

Holistic Hub



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1. About Holistic Hub

1.1 Contribution Towards Computer Science

Holistic Hub, An Integrated Wellness Management System, contributes to the field of computer science by implementing a structured programming approach using C++. The project involves data handling, user management, algorithm-based wellness calculations, and user interaction via a command-line interface. It serves as a practical example of object-oriented programming, file handling, and dynamic data structures, addressing real-world wellness management needs.

1.2 Why Integrated Wellness Management System?

The purpose of this system is to improve the efficiency and effectiveness of wellness program management. Manual tracking of participants' progress, program registration, and feedback collection is prone to human error and inefficiency. By automating these tasks, the system provides a seamless way to manage wellness programs, track individual progress, and generate comprehensive reports.

The system benefits participants by allowing them to easily track their health and fitness progress while giving administrators and program managers the tools they need to manage and assess wellness initiatives.

1.3 What to Expect from Integrated Wellness Management System

1.3.1 User Roles:

Three primary user roles (Admin, Customer, and Project Manager) each have tailored access to the system's functionalities.

1.3.2 Program Management:

Admins and Programs Managers can manage wellness programs by creating, updating, and deleting them. Customers can register and participate in these programs.

1.3.3 Health Metrics:

The system allows customers to input their wellness data (e.g., weight, activity, nutrition) and tracks their progress through health metrics like BMI.

1.3.4 Feedback and Reporting:

Program managers and admins can review participant feedback and generate reports on wellness progress and program effectiveness.

2. Users of Application

Holistic Hub has four types of Users. These include Admin (who controls users' accounts and can control Wellness Programs also), Programs Manager (who Manages Wellness Programs) and Customers.

2.1 Admin

Role:

Admins manage the overall system, ensuring that user accounts and wellness programs are created, updated, and deleted as necessary. They also have access to view feedback from participants and monitor system activity.

Key Functions:

- Create new user accounts.
- Edit existing user accounts.
- Delete user accounts.
- View all users.
- Add wellness programs.
- Edit wellness programs.
- Delete wellness programs.
- View participants' feedback.
- Exit the system.

2.2 Customer (Participant)

Role:

Customers are the participants in the wellness programs. They can view available programs, register for them, and input personal wellness data to track their health progress.

Key Functions:

- View available wellness programs.
- Register for a wellness program.

- Input wellness data (e.g., weight, activity, nutrition).
- Provide feedback on wellness programs.
- Reset password
- Exit the system.

2.3 Programs Manager

Role:

Project managers oversee the wellness programs, monitor participants' progress, and assess the overall effectiveness of wellness initiatives.

Key Functions:

- View all wellness programs.
- Edit existing programs.
- Add new programs.
- Delete programs.
- View participants' feedback.
- Reset password
- Exit the system.

3. Functional Requirements of Integrated Wellness Management System

User Type	Action to be performed	Result of Action
Admin	Create new user accounts	Manage access to the system
	Edit user accounts	Update user information
	Delete user accounts	Remove inactive users
	View all users	Monitor user activity
	Add wellness programs	Create new wellness initiatives
	Edit wellness programs	Update program details
	Delete wellness programs	Remove outdated programs
	View participants' feedback	Evaluate program effectiveness

	Exit the system	Log out from the system
Programs Manager	View all wellness programs	Monitor the progress of wellness initiatives
	Edit existing wellness programs	Update program information
	Add new programs	Introduce new wellness initiatives
	Delete wellness programs	Remove ineffective or outdated programs
	Reset Password	The Manager can reset his account's password.
	View participants' feedback	Evaluate program success based on feedback
	Exit the system	Log out from the system
Customer	View available wellness programs	Find suitable programs to participate in
	Register for a wellness program	Join a wellness initiative
	Input wellness data	Track my health and fitness progress
	Reset Password	The Customers can reset their account's password
	Provide feedback on wellness programs	Share my experience
	Exit the system	Log out from the system

4. Wireframes of Integrated Wellness Management System

Below are a few wireframes of the Integrated Wellness Management System application, designed for the Command Line Interface (CLI):

StartUp Interface

View options for Sign-up, Sign-in and Exit .



Figure 1: Main Page

Sign-up

Sign-up with your Name, Password and Role. There are three user roles namely Admin, Programs Manager , and Customer.

