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SECTION: **B**

QUESTION 01: USER AUTHENTICATION SYSTEM USING ARRAY OF STRINGS

Write a C program to simulate a simple Sign-In / Sign-Up system using arrays of strings. The program should initially store 3 predefined user accounts (each having an email and a password) and should allow expansion up to 5 users in total.

Requirements:

Store all email IDs and passwords in two separate 2D character arrays.
char emails[5][50];
char passwords[5][50];
Initialize the program with the following 3 predefined accounts:
Emails: ghufran@gmail.com, aina@gmail.com, Saif@gmail.com
Password: Hello12345, 0nepieceisreal, xyz987654321

The program should display a menu to the user:
===== Welcome to the Login System =====
1. Sign In
2. Sign Up
Enter your choice:

Sign In:

Ask the user to enter their email and password.
If they match any existing stored credentials, display:
Sign in successful!
Otherwise, display:
Invalid email or password.

Sign Up:
If there are already 5 users, display:
User limit reached. Cannot register more users.
Otherwise:
Ask the user to enter a new email and password.

Validate the following:

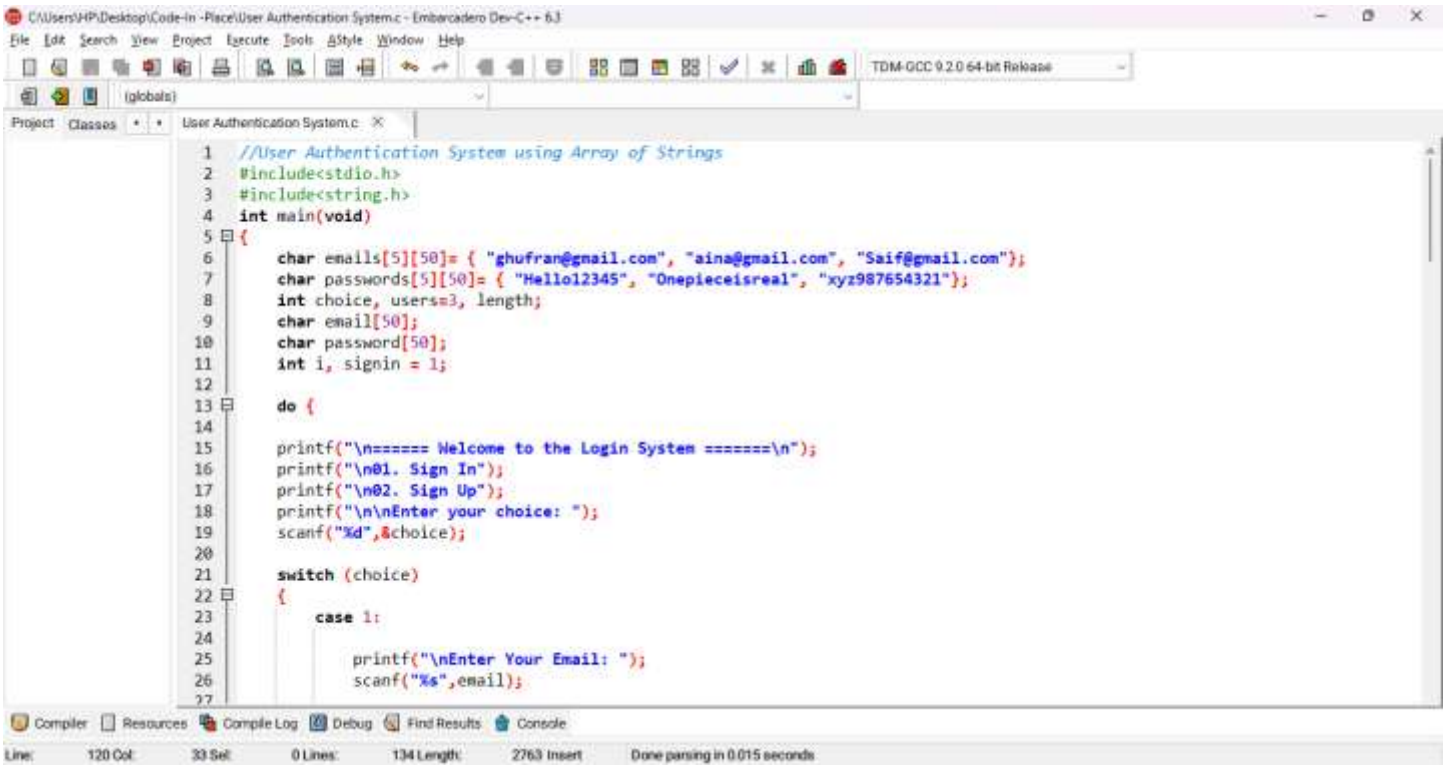
The email must not already exist in the stored list.
The password must:
Be at least 8 characters long.
Contain both letters and numbers.
If both conditions are met:
Add the new email and password to the arrays.

