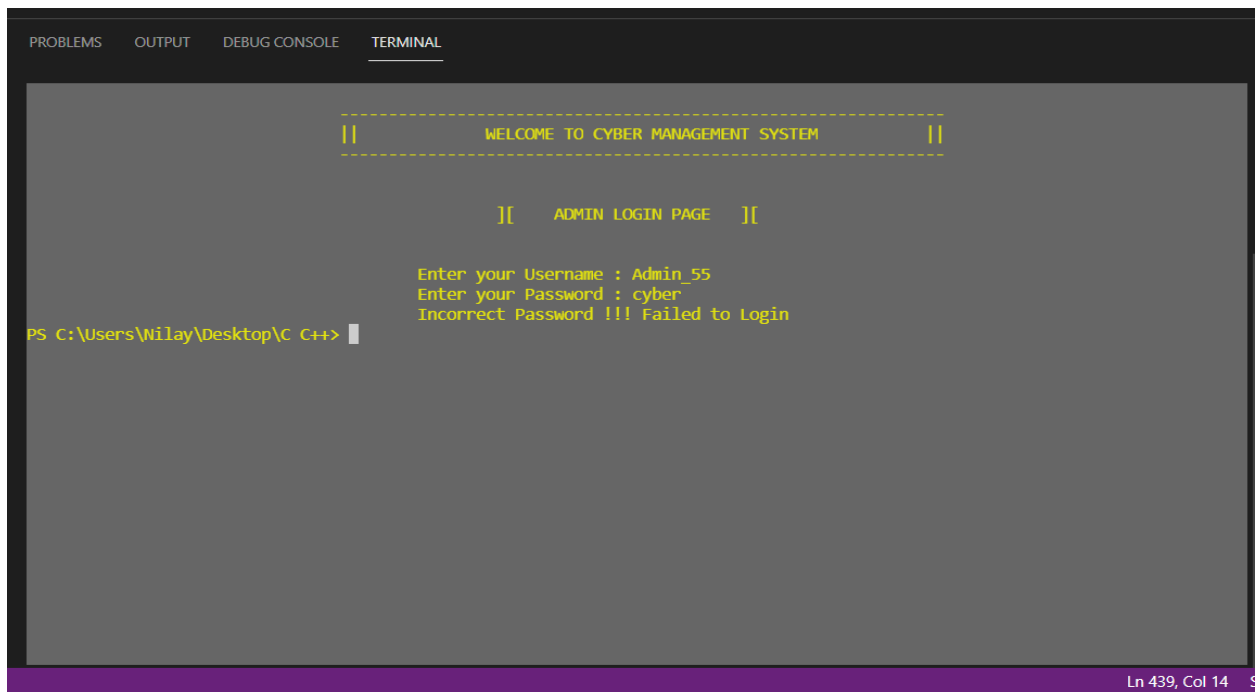


```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
```

```
||-----||  
|| WELCOME TO CYBER MANAGEMENT SYSTEM ||  
||-----||  
  
][ ADMIN LOGIN PAGE ][  
  
Enter your Username : admin  
Enter your Password : cyber  
Username is invalid !! Failed to Login!  
  
PS C:\Users\Nilay\Desktop\C C++> |
```

Ln 439, Col 1

This is page displayed on entering incorrect password:



```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
```

```
||-----||  
|| WELCOME TO CYBER MANAGEMENT SYSTEM ||  
||-----||  
  
][ ADMIN LOGIN PAGE ][  
  
Enter your Username : Admin_55  
Enter your Password : cyber  
Incorrect Password !!! Failed to Login  
  
PS C:\Users\Nilay\Desktop\C C++> |
```

Ln 439, Col 14

On successful login, the user can choose an option from the given menu:

```
396 | printc "\n\n\n\n\n\n\nEnter username : ";  
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL  
  
||-----CYBER MANAGEMENT SYSTEM-----||  
  
WELCOME ADMIN!! LOGIN SUCCESSFULL  
  
||<-----MENU----->||  
  
1.Insert a Record  
2.Display Records  
3.Search in Records  
4.Delete a Record  
5.Exit  
  
Enter your choice : 1
```

Ln 445, Col 1 Space

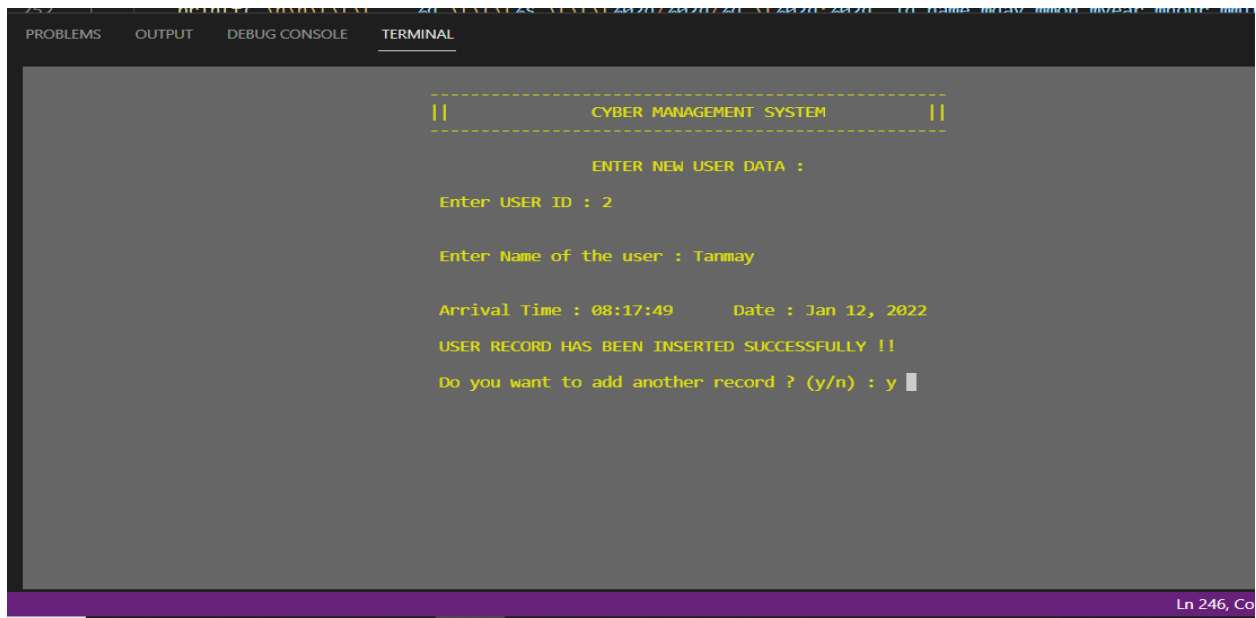
On selecting Option 1, "Insert a new Record", the user can enter the data and the following details will be displayed:

```

252 | printf("\n\nEXIT : %d\n\n",EXIT_SUCCESS);
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
|| CYBER MANAGEMENT SYSTEM ||
ENTER NEW USER DATA :
Enter USER ID : 1
Enter Name of the user : Nilay
Arrival Time : 08:15:45 Date : Jan 12, 2022
USER RECORD HAS BEEN INSERTED SUCCESSFULLY !!
Do you want to add another record ? (y/n) : y
Ln 246, Col 8 Spa

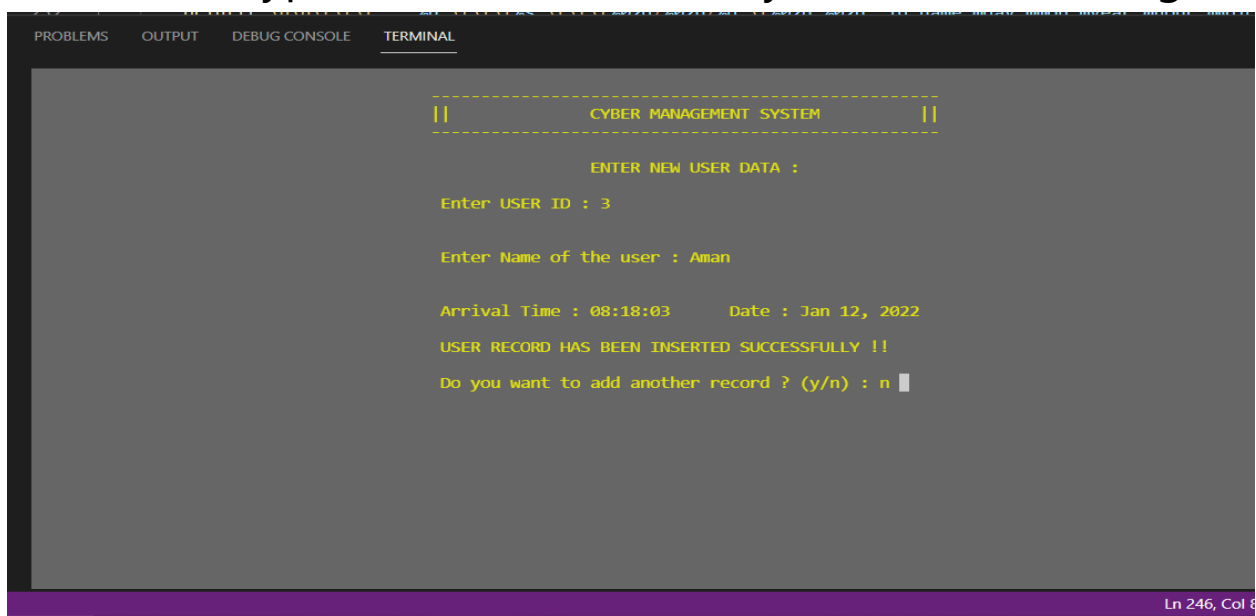
```