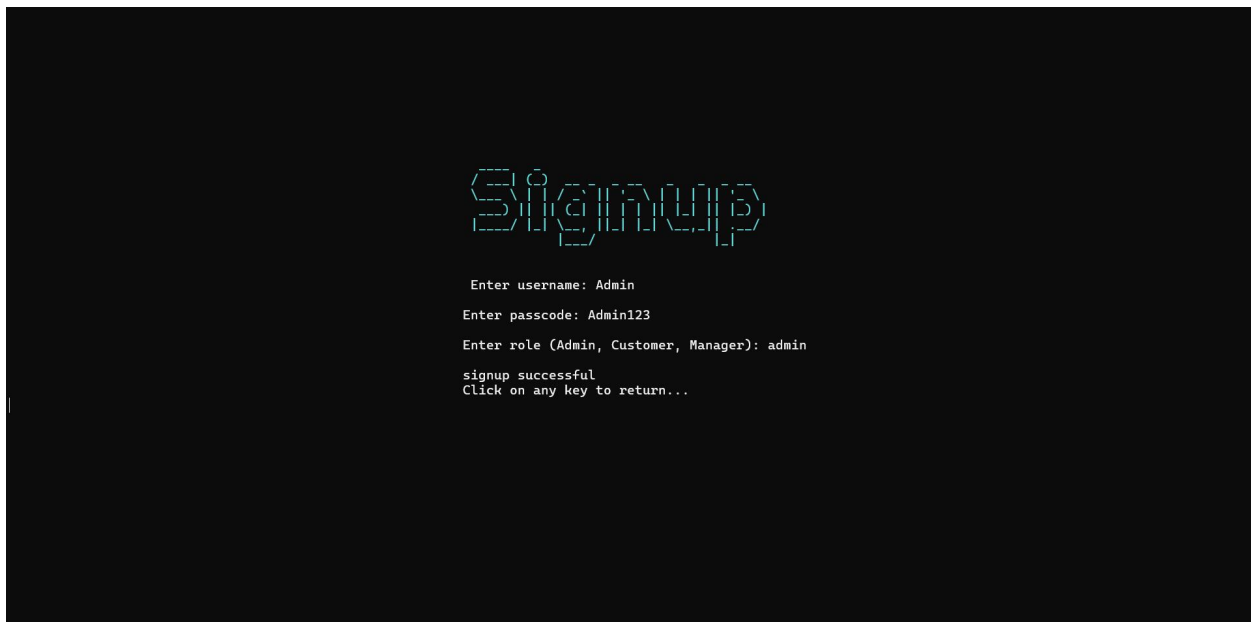


Figure 2 : Sign-up Page

Sign-in

Sign-in with your correct Username, Password and Role to view further details.



Figure 3 : Sign-in Page

Admin Menu

Admin Menu provides access to all the functionalities required by Admin User type. It includes all the roles and authorities of Admin.

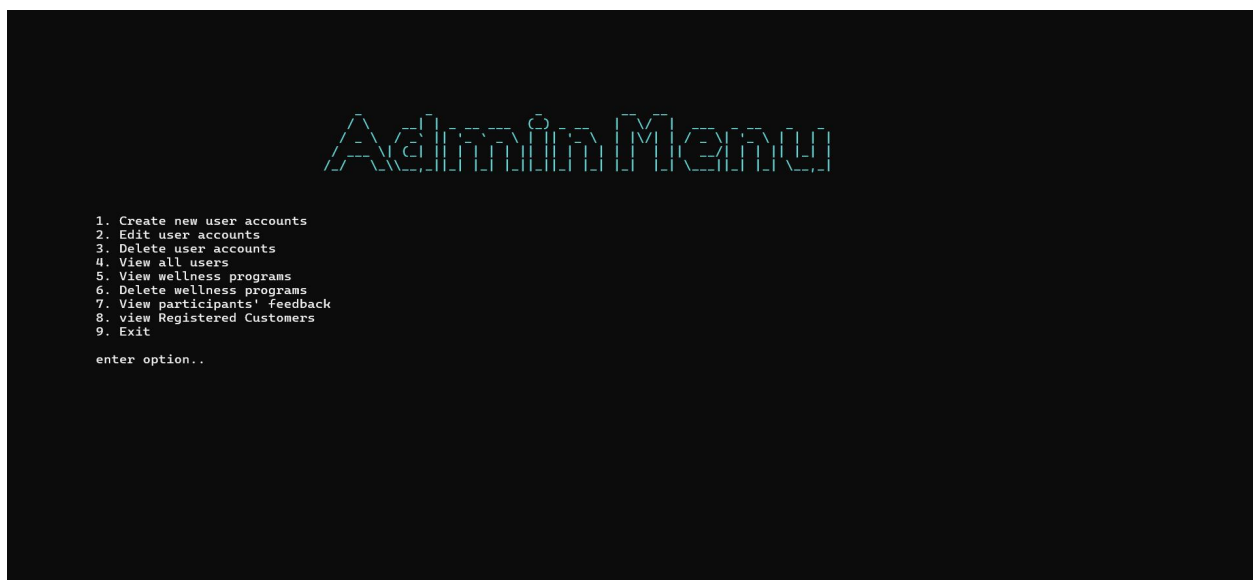


Figure 4 : Admin Menu

View All Users

Admin can monitor user activity.

```
*****
*          VIEW ALL USERS          *
*****
Username      Role
User1         Admin
Rabia         Customer
User2         Manager
Admin         Admin
Hello         Manager
None          Admin
Admin         admin
Press any key to continue...
```