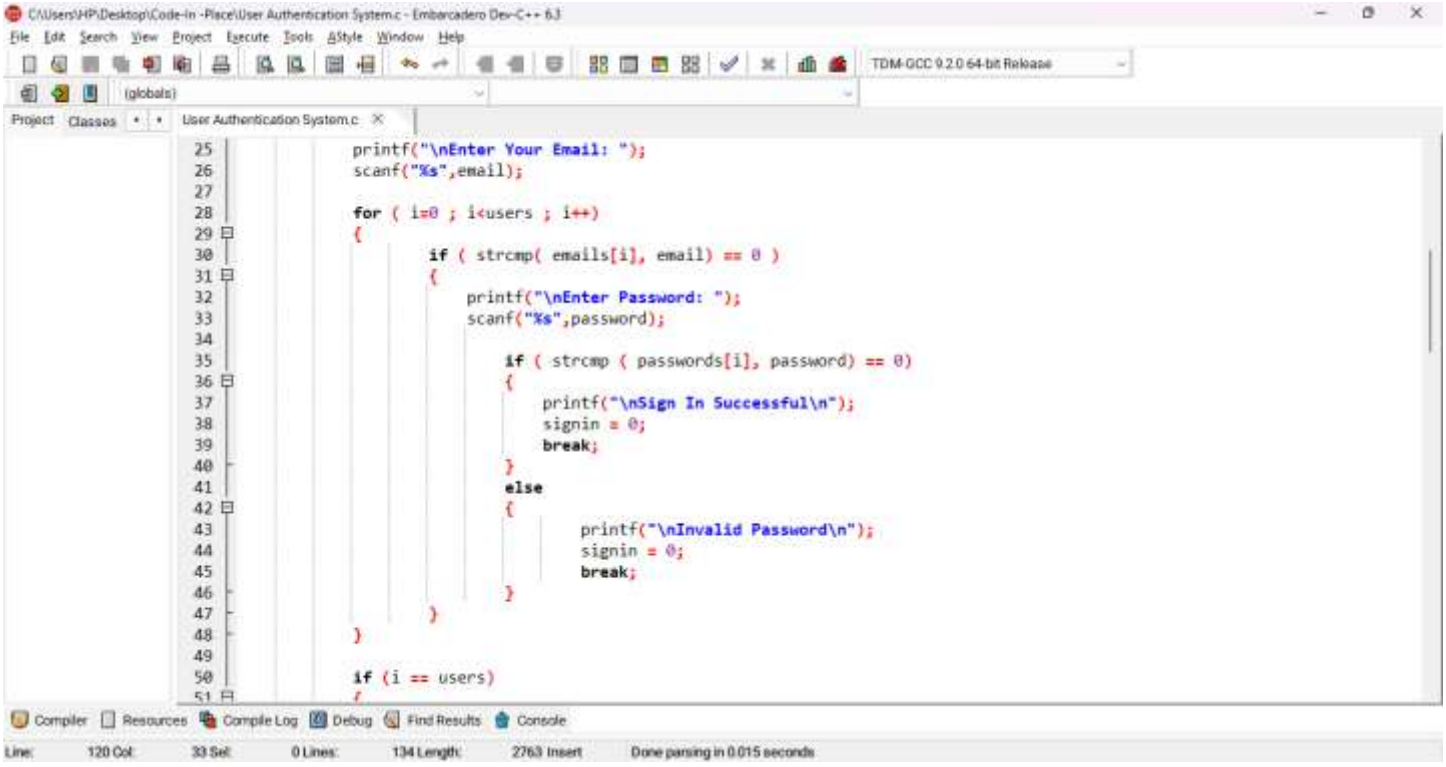
Display:
Account created successfully! Please sign in now.
Otherwise, show the appropriate error message such as:
"Email already exists!"
"Password must be at least 8 characters long and alphanumeric!"

Your Code should cover all aspects detailed before.

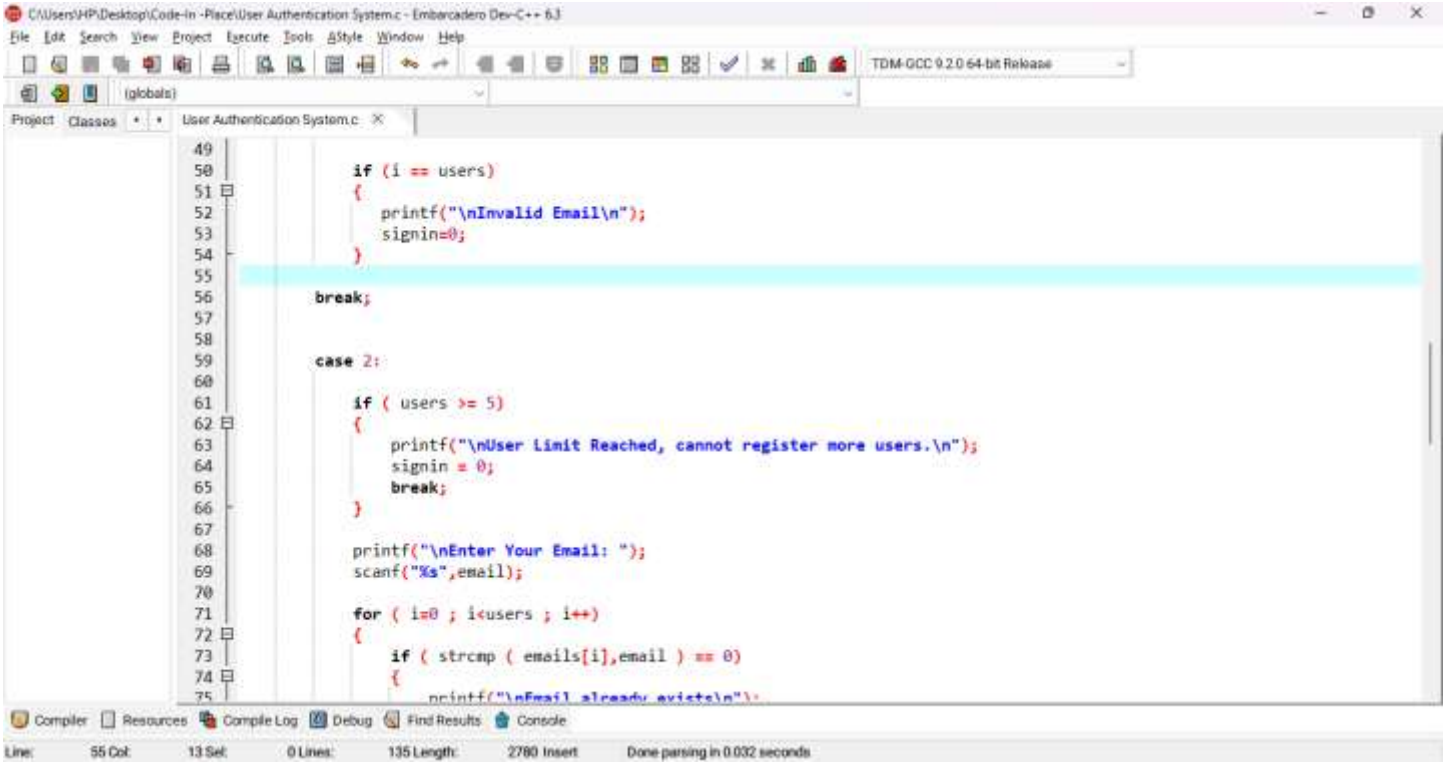
Output screenshots should showcase these cases:
The program should allow a user to sign in successfully using:
Any of the predefined credentials, or
A newly created account after a successful sign-up.
It should also demonstrate cases where:
A sign-in fails because of incorrect credentials.
A sign-up fails because the email already exists or the password is invalid.

