PROJECT REPORT

Title : Gym Management System

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2nd Semester

Computer Programming

Information Technology

National Institute of Technology, Raipur

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<u>Abstract :</u>

In this term paper, I made a console based application which represents an effective and an errorless Gym Management System. This Gym management system has been developed using C++ programming language. The objective of this gym management system is to enable the user to add members and staff to a gym and to manage the fee payment of the gym user. A Body Mass Index Calculator has also been designed which take weight and height as inputs and regularly informs whether the user is under-weight, over-weight or obsessed. The best part of this project is that there are no errors and warning contents in this project and the design of the project is so simple that the users would not find it difficult to use this application.

This Gym Management System tool is basically developed to aid the user to add a member to the gym. The user shall be able to add the name, date of birth and contact phone number of the member. It shall help the user to know about fee payments. It has the option to select type of Gym Membership. It could be silver membership, gold membership or a diamond membership depending on the choice of the member. So, after using this application one can definitely say that this gym management system application is highly effective in work and is highly user-friendly.

Introduction :

Our Gym Management Software is a complete gym and recreation facility system program which looks after all of your members, memberships and activities .It is designed for gym, and health clubs. Our Gym management Software provides lots of functions such data entry of customer, keeping records of all the things about customer's fees, plan, and physical fitness which help to provide good quality of services to customer from gym managers.

In the source code of this gym management system application, basic principles of object oriented programming, file handling and general data structure and algorithm knowledge has been frequently used. To be more familiar and used to this project we must be first familiar with its technical details.

The code of this applications contains a class with the following specifications :

Class Name :: user

Data Members and its use :

char names[50]   : character array to store gym member name

long phonenumber   : to store contact number of gym member

char dob[10]   : to store date of birth of user

float weights   : to store weight of user in Kgs

float heights   : to store height of user in cm

float bmi   : to store body mass index of user

int account   :   to storm type of gym membership

char designation[15] :   to store post of gym staff

int salary   :   to store salary o gym staff

int numberofmonths : to store membership subscription period

int bill   : to store bill of gym member

char joining_date[14] : to store joining date of gym member

Member Methos of Class User :

float bmi_calculator() : to calculate body mass index of user

void normalweight(), void heavyweight(), void underweight (): functions to print tips for healthy weight , over weight and under weight persons

void user_mode ()   : to direct application to user mode portal

void admin_login () : to direct application to admin portal

void mode_portal() : to direct application to mode portal

void join_member (): function to add new gym member

void search_member() : function to search gym member

void edit_member() : function to edit gym member details

void quit_member (): function to delete gym member account

void display_user_data() : to display all gym members data

void add_staff() : to add a new gym staff member

void search_staff() : to search a gym staff member

void search_customer() : to search a gymmember

void edit_staffmember() : to edit gym staff member details

void delete_staff() : to delete gym staff member

void delete_customer() : to delete gym members details

void get_staff_data() : to get gym staff data

void exit_application() : to exit the program

Files Name and their use :

Database.txt : a text file to store details of gym member. Basically, this file act as a database to store details like name, phonenumber, account, dob, weight, height, bmi , salary, numberofmonths of the gym member.

Staff.txt : a text file to which act as a database to store details of gym staff members.

Working and Description of source code :

Like any C++ program the code execution of my program will begin from main( ) function. In main( ) function, an object of class user has been created which gives compiler command to mode_portal() function which looks like :

```
ENTER 1 :: TO USE THIS APPLICATION IN USER MODE
ENTER 2 :: TO USE THIS APPLICATION IN ADMIN MODE
ENTER 3 :: TO EXIT THIS APPLICATION
ENTER YOUR CHOICE
```