Figure 5 : View all Users

View Feedbacks

```
C:\Windows\System32\cmd.e  x  +  v
*****
*          VIEW FEEDBACKS          *
*****
Name: Rabia
Program: Fitness Fusion
Feedback: feedback
Press any key to continue...
```

Figure 5: View Feedback

Delete Accounts

```

C:\Windows\System32\cmd.exe
*****
*          DELETE USER ACCOUNT          *
*****

Username      Role
Rabia         Customer
User          Manager
Admin         Admin
Hello         Manager
None          Admin
Admin         admin
Admin         admin

Enter username of the account to delete: Admin
User account deleted successfully.
Press any key to continue...
  
```

Figure 6: Delete accounts

Edit Accounts

```

C:\Windows\System32\cmd.exe
*****
*          EDIT USER ACCOUNT           *
*****

Username      Role
Rabia         Customer
User          Manager
Admin         Admin
Hello         Manager
None          Admin
Admin         admin
Admin         admin

Enter the username to be edited:
User
Enter new Username: Hello
Enter new Password: Hello123
Enter new Role: admin
Account updated successfully
Press any key to continue...
  
```

Figure 7: Edit accounts

Programs Manager Menu

The Programs Manager Menu provides access to all the features and functions required by the Programs Manager.



Figure 8: Manager Menu

View all Wellness Programs

The programs Manager can View all the Wellness Programs.

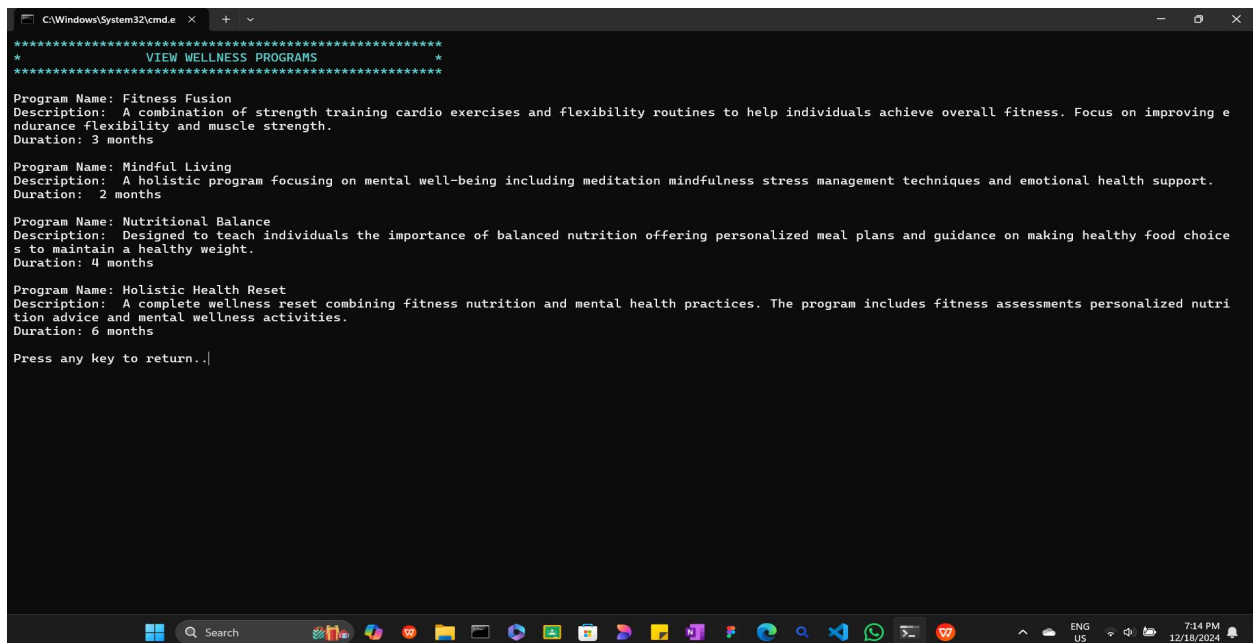
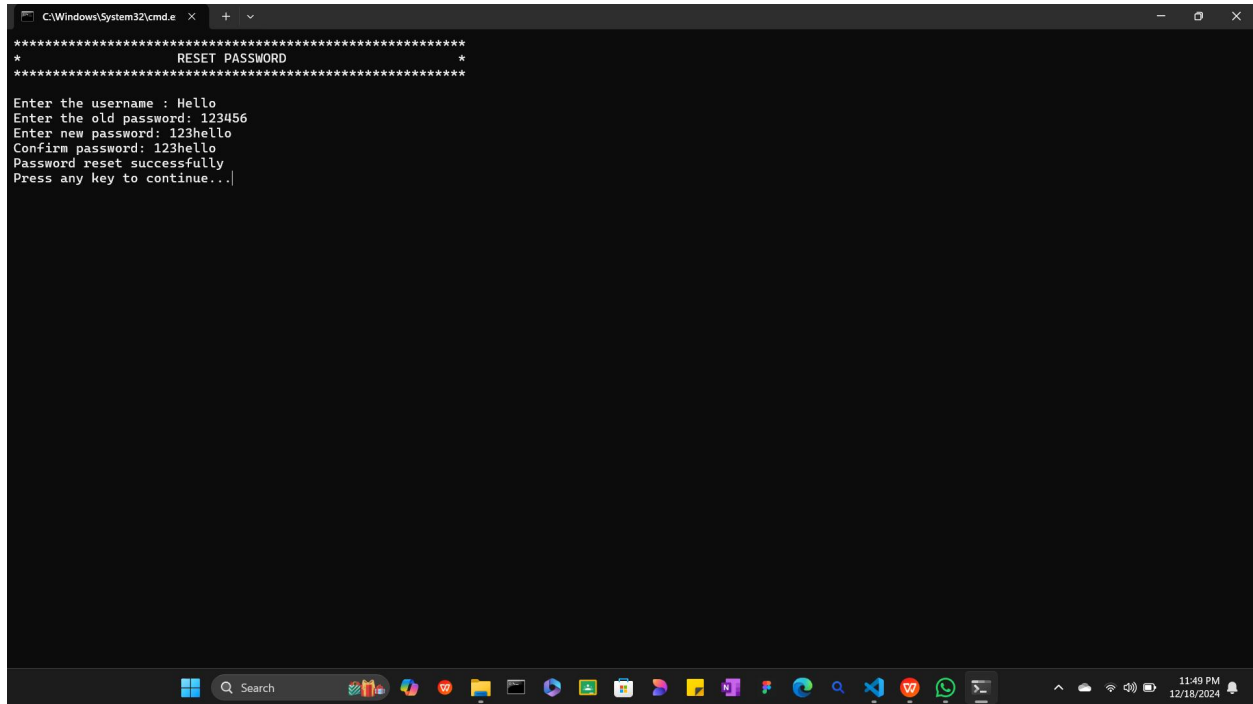