SOURCE CODE:

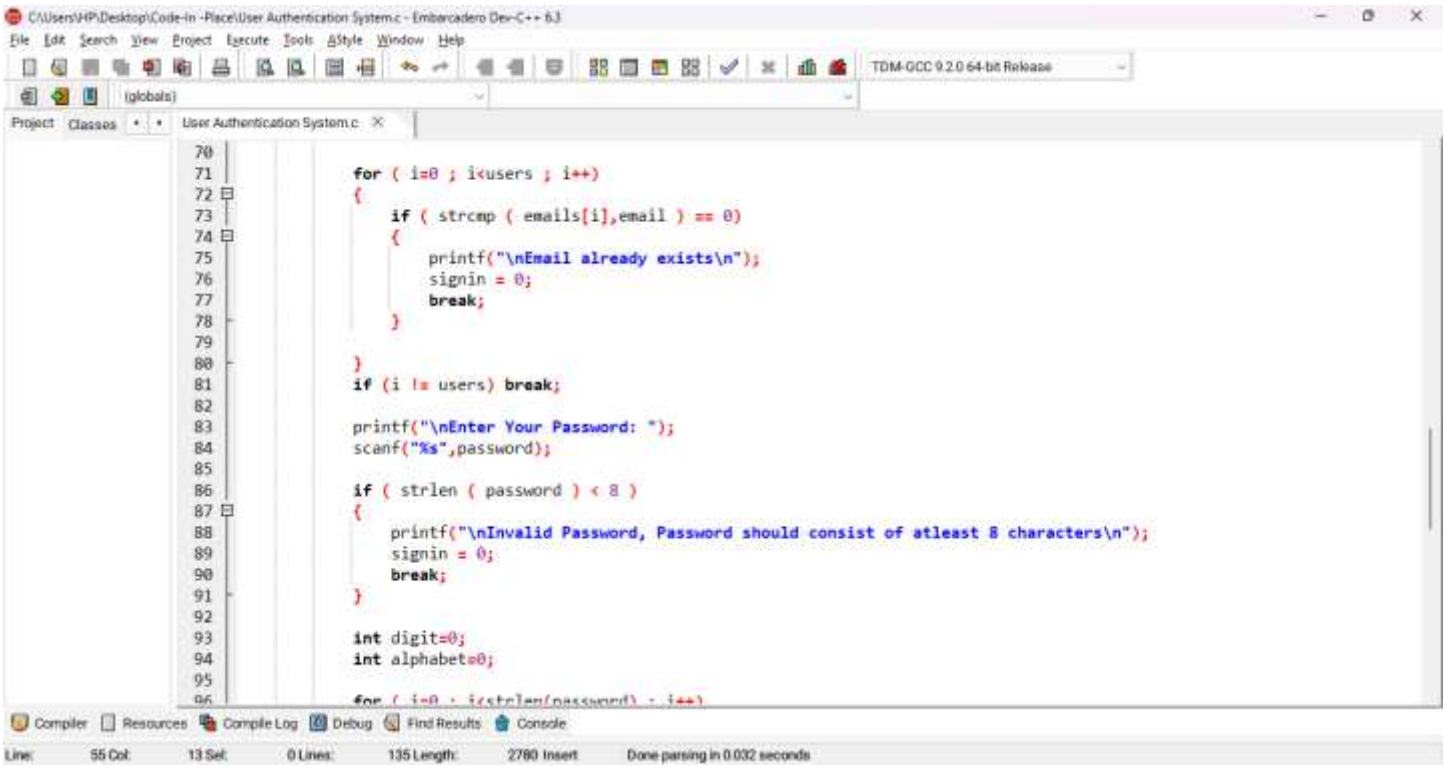


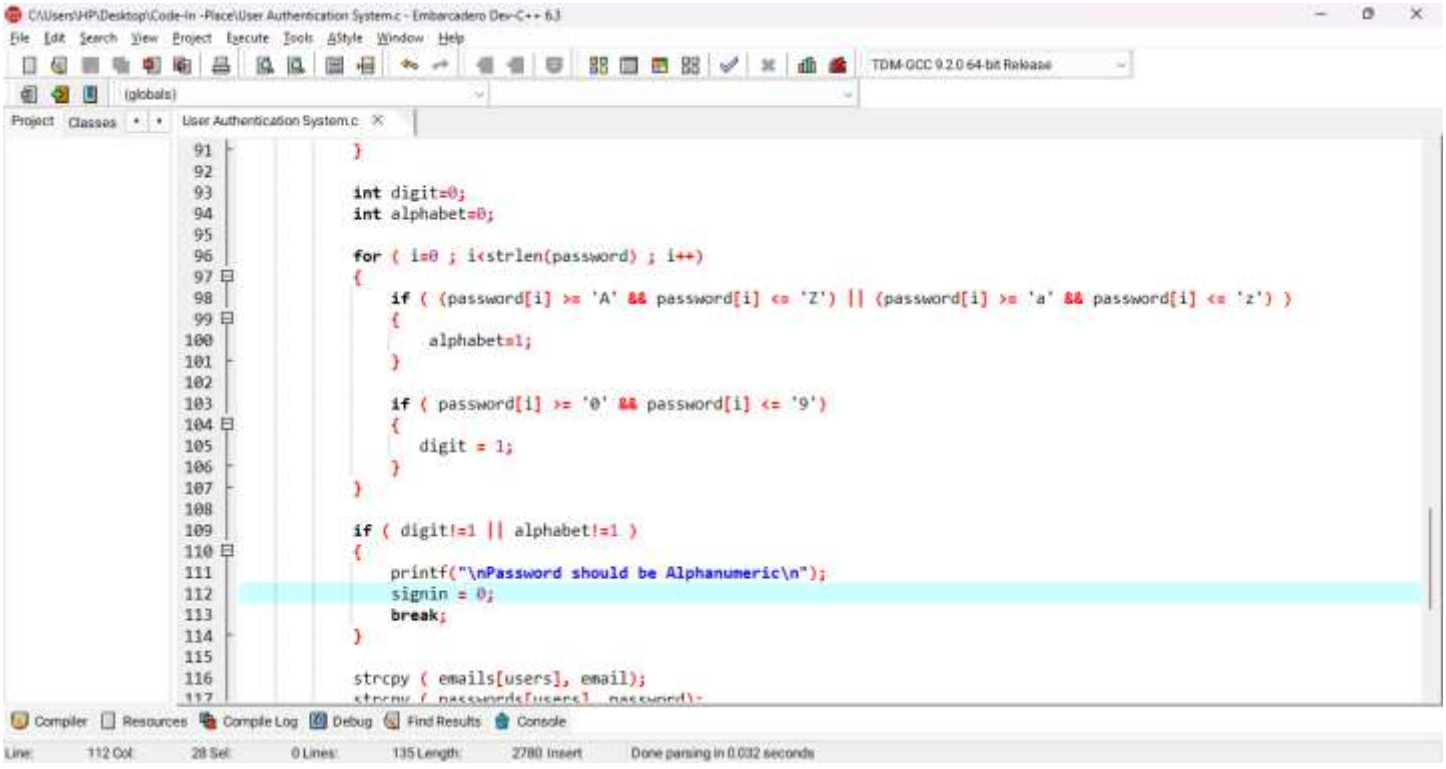


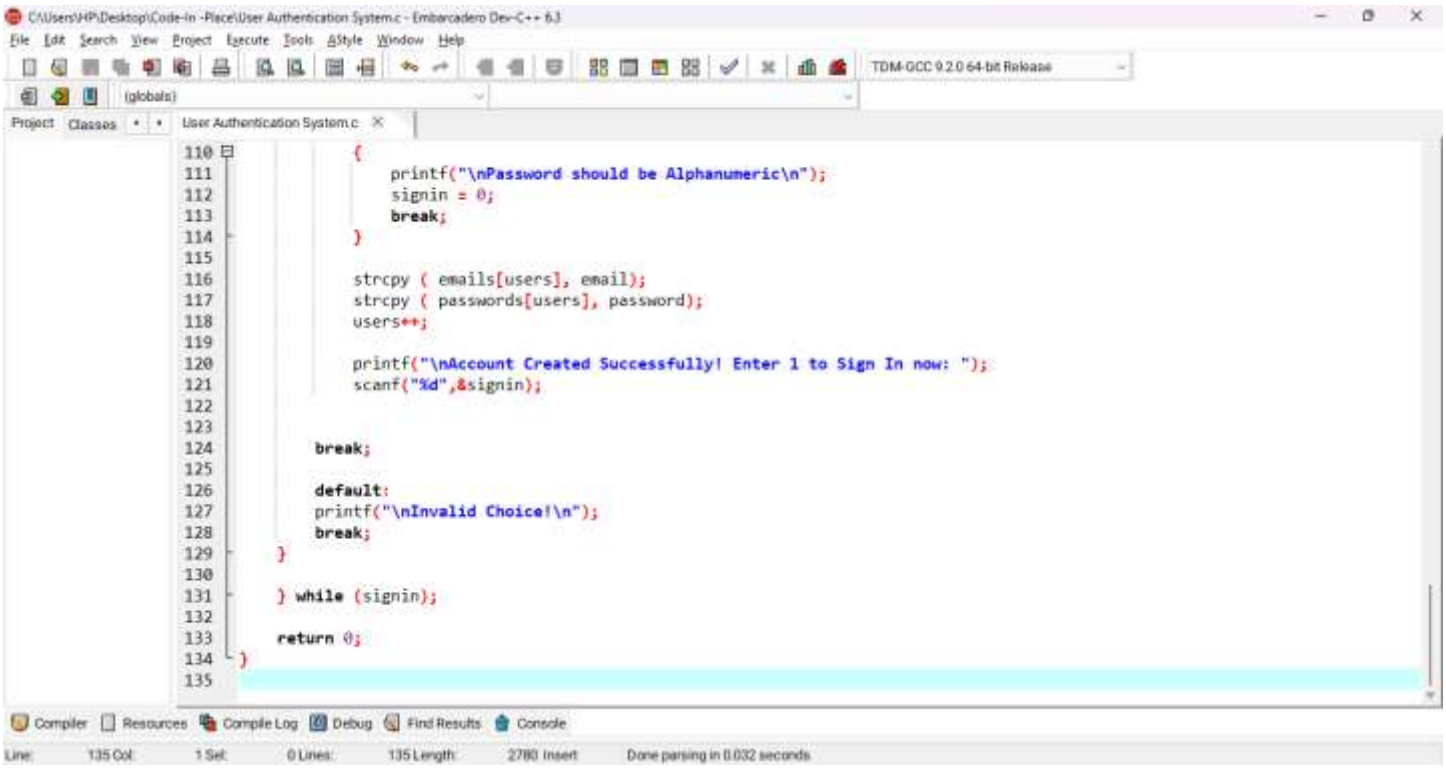
```
            printf("\nEnter Your Email: ");
            scanf("%s",email);

            for ( i=0 ; i<users ; i++)
            {
                if ( strcmp( emails[i], email) == 0 )
                {
                    printf("\nEnter Password: ");
                    scanf("%s",password);

                        if ( strcmp ( passwords[i], password) == 0)
                        {
                            printf("\nSign In Successful\n");
                            signin = 0;
                            break;
                        }
                        else
                        {
                                printf("\nInvalid Password\n");
                                signin = 0;
                                break;
                        }
                }
            }

            if (i == users)
            {
```