Now, in mode_portal( ) function there is a menu driven program. In this program if the user enters 1 then the compiler execution will go to user_mode( ) function, if user enters 2 then compiler goes to admin_portal( ) for execution lese if user enters 3 then program will terminate and exit_application( ) function will be invoked. When user enters 1

```
ENTER 1  :  TO JOIN GYM
ENTER 2  :  TO EDIT YOUR PROFILES
ENTER 3  :  TO DELETE ACCOUNT
ENTER 4  :  TO CALCULATE YOUR BODY MASS INDEX (BMI)
ENTER 5  :  READ SUGGESTIONS FOR UNDERWEIGHT PEOPLE
ENTER 6  :  READ SUGGESTIONS FOR HEALTHY WEIGHT PEOPLE
ENTER 7  :  READ SUGGESTIONS FOR HEAVY WEIGHT OR OBSESSE PEOPLE
ENTER 8  :  TO GO BACK TO MAIN MENU PORTAL
ENTER 9  :  TO SEARCH FOR YOUR PROFILE DETAILS
ENTER 10 :  TO EXIT THIS APPLICATION
ENTER YOU CHOICE
```

When user enters 2 , compliers command to admin_portal( )

```
ENTER ADMIN NAME
```

When use enters 3, an appropriate message will be displayed for the exit of the application

```
*********************************************************************
*********************************************************************
**                                                               **
**          THANK YOU FOR USING OUR APPLICATION                  **
**                                                               **
*********************************************************************
*********************************************************************
```

When user enter invalid choice then also an appropriate message id displayed.

```
**********************************************************************
**                INVALID DETAILS NO ACCOUNT FOUND                **
**********************************************************************
```

In the user portal, there is a menu which asks the user to enter choice according to the choice. If the users enters 1 ,then join_member( ) will be invoked and it will asks the user to enter details. if user enters 2, then function edit_member( ) will be invoked and user will be asked details to update his or her details. When 3 will be entered quit_member( ) will be called. Choice 4 is to calculate the Body Mass Index of user and choice 5,6 and 7 are used to display health tips for users according to their Body Mass Index. Choice 8, will take back the user to mode_portal( ) function and choice 9 is for users to search for their profile details. If the user enters 10 as its choice then the program will terminate and for any other number as its choice an appropriate error message will be displayed which is handled well by the programmer.

To Join GYM works as follows :

```
ENTER YOUR NAME
vedansh

ENTER YOUR PHONE NUMBER
7355604117

ENTER YOUR WEIGHT   IN Kgs
81.2

ENTER YOUR HEIGHT   in cm
170.1


ENTER YOUR DATE OF BIRTH      FORMAT(dd/mm/yyyy)
31012002


ENTER 1 TO JOIN    SILVER    MEMEBERSHIP   ->>>> FEES ( Rs 2000 /- MONTH )
ENTER 2 TO JOIN    GOLD      MEMEBERSHIP   ->>>> FEES ( Rs 3000 /- MONTH )
ENTER 3 TO JOIN    DIAMOND   MEMEBERSHIP   ->>>> FEES ( Rs 4000 /- MONTH )
3

 ENTER JOINING DATE
12082021
```

```
*************************************************************************
**            BUDDY !  YOUR GYM WORLD ACCOUNT HAS BEEN CREATED SUCCESSFULLY      **
*************************************************************************
**                                                                     **
**                                                                     **
**            YOUR GYM MEMBER    ID  7355604117 KEEP IT SAFE WITH YOU   **
**                                                                     **
**                                                                     **
*************************************************************************
```

When the user enters 4, bmi_calculator( ) function will be invoked and execution will look like: the console will ask the user to input details like weight in kilograms and height in centimetres so that is can calculate the body mass index of the user.

// console asking for details

```
ENTER YOUR WEIGHT IN Kgs
81.2

ENTER YOUR HEIGHT IN cm
174.2
```

// Body Mass Index of the user has been calculated and displayed

```
*************************************************************************
**                                                                     **
**                  YOUR CURRENT BODY MASS INDEX (BMI) is      26.7584  **
**                                                                     **
*************************************************************************
*************************************************************************
**                                                                     **
**                                                                     **
**                  BUDDY ! YOU ARE OVERWEIGHT                          **
**                                                                     **
**                                                                     **
*************************************************************************
*************************************************************************
```