If the user wants to insert another record, they can do so by typing 'y' for yes:



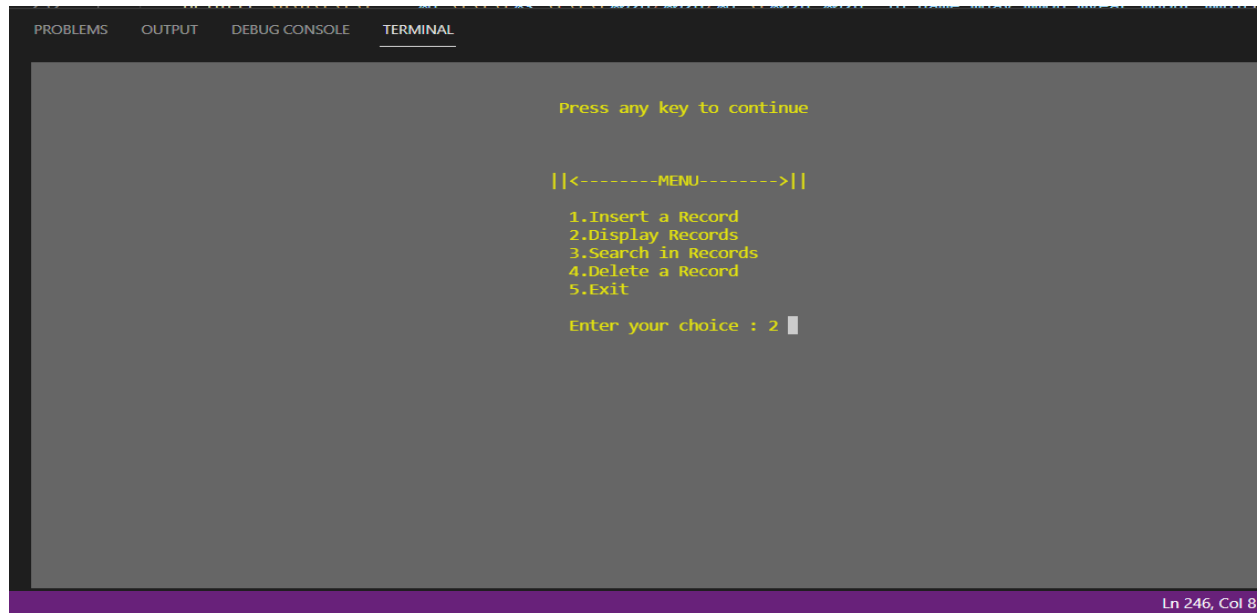
```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
|| CYBER MANAGEMENT SYSTEM ||
ENTER NEW USER DATA :
Enter USER ID : 2
Enter Name of the user : Tanmay
Arrival Time : 08:17:49 Date : Jan 12, 2022
USER RECORD HAS BEEN INSERTED SUCCESSFULLY !!
Do you want to add another record ? (y/n) : y
```

Similarly, the user can insert as many records as they want and can type "n" for no, once they are done inserting:



```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
|| CYBER MANAGEMENT SYSTEM ||
ENTER NEW USER DATA :
Enter USER ID : 3
Enter Name of the user : Aman
Arrival Time : 08:18:03 Date : Jan 12, 2022
USER RECORD HAS BEEN INSERTED SUCCESSFULLY !!
Do you want to add another record ? (y/n) : n
```

On clicking no, user can press any key to continue and they will be redirected back to the homepage, where they can now choose another option:



```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

Press any key to continue

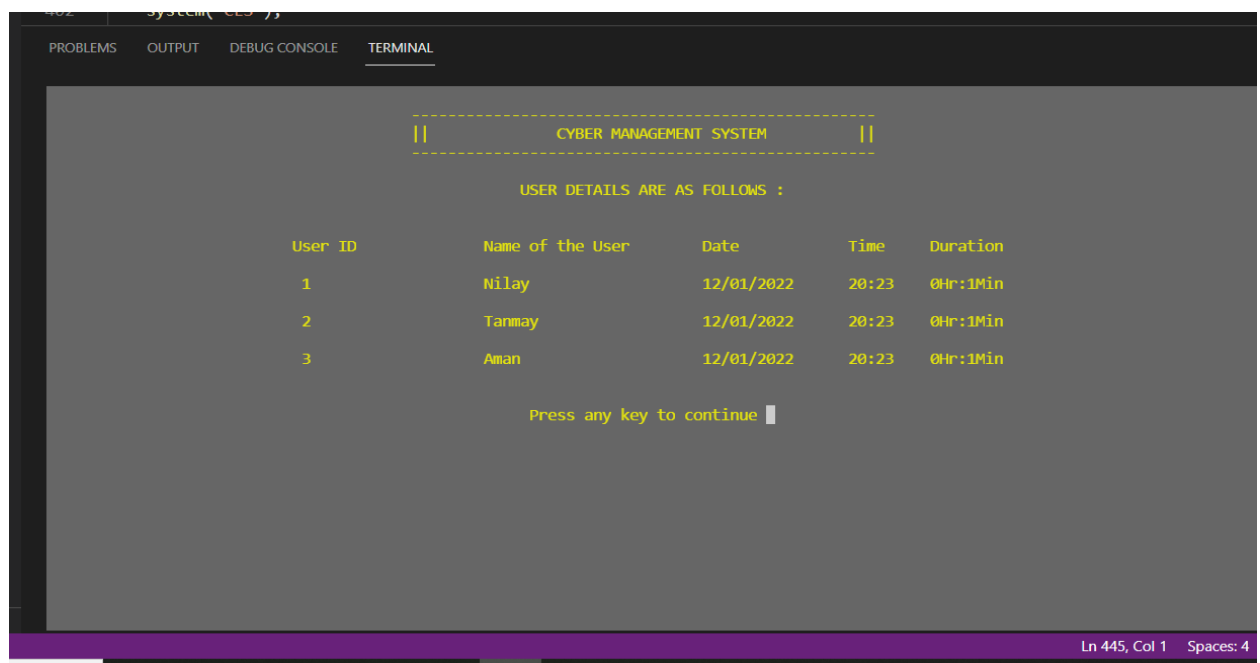
||<-----MENU----->||

1.Insert a Record
2.Display Records
3.Search in Records
4.Delete a Record
5.Exit

Enter your choice : 2
```

Ln 246, Col 8

On opting for option 2, user records will be displayed, as entered earlier, along with the date and time of login and also the time for which the session has been active:



```
402 system( "CLS" );
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

||-----CYBER MANAGEMENT SYSTEM-----||

USER DETAILS ARE AS FOLLOWS :

User ID      Name of the User      Date      Time      Duration
1            Nilay                 12/01/2022  20:23     0Hr:1Min
2            Tanmay                12/01/2022  20:23     0Hr:1Min
3            Aman                  12/01/2022  20:23     0Hr:1Min

Press any key to continue
```

Ln 445, Col 1 Spaces: 4

On pressing any key, the user will be redirected to the menu page:

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL

||-----CYBER MANAGEMENT SYSTEM-----||

USER DETAILS ARE AS FOLLOWS :