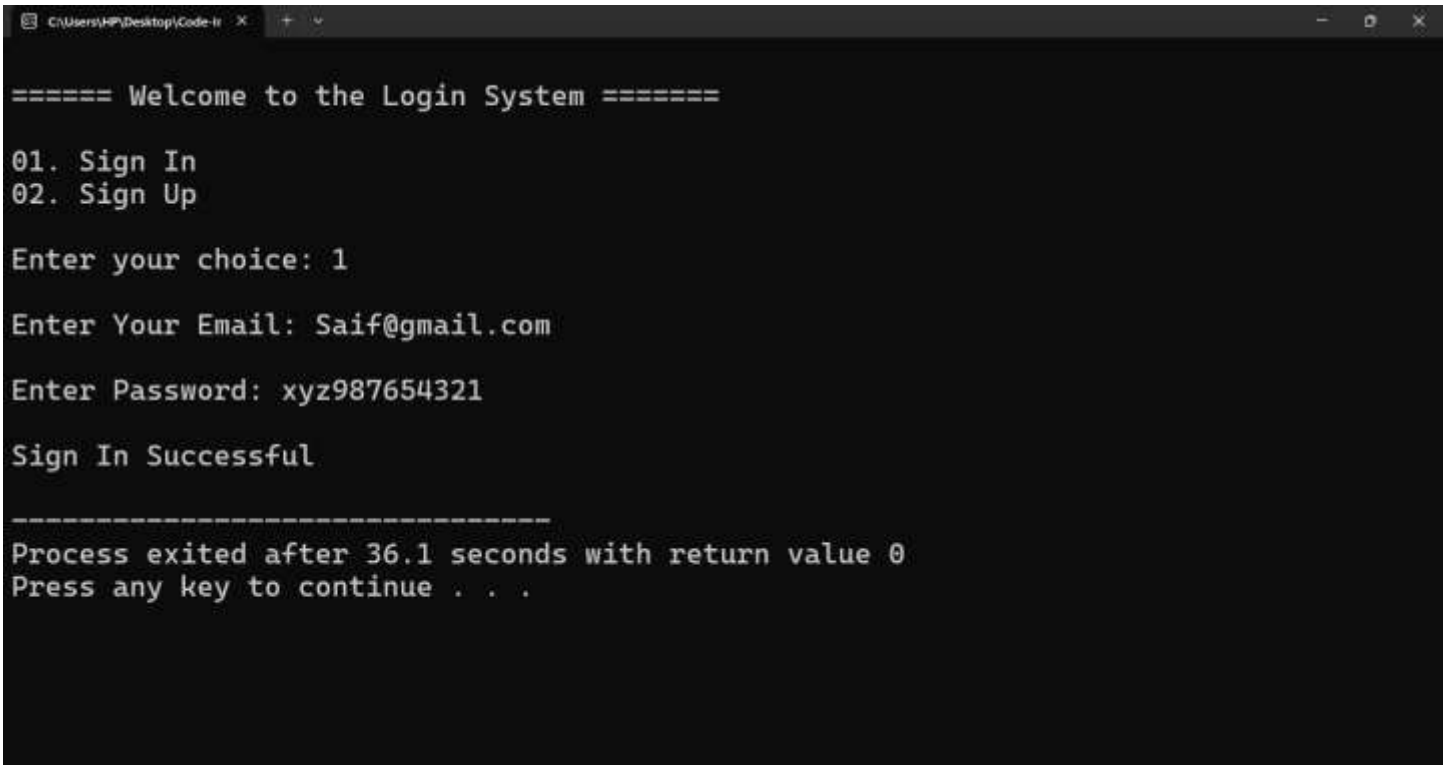
```
            if (i == users)
            {
               printf("\nInvalid Email\n");
               signin=0;
            }

        break;


        case 2:

            if ( users >= 5)
            {
                printf("\nUser Limit Reached, cannot register more users.\n");
                signin = 0;
                break;
            }

            printf("\nEnter Your Email: ");
            scanf("%s",email);

            for ( i=0 ; i<users ; i++)
            {
                if ( strcmp ( emails[i],email ) == 0)
                {
                    printf("\nEmail already exists\n");
```


C:\Users\HP\Desktop\Code-In -Place\User Authentication System.c - Embarcadero Dev-C++ 6.3
File Edit Search View Project Execute Tools AStyle Window Help
TDM-GCC 9.2.0 64-bit Release
(globals)
Project Classes
User Authentication System.c
for (i=0 ; i<users ; i++)
{
if (strcmp (emails[i],email) == 0)
{
printf("\nEmail already exists\n");
signin = 0;
break;
}
}
if (i != users) break;
printf("\nEnter Your Password: ");
scanf("%s",password);
if (strlen (password) < 8)
{
printf("\nInvalid Password, Password should consist of atleast 8 characters\n");
signin = 0;
break;
}
int digit=0;
int alphabet=0;
Compiler Resources Compile Log Debug Find Results Console
Line: 55 Col: 13 Sel: 0 Lines: 135 Length: 2780 Insert Done parsing in 0.032 seconds