Figure 9: View Programs

Reset Password



```
C:\Windows\System32\cmd.e  x  +  v

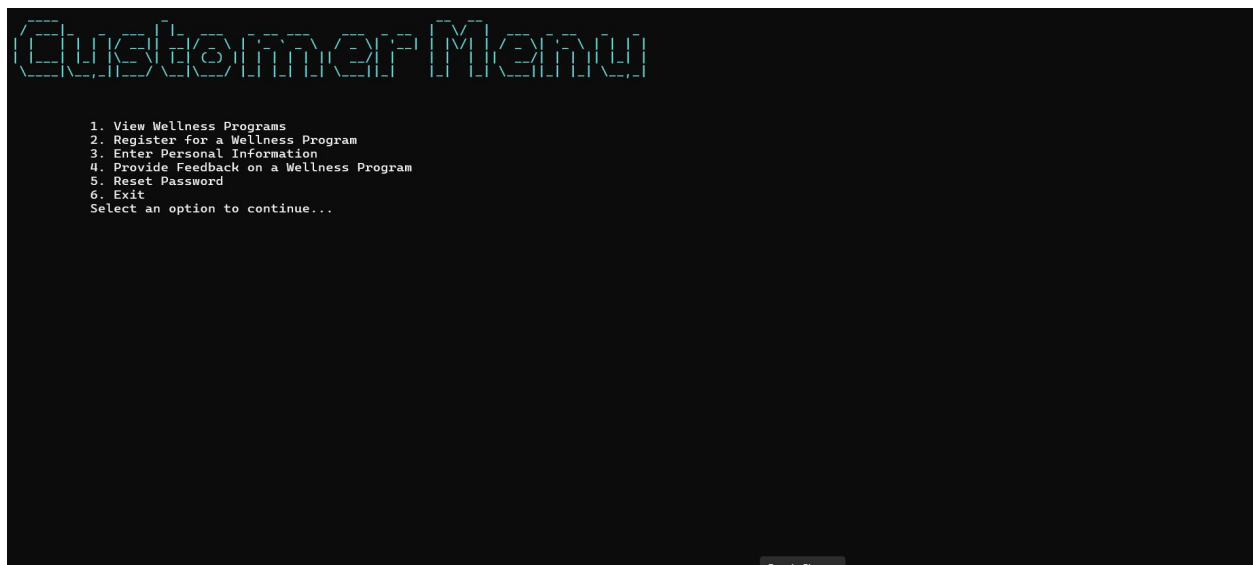
*****
*               RESET PASSWORD               *
*****

Enter the username : Hello
Enter the old password: 123456
Enter new password: 123hello
Confirm password: 123hello
Password reset successfully
Press any key to continue...|
```

Figure 10: Reset Password

Customer menu

The customer menu provides Customer an interface to manage their accounts and to enter their wellness data. It also allows the customers to enroll in programs and view available programs.