User ID      Name of the User      Date      Time      Duration
1            Nilay                12/01/2022  20:23    0Hr:1Min
2            Tanmay               12/01/2022  20:23    0Hr:1Min
3            Aman                 12/01/2022  20:23    0Hr:1Min

Press any key to continue

||<-----MENU----->||

1.Insert a Record
2.Display Records
3.Search in Records
4.Delete a Record
5.Exit

Enter your choice : 3
```

Ln 445, Col 1 Spaces: 4

On opting for option 3, user can search for a particular entry in the records, by entering the user ID:

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL

||-----CYBER MANAGEMENT SYSTEM-----||

Enter USER ID to fetch login information : 1

RECORD FOUND SUCCESSFULLY !!

User ID : 1
Name of User : Nilay
Login Date And Time : 12/01/2022  20:23
Duration : 0Hr:1Min

Press any key to continue
```

Ln 445, Col 1 Spaces: 4


```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL

||          CYBER MANAGEMENT SYSTEM          ||
||-----||

Enter USER ID to fetch login information : 2

RECORD FOUND SUCCESSFULLY !!

User_ID : 2
Name of User : Tanmay
Login Date And Time : 12/01/2022   20:23
Duration : 0Hr:2Min

Press any key to continue █

Ln 445, Col 1  Spaces
```

On entering an invalid user ID, the following error message will be displayed:

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL

||          CYBER MANAGEMENT SYSTEM          ||
||-----||

Enter USER ID to fetch login information : 5

Record not found !!

Press any key to continue █

Ln 439, Col 14  Spaces
```

By pressing any key, the user will be redirected to the menu page to chose a different option:

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
||          CYBER MANAGEMENT SYSTEM          ||
-----
Enter USER ID to fetch login information : 2
RECORD FOUND SUCCESSFULLY !!
User_ID : 2
Name of User : Tanmay
Login Date And Time : 12/01/2022   20:23
Duration : 0Hr:2Min

Press any key to continue

||<-----MENU----->||
1.Insert a Record
2.Display Records
3.Search in Records
4.Delete a Record
5.Exit
Enter your choice : 4
```

Ln 445, Col 1 Spaces: 4

If the user chooses option 4 to delete an existing record, the previously entered data will be displayed and the record can be deleted by entering the user ID:

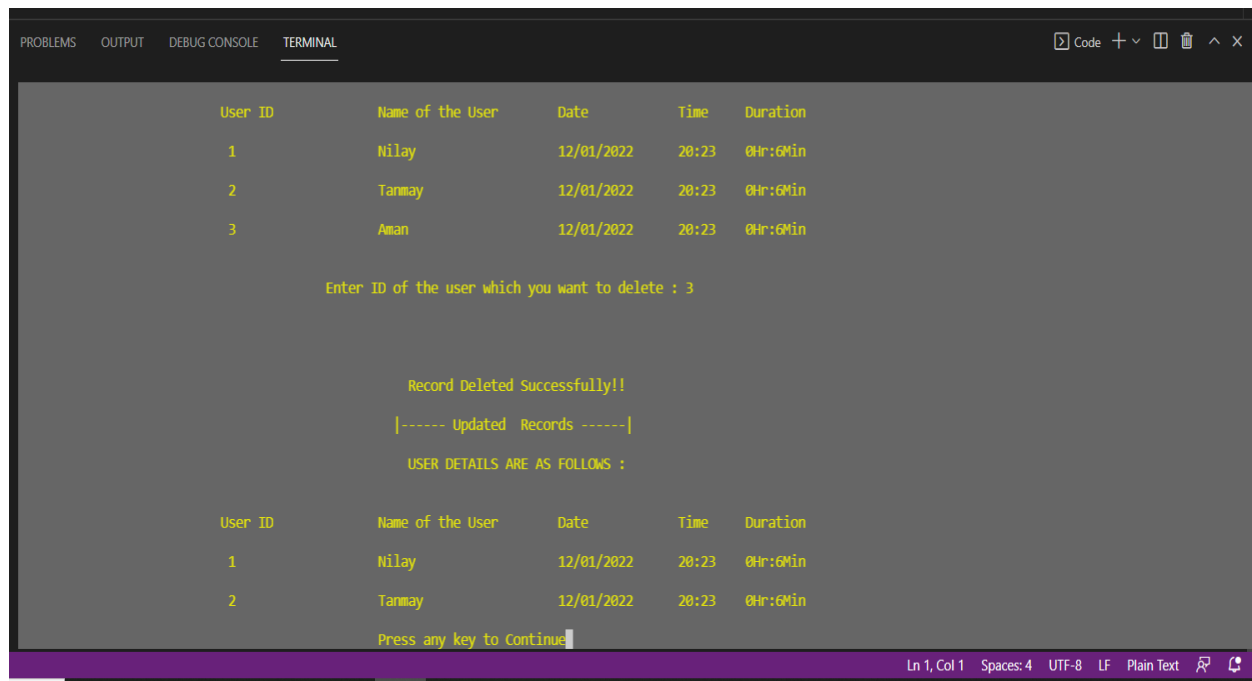
```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
||          CYBER MANAGEMENT SYSTEM          ||
-----
|----- PREVIOUS ENTERED DATA -----|
      USER DETAILS ARE AS FOLLOWS :

User ID      Name of the User      Date      Time      Duration
1           Nilay           12/01/2022   20:23   0Hr:2Min
2           Tanmay           12/01/2022   20:23   0Hr:2Min
3           Aman            12/01/2022   20:23   0Hr:2Min

Enter ID of the user which you want to delete : 3
```

Ln 445, Col 1 Spaces: 4 UT

On deletion, a success message and the new updated records will be displayed:



```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
Code + - - - - - 
User ID      Name of the User  Date      Time      Duration
1           Nilay      12/01/2022  20:23     0Hr:6Min
2           Tanmay      12/01/2022  20:23     0Hr:6Min
3           Aman        12/01/2022  20:23     0Hr:6Min

Enter ID of the user which you want to delete : 3

Record Deleted Successfully!!

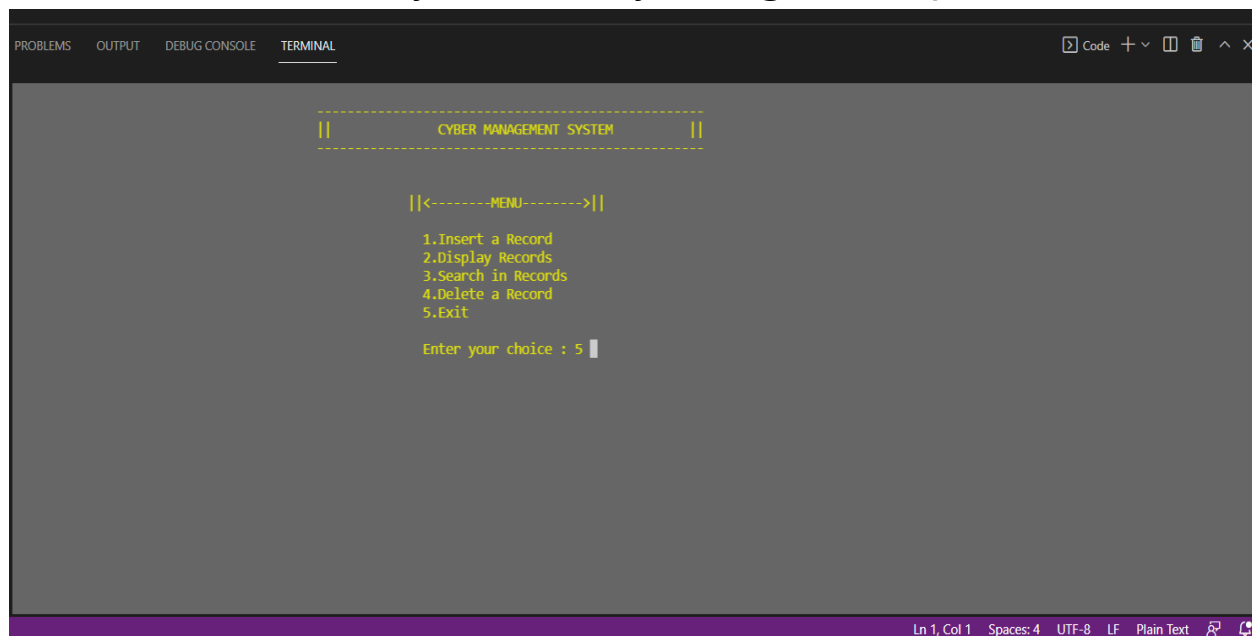
|----- Updated Records -----|

USER DETAILS ARE AS FOLLOWS :

User ID      Name of the User  Date      Time      Duration
1           Nilay      12/01/2022  20:23     0Hr:6Min
2           Tanmay      12/01/2022  20:23     0Hr:6Min

Press any key to Continue
```