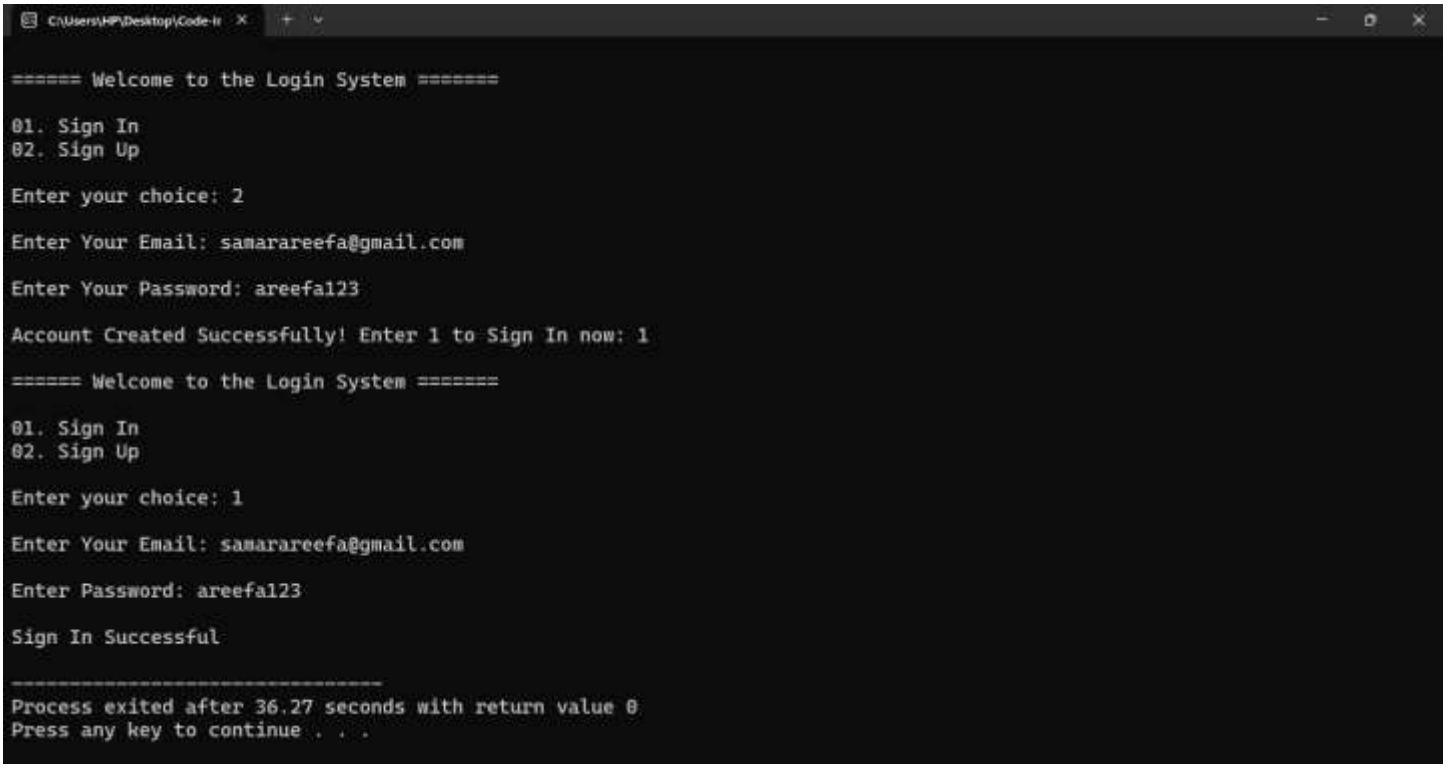

C:\Users\HP\Desktop\Code-In -Place\User Authentication System.c - Embarcadero Dev-C++ 6.3
File Edit Search View Project Execute Tools AStyle Window Help
TDM-GCC 9.2.0 64-bit Release
(globals)
Project Classes
User Authentication System.c
}
int digit=0;
int alphabet=0;
for (i=0 ; i<strlen(password) ; i++)
{
if ((password[i] >= 'A' && password[i] <= 'Z') || (password[i] >= 'a' && password[i] <= 'z'))
{
alphabet=1;
}
if (password[i] >= '0' && password[i] <= '9')
{
digit = 1;
}
}
if (digit!=1 || alphabet!=1)
{
printf("\nPassword should be Alphanumeric\n");
signin = 0;
break;
}
strcpy (emails[users], email);
Compiler Resources Compile Log Debug Find Results Console
Line: 112 Col: 28 Sel: 0 Lines: 135 Length: 2780 Insert Done parsing in 0.032 seconds


C:\Users\HP\Desktop\Code-In -Place\User Authentication System.c - Embarcadero Dev-C++ 6.3
File Edit Search View Project Execute Tools AStyle Window Help
TDM-GCC 9.2.0 64-bit Release
(globals)
Project Classes
User Authentication System.c
{
printf("\nPassword should be Alphanumeric\n");
signin = 0;
break;
}
strcpy (emails[users], email);
strcpy (passwords[users], password);
users++;
printf("\nAccount Created Successfully! Enter 1 to Sign In now: ");
scanf("%d",&signin);
break;
default:
printf("\nInvalid Choice!\n");
break;
}
} while (signin);
return 0;
}
Compiler Resources Compile Log Debug Find Results Console
Line: 135 Col: 1 Sel: 0 Lines: 135 Length: 2780 Insert Done parsing in 0.032 seconds

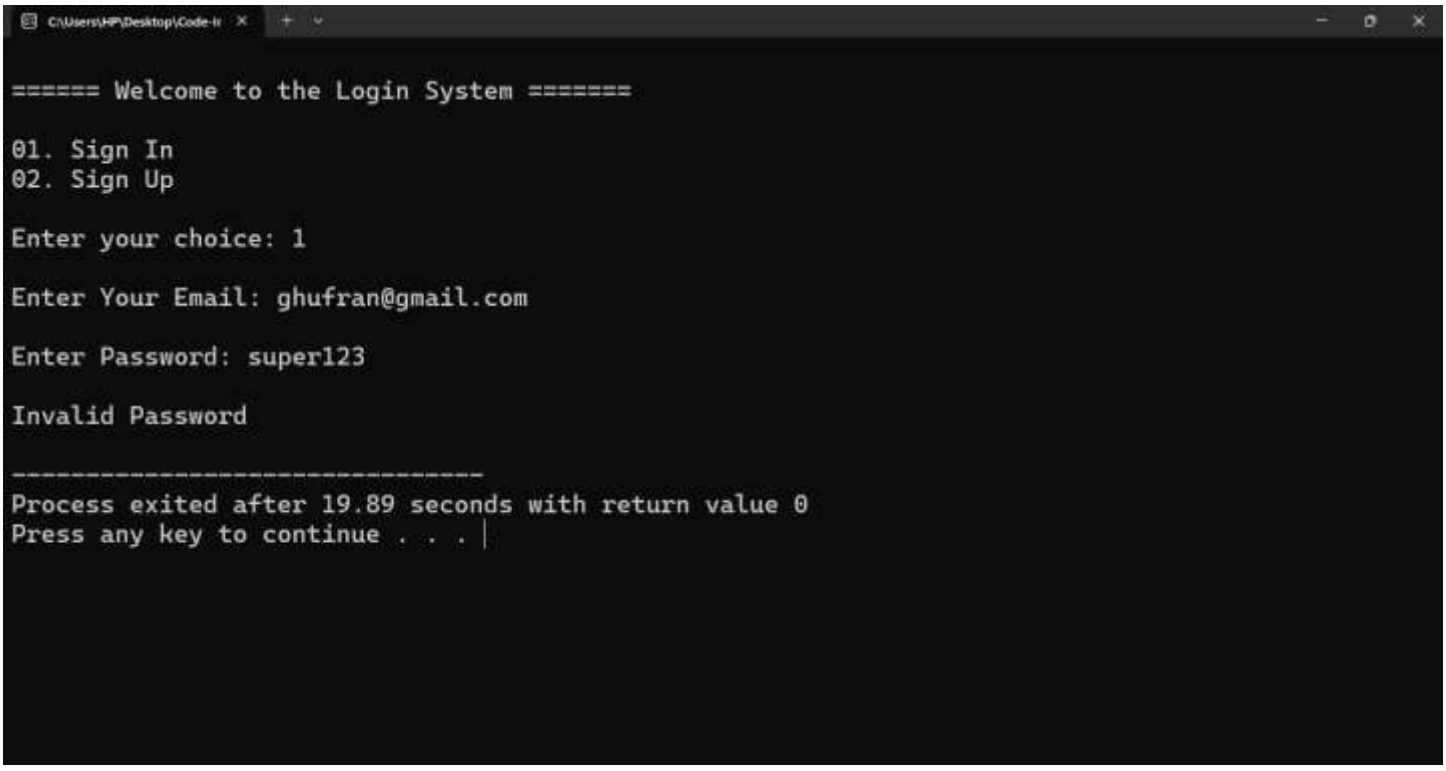
OUTPUT:


C:\Users\HP\Desktop\Code-In
====== Welcome to the Login System =======
01. Sign In
02. Sign Up
Enter your choice: 1
Enter Your Email: Saif@gmail.com
Enter Password: xyz987654321
Sign In Successful