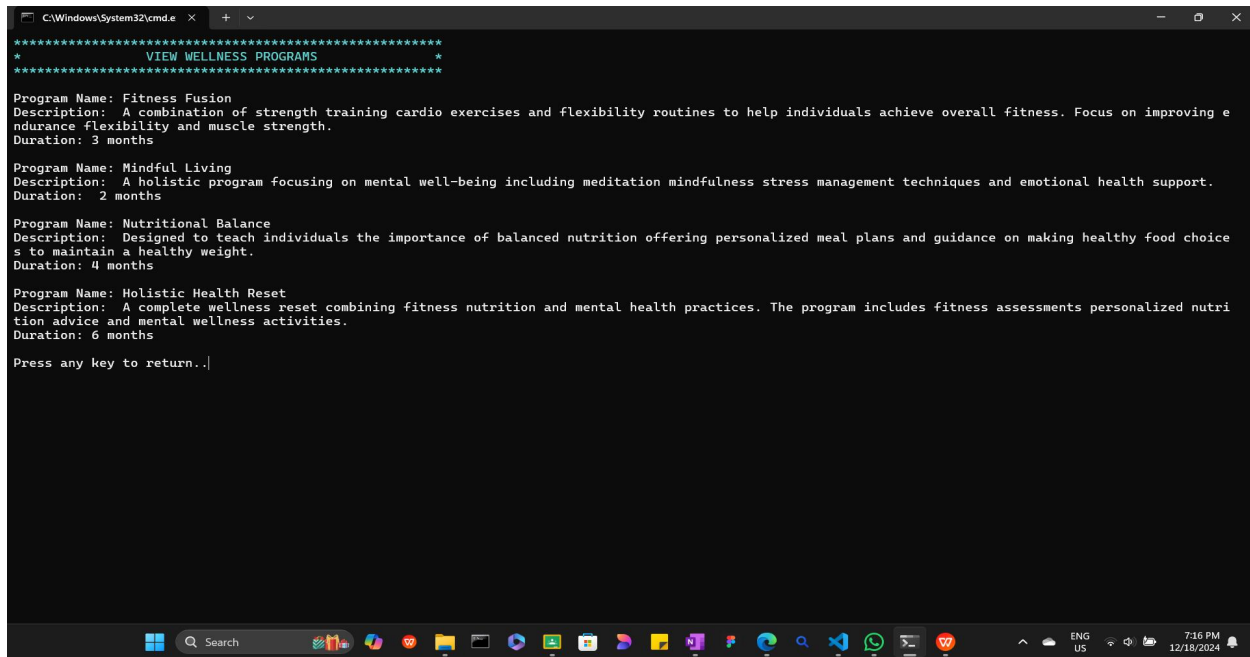
```
Customer Menu

1. View Wellness Programs
2. Register for a Wellness Program
3. Enter Personal Information
4. Provide Feedback on a Wellness Program
5. Reset Password
6. Exit
Select an option to continue...
```