Back on the menu page, if the user doesn't want to edit/view/insert any data, they can go for option 5, to exit:



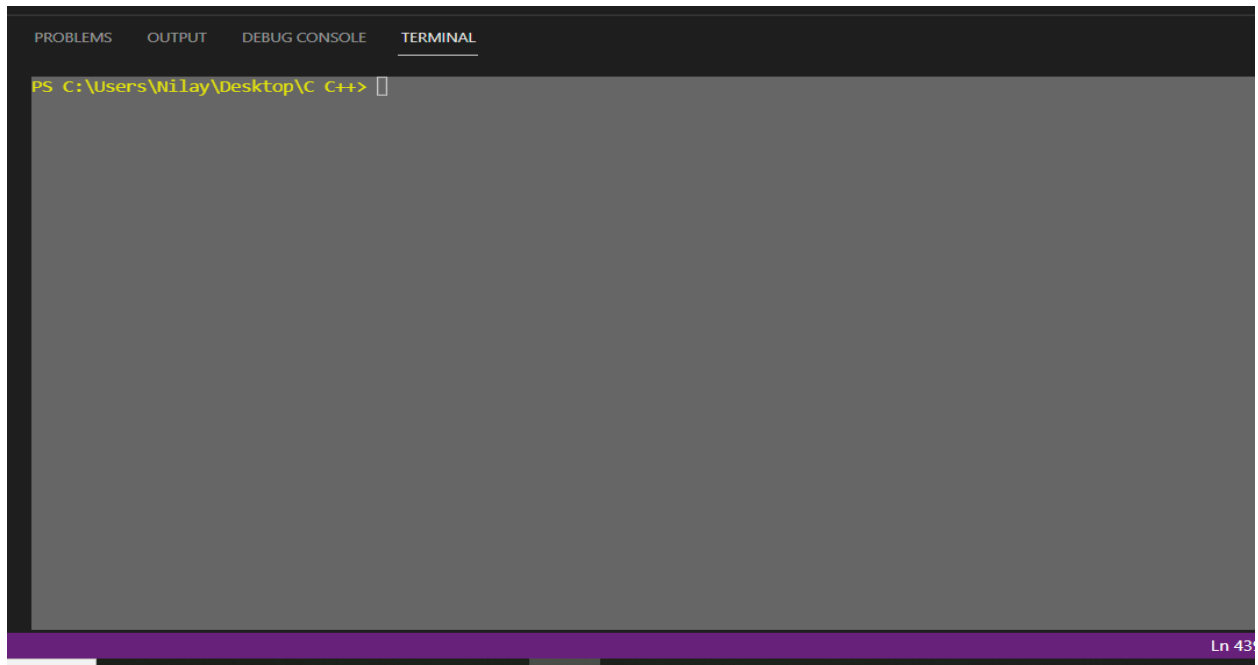
```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
Code + - - - - - 
||-----CYBER MANAGEMENT SYSTEM-----||

||<-----MENU----->||

1.Insert a Record
2.Display Records
3.Search in Records
4.Delete a Record
5.Exit

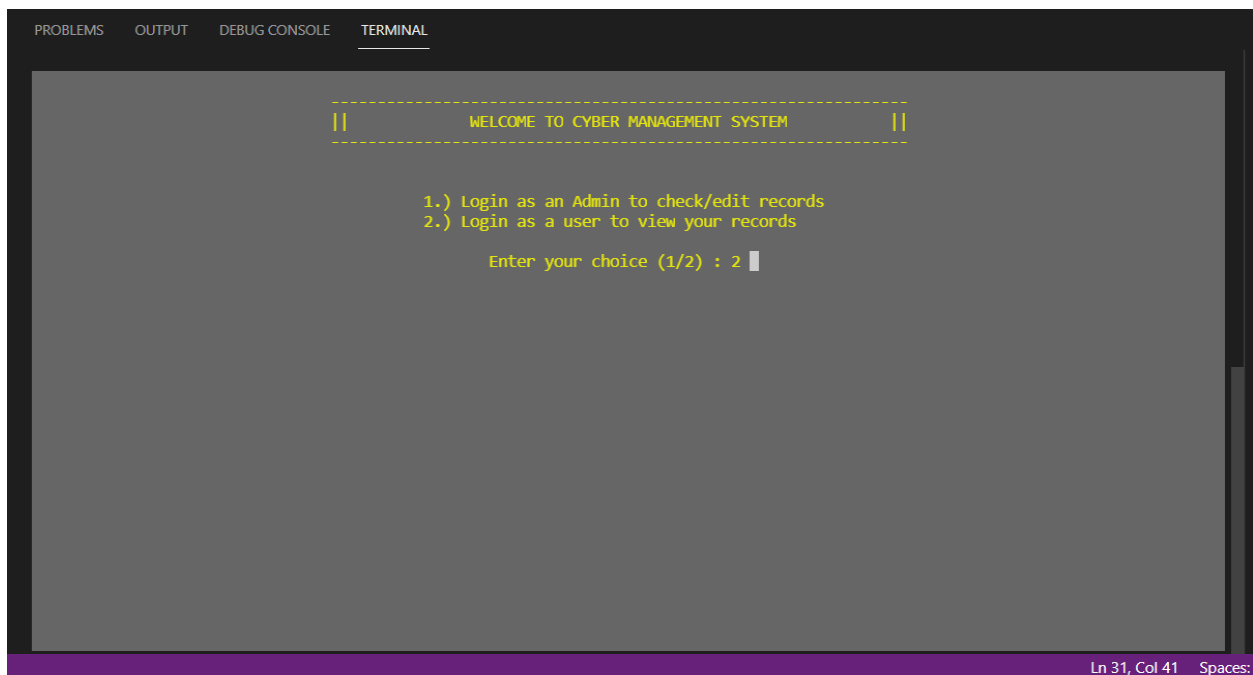
Enter your choice : 5
```

On exiting the program, the user will be directed to the empty terminal window:



Below are the images for when the user opts to continue by creating a new login ID:

The user on the homepage decides to opt for option 2 to login by creating a new user ID:



```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL

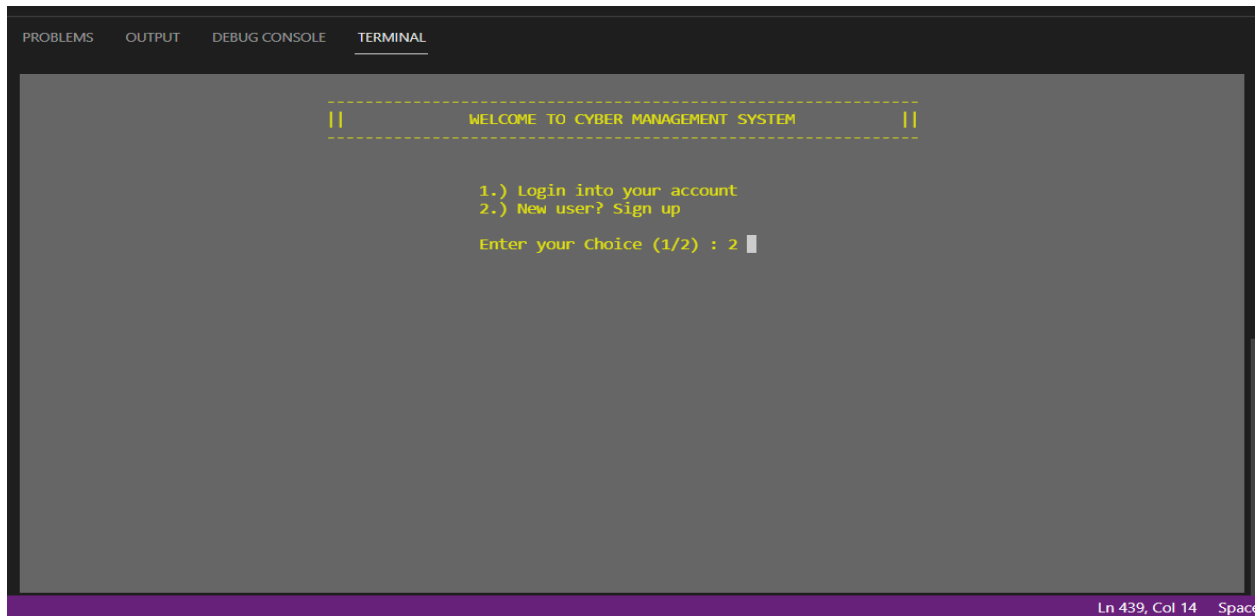
||----- WELCOME TO CYBER MANAGEMENT SYSTEM -----||

1.) Login as an Admin to check/edit records
2.) Login as a user to view your records

Enter your choice (1/2) : 2 |
```