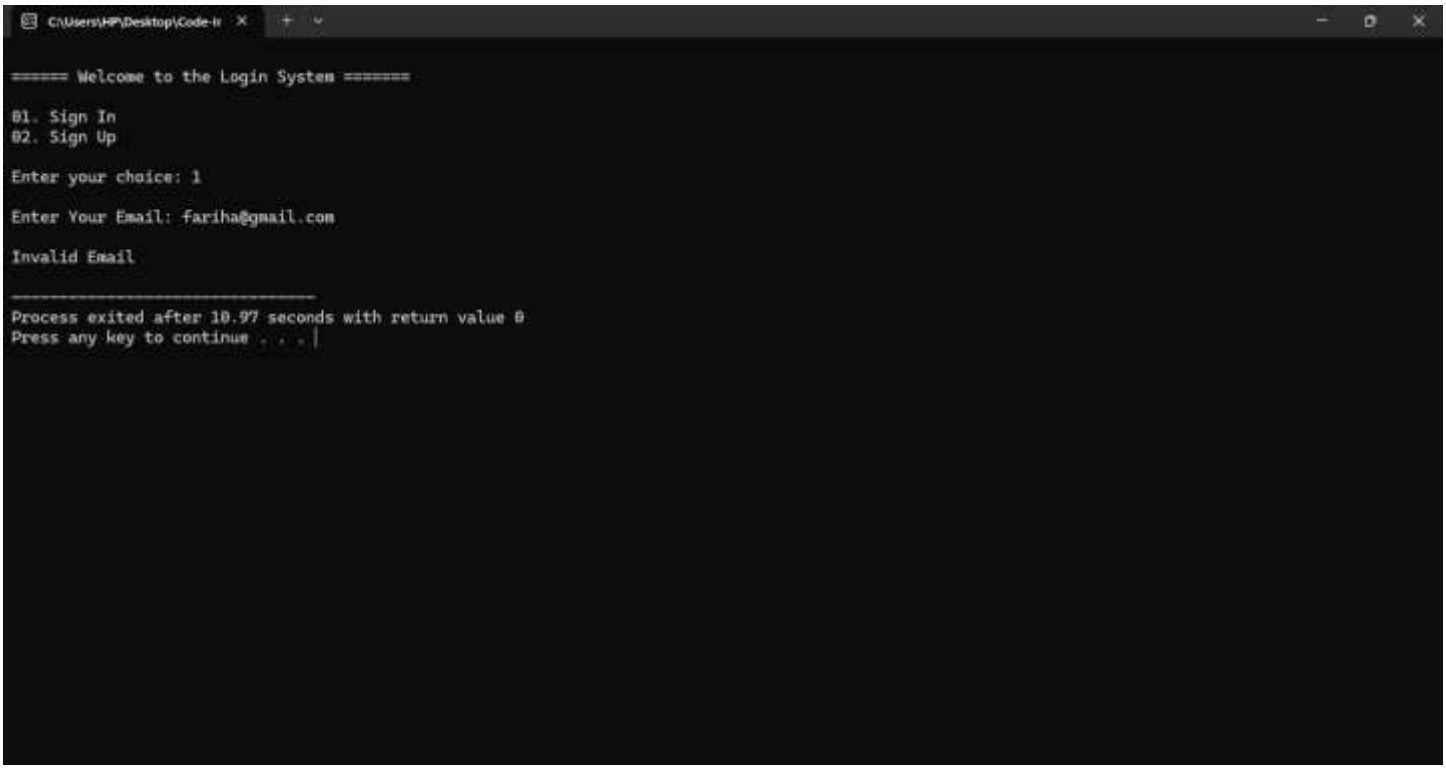
Process exited after 36.1 seconds with return value 0
Press any key to continue . . .


C:\Users\HP\Desktop\Code-b
====== Welcome to the Login System =======
01. Sign In
02. Sign Up
Enter your choice: 2
Enter Your Email: samarareefa@gmail.com
Enter Your Password: areefa123
Account Created Successfully! Enter 1 to Sign In now: 1
====== Welcome to the Login System =======
01. Sign In
02. Sign Up
Enter your choice: 1
Enter Your Email: samarareefa@gmail.com
Enter Password: areefa123
Sign In Successful

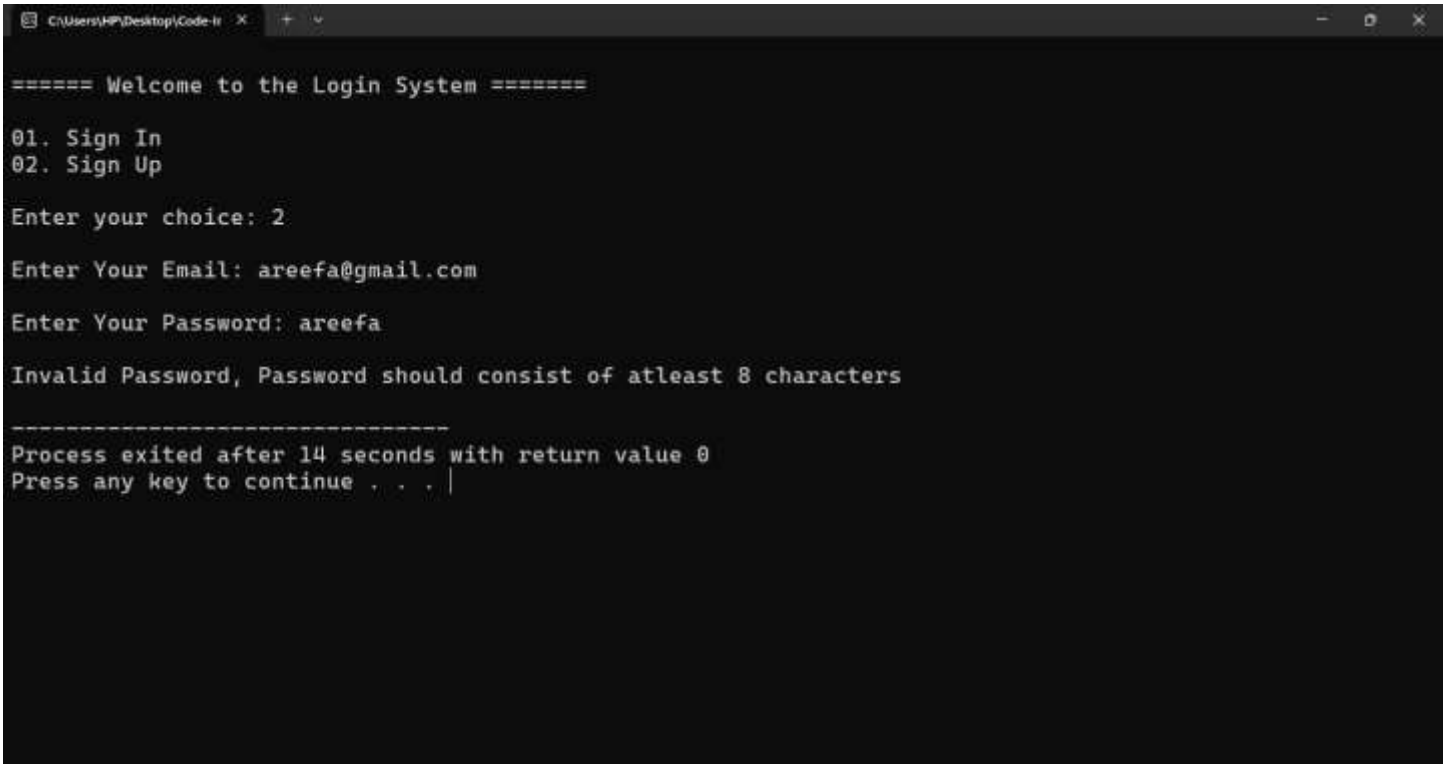
Process exited after 36.27 seconds with return value 0
Press any key to continue . . .