Figure 11: Customer Menu

View All Available Programs

Customer can view all available programs and find suitable programs to participate in.



```

C:\Windows\System32\cmd.exe
*****
*               VIEW WELLNESS PROGRAMS               *
*****

Program Name: Fitness Fusion
Description: A combination of strength training cardio exercises and flexibility routines to help individuals achieve overall fitness. Focus on improving endurance flexibility and muscle strength.
Duration: 3 months

Program Name: Mindful Living
Description: A holistic program focusing on mental well-being including meditation mindfulness stress management techniques and emotional health support.
Duration: 2 months

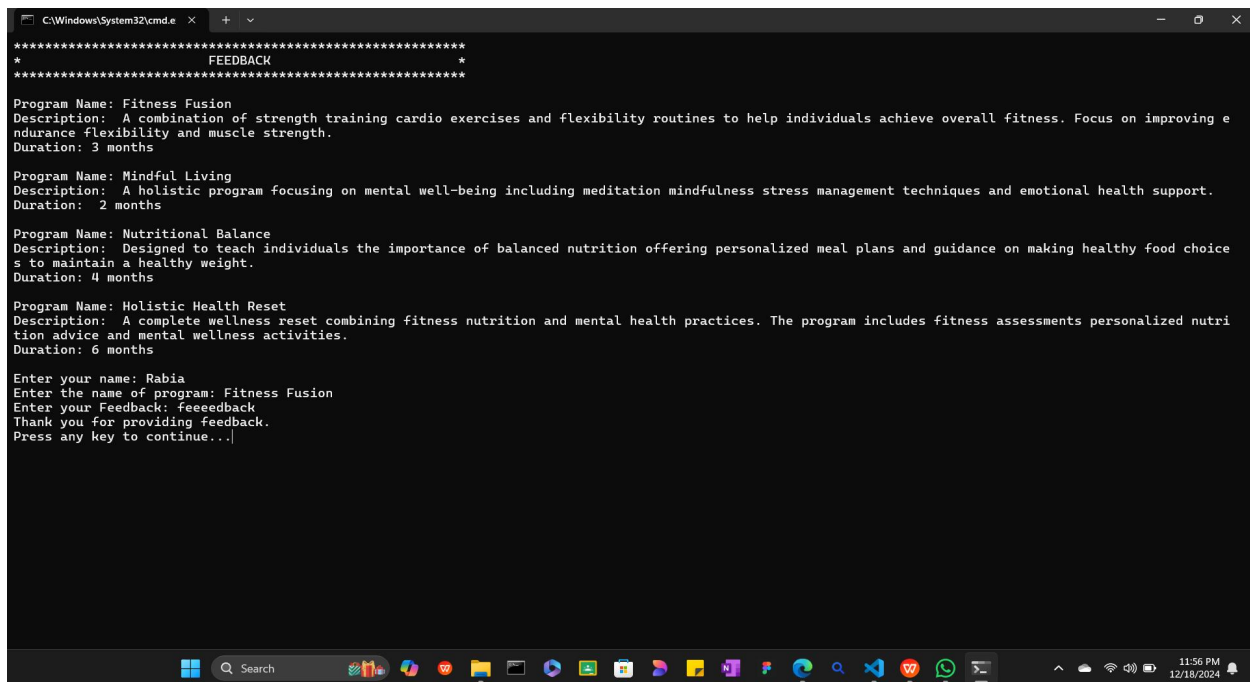
Program Name: Nutritional Balance
Description: Designed to teach individuals the importance of balanced nutrition offering personalized meal plans and guidance on making healthy food choices to maintain a healthy weight.
Duration: 4 months

Program Name: Holistic Health Reset
Description: A complete wellness reset combining fitness nutrition and mental health practices. The program includes fitness assessments personalized nutrition advice and mental wellness activities.
Duration: 6 months

Press any key to return..|
  
```

Figure 12: View Programs

Provide feedback



```

C:\Windows\System32\cmd.exe
*****
*               FEEDBACK               *
*****

Program Name: Fitness Fusion
Description: A combination of strength training cardio exercises and flexibility routines to help individuals achieve overall fitness. Focus on improving endurance flexibility and muscle strength.
Duration: 3 months

Program Name: Mindful Living
Description: A holistic program focusing on mental well-being including meditation mindfulness stress management techniques and emotional health support.
Duration: 2 months

Program Name: Nutritional Balance
Description: Designed to teach individuals the importance of balanced nutrition offering personalized meal plans and guidance on making healthy food choices to maintain a healthy weight.
Duration: 4 months

Program Name: Holistic Health Reset
Description: A complete wellness reset combining fitness nutrition and mental health practices. The program includes fitness assessments personalized nutrition advice and mental wellness activities.
Duration: 6 months

Enter your name: Rabia
Enter the name of program: Fitness Fusion
Enter your Feedback: feeeedback
Thank you for providing feedback.
Press any key to continue..|
  