Ln 31, Col 41 Spaces:

User decides to sign up by creating a new account:



```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
```

```
||-----WELCOME TO CYBER MANAGEMENT SYSTEM-----||
```

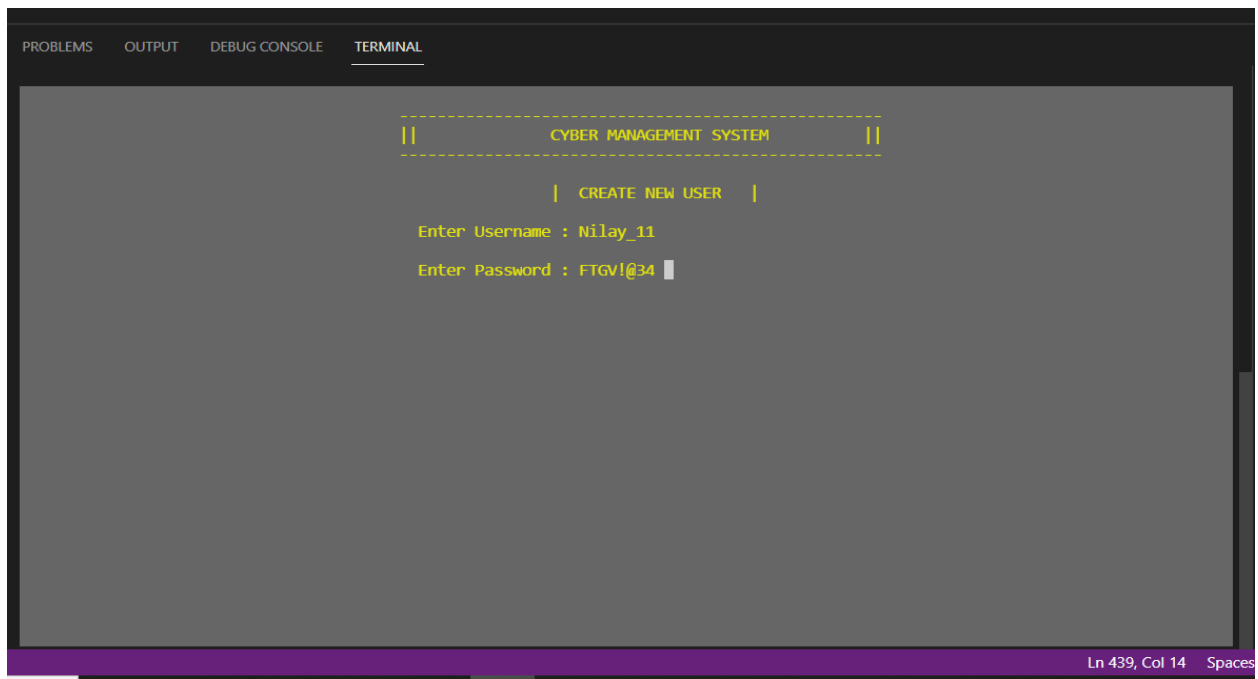
```
1.) Login into your account
```

```
2.) New user? Sign up
```

```
Enter your Choice (1/2) : 2
```

Ln 439, Col 14 Spaces

User is directed to the "Create New User" Page, where they can create an account by entering a new ID and creating their password:



```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
```

```
||-----CYBER MANAGEMENT SYSTEM-----||
```

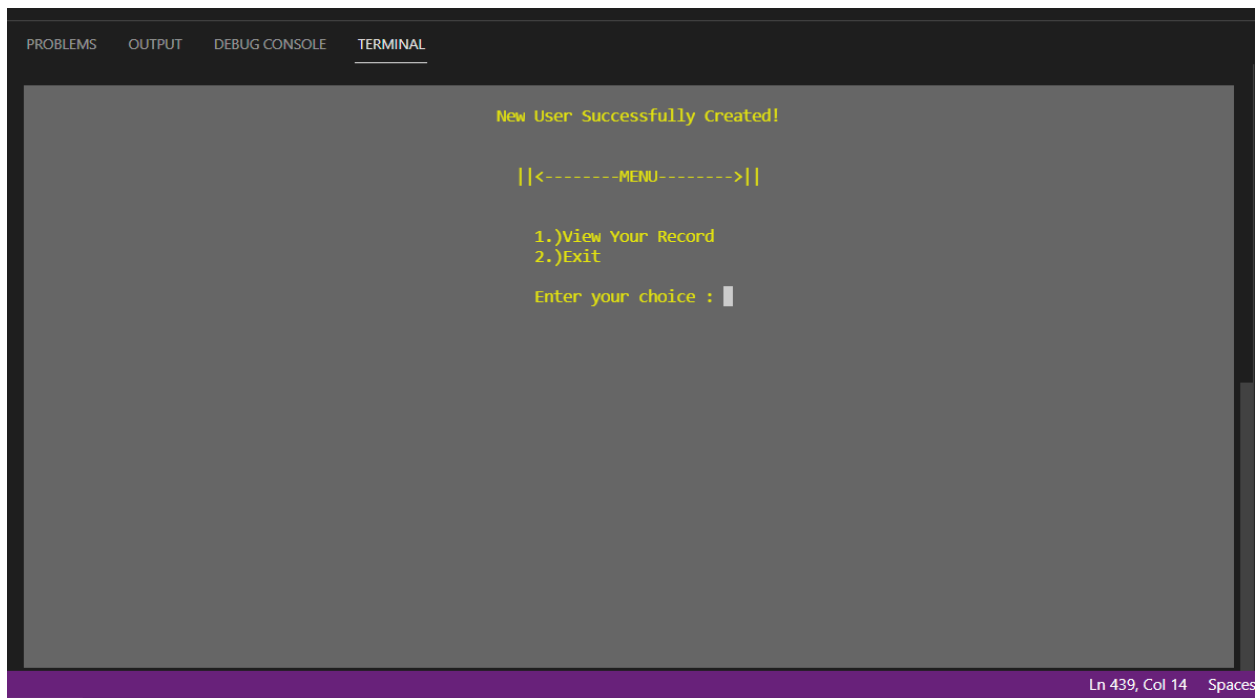
```
| CREATE NEW USER |
```

```
Enter Username : Nilay_11
```

```
Enter Password : FTGV!@34
```

Ln 439, Col 14 Spaces

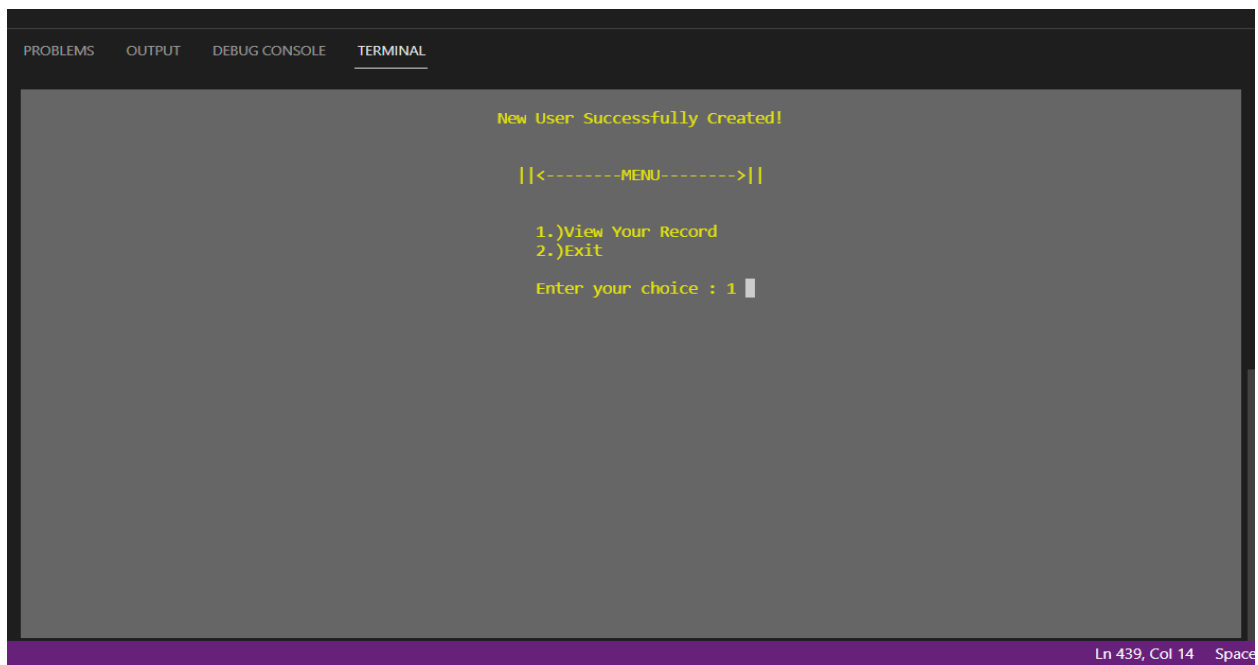
On creating a new user, a success message is displayed and the user is directed to the menu page:



A terminal window with a dark background and yellow text. The window has tabs at the top: PROBLEMS, OUTPUT, DEBUG CONSOLE, and TERMINAL (which is selected). The text in the terminal reads: "New User Successfully Created!" followed by a separator line "||<-----MENU----->||". Below this, there are two options: "1.)View Your Record" and "2.)Exit". The prompt "Enter your choice : " is followed by a cursor. At the bottom right of the terminal, it says "Ln 439, Col 14 Spaces".

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
New User Successfully Created!
||<-----MENU----->||
1.)View Your Record
2.)Exit
Enter your choice : |
Ln 439, Col 14 Spaces
```

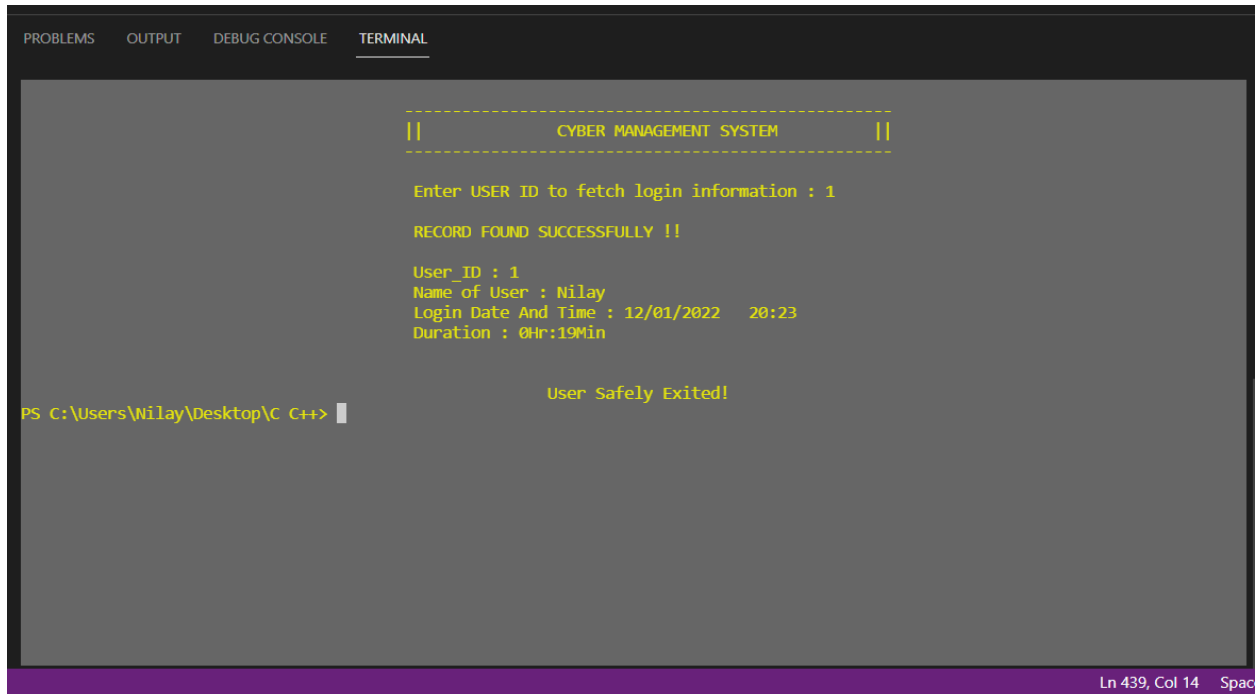
On the menu page if the user opts for option 1, they will be redirected to the view records page:



A terminal window with a dark background and yellow text. The window has tabs at the top: PROBLEMS, OUTPUT, DEBUG CONSOLE, and TERMINAL (which is selected). The text in the terminal reads: "New User Successfully Created!" followed by a separator line "||<-----MENU----->||". Below this, there are two options: "1.)View Your Record" and "2.)Exit". The prompt "Enter your choice : " is followed by the number "1" and a cursor. At the bottom right of the terminal, it says "Ln 439, Col 14 Spaces".

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
New User Successfully Created!
||<-----MENU----->||
1.)View Your Record
2.)Exit
Enter your choice : 1 |
Ln 439, Col 14 Spaces
```

Here user can enter login details and fetch information regarding a particular ID, and on being done, the user is exited:



```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

||          CYBER MANAGEMENT SYSTEM          ||
-----

Enter USER ID to fetch login information : 1

RECORD FOUND SUCCESSFULLY !!

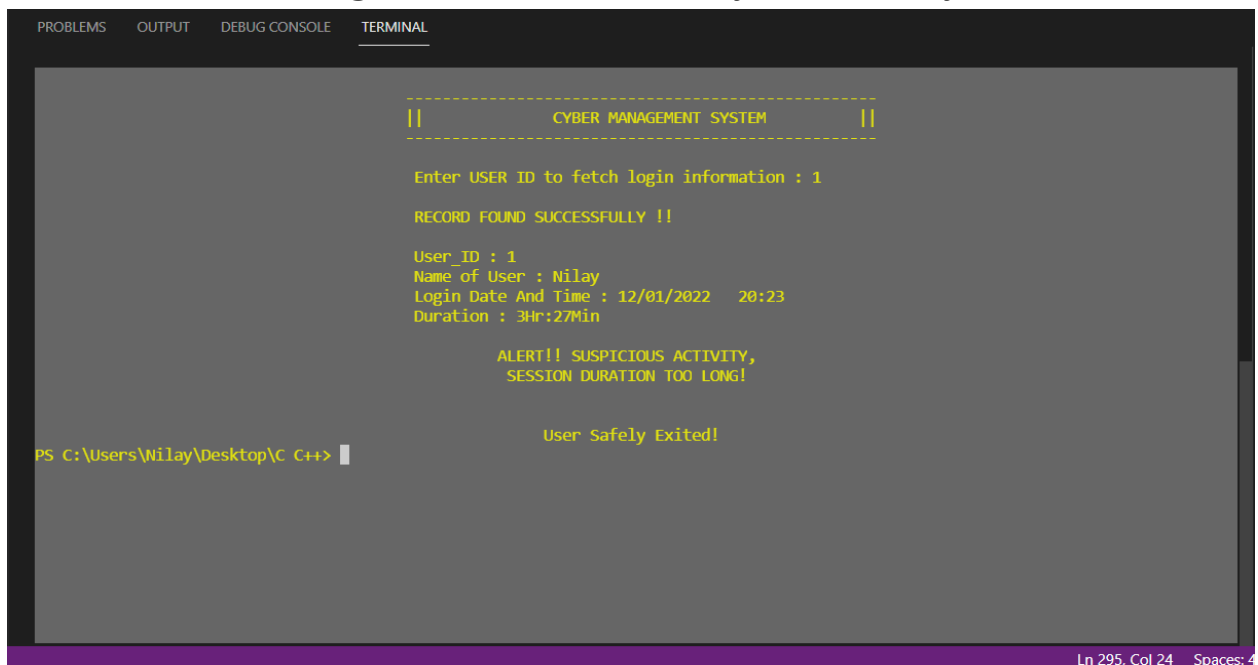
User_ID : 1
Name of User : Nilay
Login Date And Time : 12/01/2022   20:23
Duration : 0Hr:19Min

User Safely Exited!

PS C:\Users\Nilay\Desktop\C C++>
```