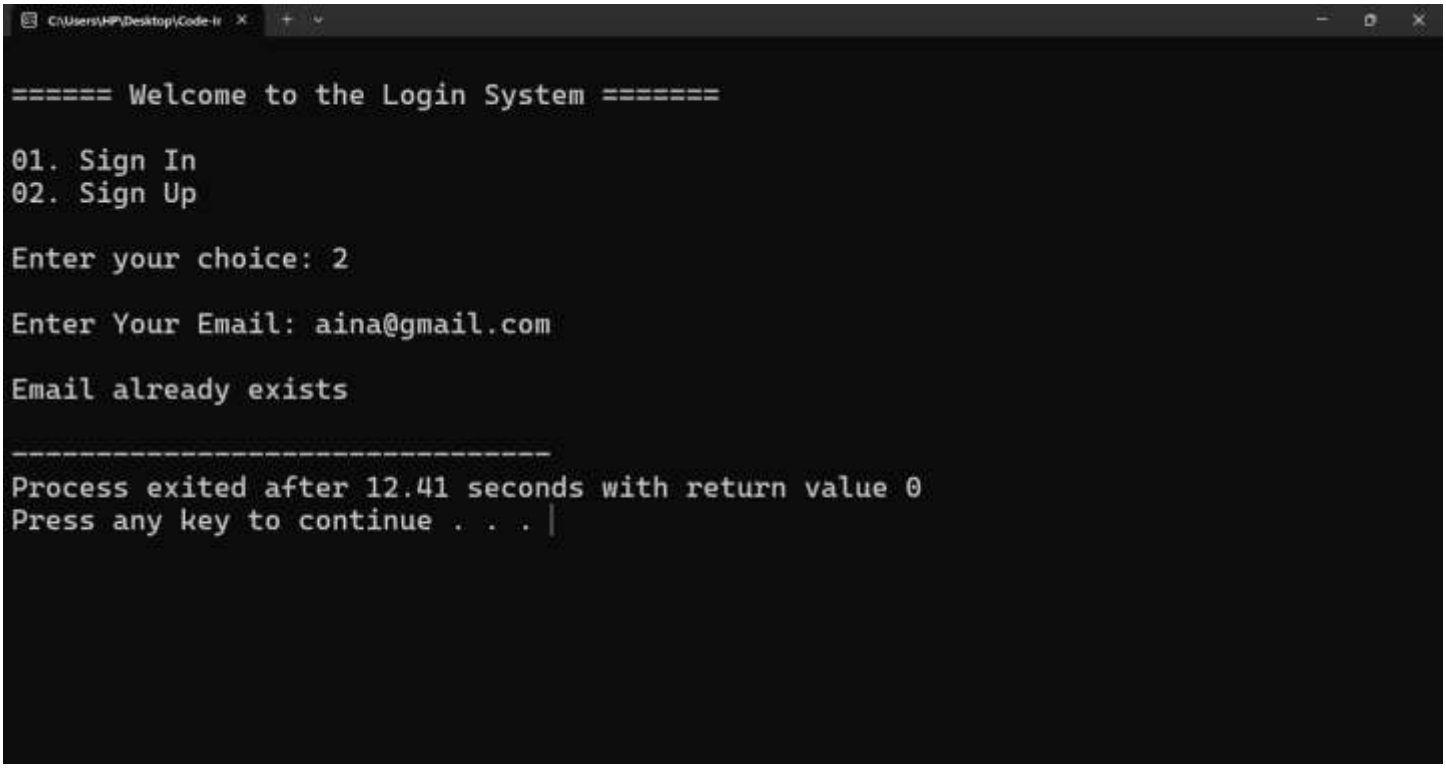

C:\Users\HP\Desktop\Code-b
====== Welcome to the Login System =======
01. Sign In
02. Sign Up
Enter your choice: 1
Enter Your Email: ghufran@gmail.com
Enter Password: super123
Invalid Password

Process exited after 19.89 seconds with return value 0
Press any key to continue . . .


C:\Users\HP\Desktop\Code-lr
====== Welcome to the Login System =======
01. Sign In
02. Sign Up
Enter your choice: 1
Enter Your Email: fariha@gmail.com
Invalid Email

Process exited after 10.97 seconds with return value 0
Press any key to continue . . .


C:\Users\HP\Desktop\Code-lr
====== Welcome to the Login System =======
01. Sign In
02. Sign Up
Enter your choice: 2
Enter Your Email: areefa@gmail.com
Enter Your Password: areefa
Invalid Password, Password should consist of atleast 8 characters
----
Process exited after 14 seconds with return value 0
Press any key to continue . . .


C:\Users\HP\Desktop\Code-ir
====== Welcome to the Login System =======
01. Sign In
02. Sign Up
Enter your choice: 2
Enter Your Email: aina@gmail.com
Email already exists

Process exited after 12.41 seconds with return value 0
Press any key to continue . . .