```

Figure 13: Provide Feedback

Personal Information

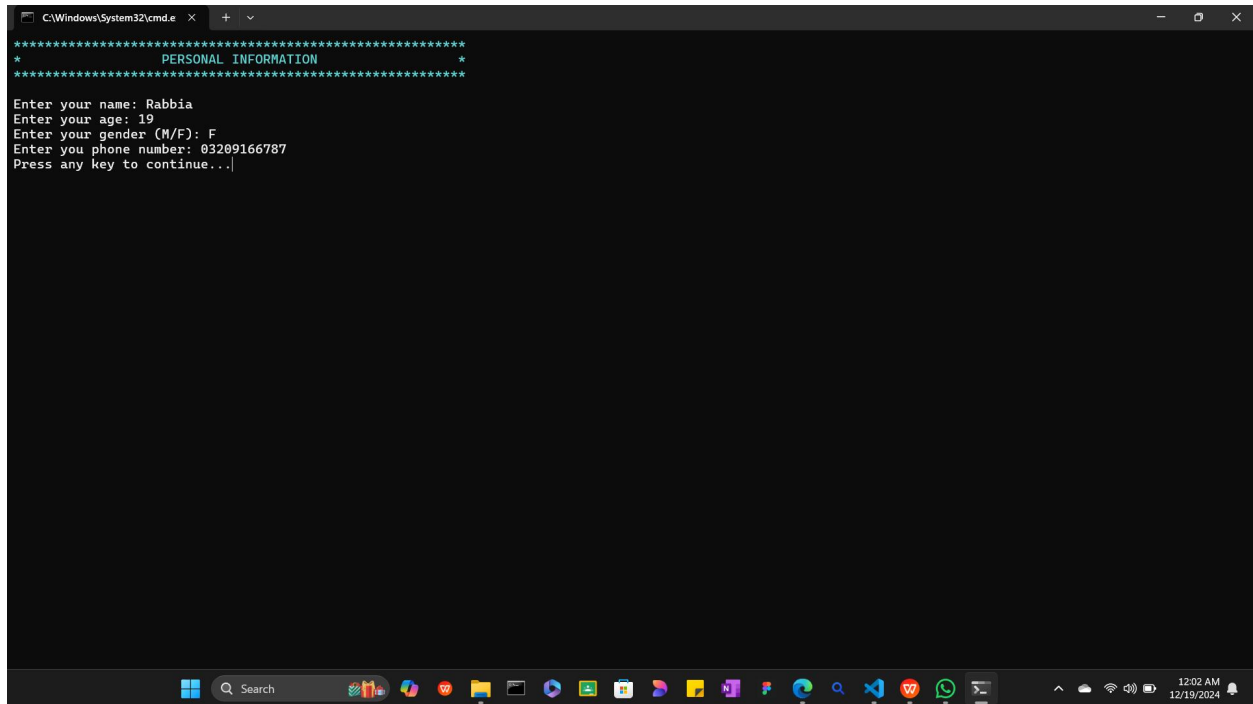


Figure 14: Personal Information

5. Data Structures (Parallel Arrays and 2D Arrays)

Parallel Arrays are used to store data of users (usernames, passwords and role). The data of programs, customers records and feedbacks are stored in 2D Arrays.

```
string username[50];  
string pass[50];  
string role[50];  
int idx=0;  
  
int idxp;  
const int maxProgram=50;  
string programs[maxProgram][3];  
  
int idxc;  
const int MAX_customerRecords=50;
```

```
string customerInfo[MAX_customerRecords][4];
```

```
int idxr;
```

```
const int MAX_registered=100;
```

```
string registeredCustomers[MAX_registered][6];
```

```
int idxf=0;
```

```
const int MAX_FEEDBACK=100;
```

```
string feedback[MAX_FEEDBACK][3];
```

```
int currentMenu;
```

```
string signin_username, signin_pass, signin_role;
```

```
string edit_user;
```

Function Prototypes

```
void header();
```

```
void adminmode_Header();
```

```
int admin();
```

```
void programsManager_Header();
```

```
int programs_manager();
```

```
void customer_Header();
```

```
int customer();
```

```
void signup_Header();
```

```
void signin();
```

```
int signup_options();
```

```
void createNewUser_Header();
```



```
void editacc_header();
void deleteAccounts_Header();
void viewAllUser_Header();
void viewFeedback_Header();
void viewPrograms_Header();
void addPrograms_Header();
void deleteProgram_Header();
void updateProgram_Header(string programs[][3], int &idxp, const int maxProgram);
void registerForProgram_Header();
void personalInfo_Header();
void provideFeedback_Header();
void resetPass_Header();

bool signup(string username[], string pass[], string role[], int &idx);
void displayUserAccounts(string username[], string pass[], string role[], int &idx);
bool createNewUser(string username[], string pass[], string role[], int &idx);
bool EditAccounts(string edit_user, string username[], string pass[], string role[], int
&idx);
void viewRegisteredCustomers(string registeredCustomers[][6], const int
MAX_registered, int &idxr);
string deleteAccounts(string username[], string pass[], string role[], int &idx);
void ViewallUsers(string username[], string pass[], string role[], int &idx);
void viewFeedback(int &idxf, string feedback[][3], const int MAX_FEEDBACK);

void viewPrograms(string programs[][3], int &idxp, const int maxProgram);
bool addPrograms(string programs[][3], int &idxp, const int maxProgram);
string deleteProgram(string programs[][3], int &idxp, const int maxProgram);
bool updateProgram(string program, string programs[][3], int &idxp, const int
maxProgram);
```

```
bool registerForProgram(string username[], string pass[], string role[], int &idx,string  
programs[][3], int &idxp, const int maxProgram, int &idxc,string registeredCustomers[][6],const  
int MAX_registered, int &idxr);
```

```
void personalInfo(string customerInfo[][4],const int MAX_customerRecords, int &idxc);
```

```
void provideFeedback(int &idxf, string feedback[][3], const int MAX_FEEDBACK);
```

```
bool resetPass(string username[], string pass[], string role[], int &idx);
```

```
bool isAplphabetOny(string x);
```

```
bool firstLetterCapital(string x);
```

```
bool isNumberOnly(string x);
```

```
bool isAlNum(string x);
```

```
bool isValidRole(string x);
```

```
int lenghtOfString(string x);
```

```
bool email_check(string email);
```

```
void readData(string username[], string pass[], string role[], int &idx);
```

```
void writeData(string username[], string pass[], string role[], int &idx);
```

```
string getField(string record, int field);
```