Ln 439, Col 14 Spaces: 4

If the user session period is too long, a warning message stating suspicious activity, is displayed:



```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

||          CYBER MANAGEMENT SYSTEM          ||
-----

Enter USER ID to fetch login information : 1

RECORD FOUND SUCCESSFULLY !!

User_ID : 1
Name of User : Nilay
Login Date And Time : 12/01/2022   20:23
Duration : 3Hr:27Min

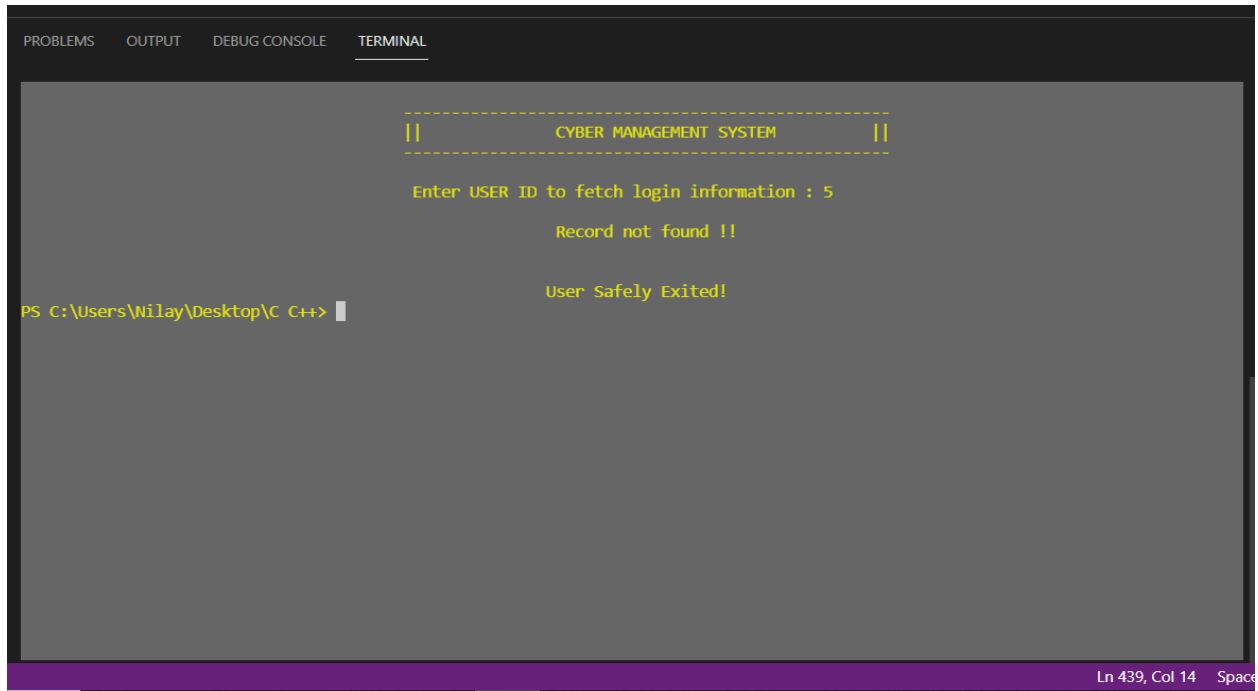
ALERT!! SUSPICIOUS ACTIVITY,
SESSION DURATION TOO LONG!

User Safely Exited!

PS C:\Users\Nilay\Desktop\C C++>
```

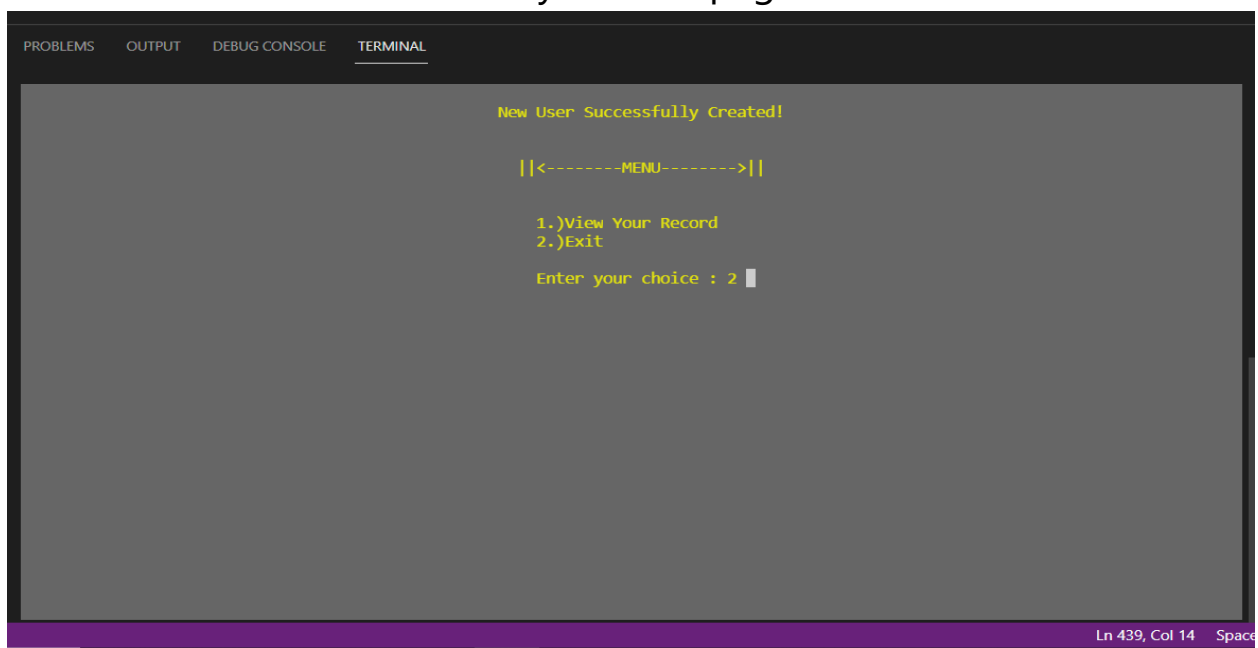
Ln 295, Col 24 Spaces: 4

On entering an invalid ID to be searched, an error message is displayed, and the user is safely exited:



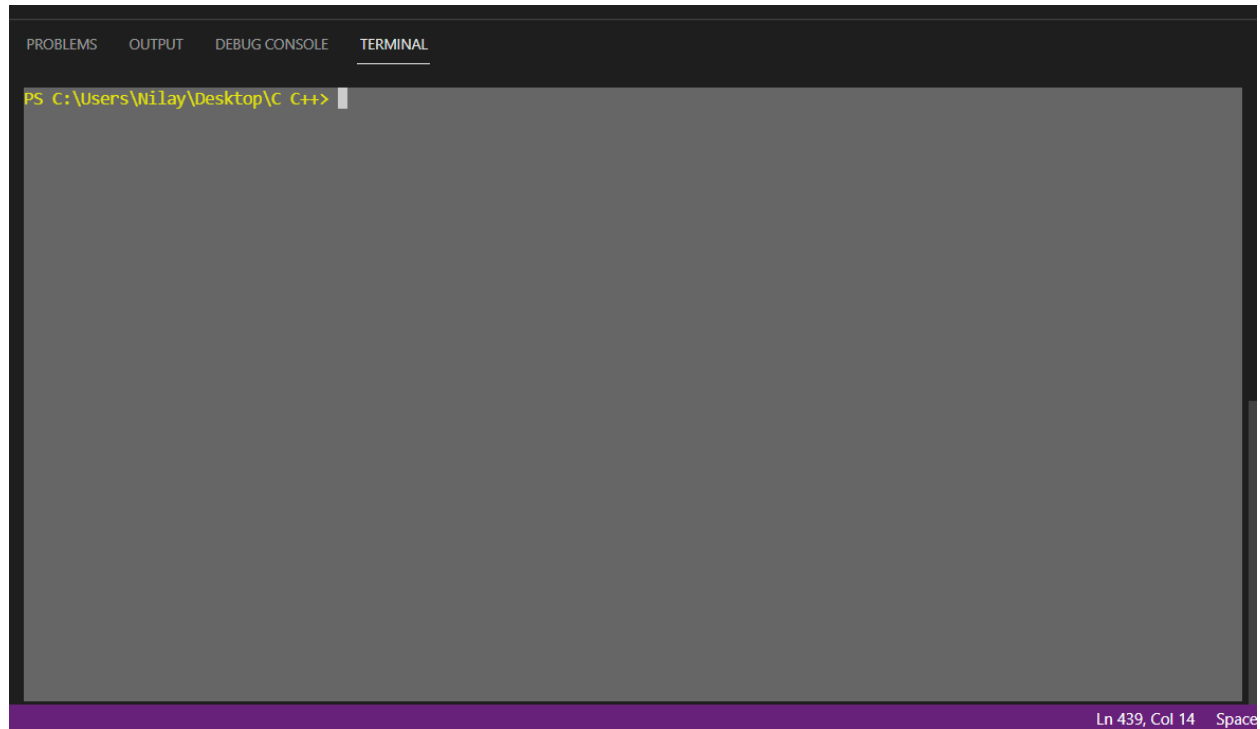
```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
||          CYBER MANAGEMENT SYSTEM          ||
-----
Enter USER ID to fetch login information : 5
Record not found !!
User Safely Exited!
PS C:\Users\Wilay\Desktop\C C++>
```

On the menu page, if the user decides to opt for option 2, they can safely exit the page:

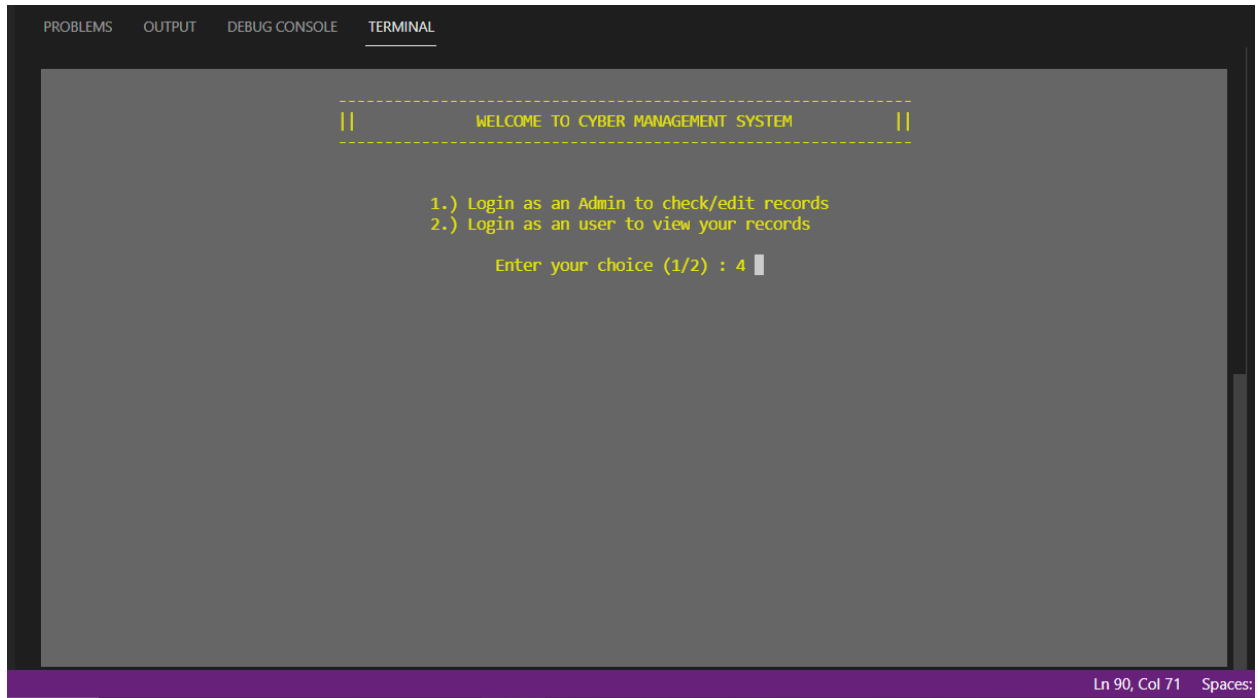


```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
New User Successfully Created!
[<-----MENU----->]
1.)View Your Record
2.)Exit
Enter your choice : 2
```

On exiting, the user is directed to the blank terminal window:



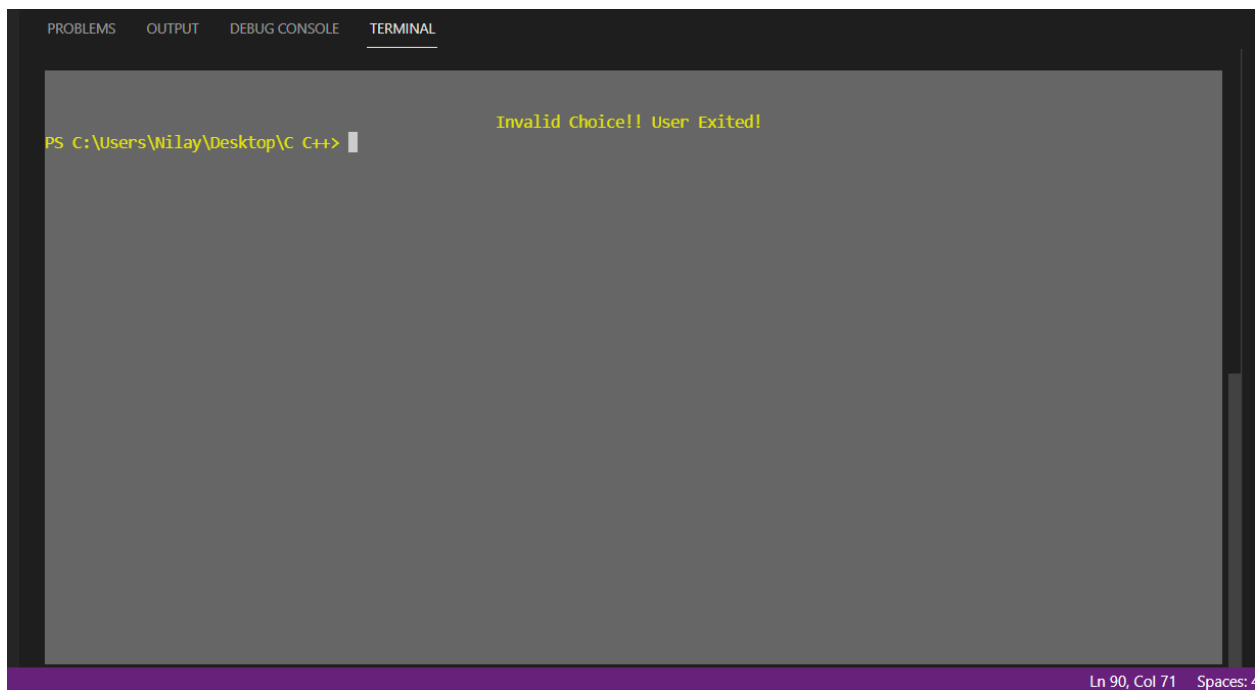
If on the main homepage, the user enters a wrong choice, an error message is displayed, and the user is exited:



```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
```

```
-----  
|| WELCOME TO CYBER MANAGEMENT SYSTEM ||  
-----  
  
1.) Login as an Admin to check/edit records  
2.) Login as an user to view your records  
  
Enter your choice (1/2) : 4
```

Ln 90, Col 71 Spaces: 4



```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
```

```
Invalid Choice!! User Exited!
```

```
PS C:\Users\Wilay\Desktop\C C++>
```

Ln 90, Col 71 Spaces: 4

Result:

The resultant source code and output screens yields the result as expected during runtime and compilation of the program, from both ends, developers' and user's end. Hence, the program has been compiled and executed successfully.

Conclusion:

By Utilizing all the major concepts of C Programming Language, like flow control and operators, arrays and loops, strings, functions, structures and pointers, we have tried our best to create a Cyber Management System which can effectively sort all the records as entered by the user and display or delete them whenever required. We have optimized the program to our best to create a user-friendly easy to operate experience for the user. The user can effectively login as an admin to view the log records with the time and date details or

register with a new ID to view the records. This project has also helped us to learn various new concepts and their functions, during the making. It has helped us to develop an amazing experience while working 3rd Generation High Level Language, C and explore all the various different technical aspects related to it. Also, since C language lays the foundation for the latest generation language, it'll help us to work easily and smoothly while dealing with new and modern languages like Python, Java, etc. Overall, it was a fun and informative experience for us, the developers and also would be for the user!