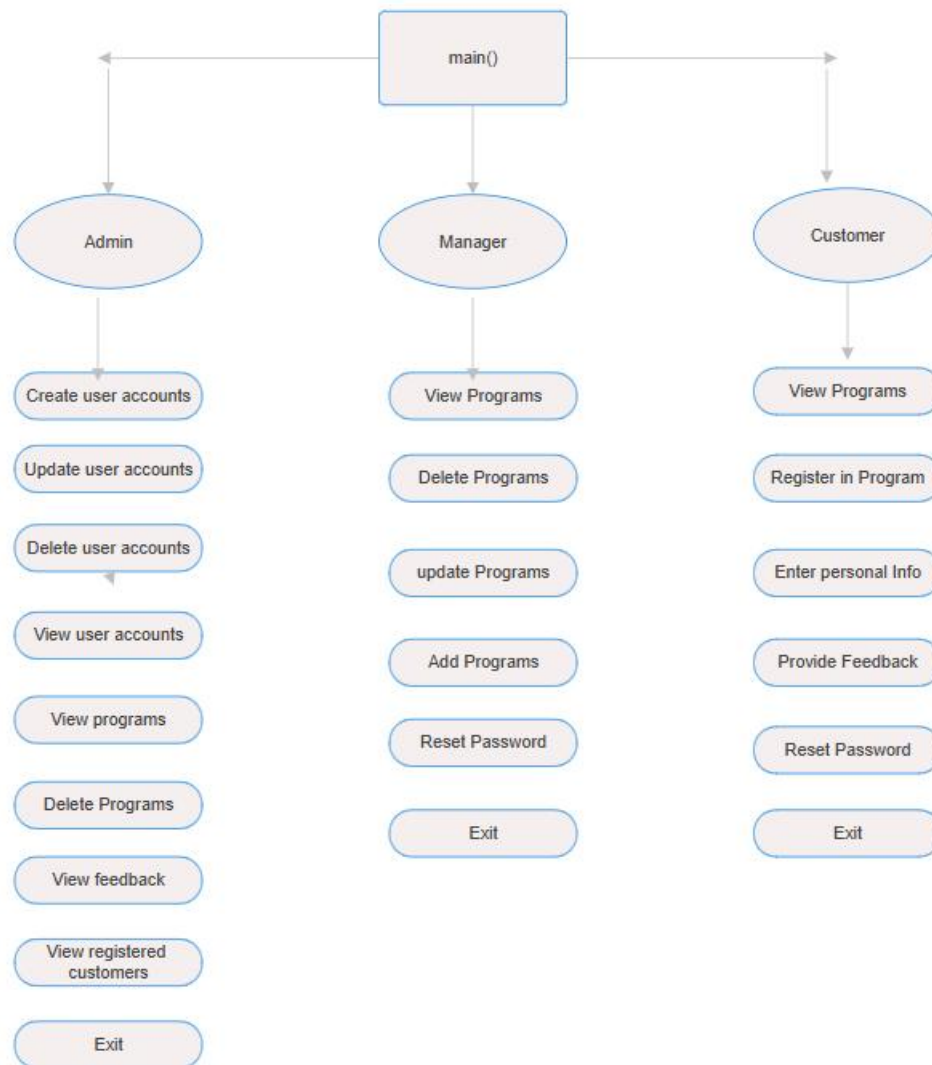
```
void writePrograms_ToFile(string programs[][3],const int maxProgram , int &idxp);
```

```
void readPrograms_FromFile(string programs[][3],const int maxProgram , int &idxp);
```

```
void setColor(int textColor, int bgColor);
```

```
void gotoxy(int x, int y);
```

6. Functions Working Flow



7. Weakness in the Application

- The application does not provide detailed information about wellness programs, such as session timings, program facilitators, or prerequisites.
- Users cannot recover their accounts if they forget their username or password.
- There is no option for customers to pause or reschedule their registered programs.
- The system lacks automated notifications or reminders for program schedules.

- Admins cannot view detailed reports or analytics about the programs' performance or user engagement.

8. Future Directions

- Add detailed descriptions for wellness programs, including session schedules and facilitator information.
- Implement an account recovery system to allow users to retrieve or reset their credentials.
- Introduce a feature to enable customers to pause, reschedule, or cancel their registrations.
- Allow managers to set and manage schedules for program sessions and trainers.
- Integrate automated notifications via email or SMS to remind users of upcoming sessions or deadlines.