If the user enters 5 then tips will be displayed for under weight people, similarly if the user enters 6 then then tips for healthy weight people will be displayed and if the user enters 6 then health tips for overweight people will be displayed.

```
*************************************************************************
*************************************************************************
**                                                                     **
**          HEY ! BUDDY LET US DISCUSS SOME PLANS TO LOSE WEIGHT        **
**                                                                     **
**          1 : Be physically active as you can be                     **
**                                                                     **
**          2 : Track what you eat                                     **
**                                                                     **
**          3 : Take weight loss friendly food                         **
**                                                                     **
**          4 : Eat soluble fiber                                      **
**                                                                     **
**          5 : Avoid eating food containing fats and carbohydrates    **
**                                                                     **
**          6 : Do workout to burn your calories                       **
**                                                                     **
**          7 : Stay motivated to maintain weight                      **
**                                                                     **
*************************************************************************
*************************************************************************
```

In user portal menu the other functions are easy and can be understood when they are run on the console. So, the basic working and logic behind the working of gym management system has been understood. This completes the section of user portal which tells that how our gym management system has been working without any flaws.

Now, coming to the admin login portal. Since the powers and authority of the gym head member is restricted so the admin-login portal is password protected. The admin name is

supreme_power and its password is **give_access.** Note the password and admin name are case sensitive and portal will be locked for any other entries. If the entered details will be right then access granted message will be displayed and if the entries will be wrong then access denied message will be displayed.

```
***********************************************************
****                                                   ****
****                                                   ****
****      ADMIN PORTAL    ::::::::      ACCESS GRANTED  ****
****                                                   ****
****                                                   ****
***********************************************************
```

```
***********************************************************
****                                                   ****
****                                                   ****
****    ADMIN PORTAL                   ACCESS DENIED    ****
****                                                   ****
****                                                   ****
***********************************************************
```

Once the access to the admin porta has been grated a menu on the console will be visible.

```
ENTER 1 ::   TO ADD STAFF MEMBER
ENTER 2 ::   TO SEARCH STAFF
ENTER 3 ::   TO SEARCH CUSTOMER
ENTER 4 ::   TO DISPLAY ALL STAFF DETAILS
ENTER 5 ::   TO DISPLAY ALL CUSTOMERS DETAILS
ENTER 6 ::   TO UPDATE STAFF MEMBER DETAILS
ENTER 7 ::   TO DELETE STAFF MEMBER ACCOUNT
ENTER 8 ::   TO DELETE CUSTOMER ACCOUNT
ENTER 9 ::   TO LOG OUT ADMIN PORTAL
ENTER YOUR CHOICE
_
```

In the above menu there are nine choices that a user can have. Choice 1 is to add a new gym staff member, choice 2 is to search for a staff member, choice 3 is to search for a gym customer, choice 4 is to display all staff details, choice 5 is to display all customers details ,choice 6 is to update a staff ,choice 7is to delete customer account ,choice 8 to delete customer account, choice 9 is to log out the admin portal and any other choice will be considered as an invalid choice and an appropriate message will be displayed.

Some difficult functions in the above menu will look like :

If user enters 1 as choice then :

```
ENTER STAFF NAME
vedansh

ENTER STAFF PHONE NUMBER
8299322877

ENTER STAFF DATE OF BIRTH FORMAT (dd/mm/yyyy)
31012002

ENTER THE APPOINTTED POST OF STAFF MEMBER
physical_trainer

ENTER THE SALARY OF THE STAFF MEMBER
25000
```

If user enters 5 as a choice then :

```
*********************************************************************
*********************************************************************
***
***          USER NAME          ::     vedansh
***
***          PHONE NUMBER        ::     7355604117
***
***          DATE OF BIRTH       ::     31012002
***
***          WEIGHT              ::     81.2
***
***          HEIGHT              ::     170.1
***
***          ACCOUNT             ::     DIAMOND MEMBERSHIP     FEES (Rs-4000)
***
***          JOINING DATE        ::     12082021
***
***          NUMBER OF MONTHS     ::     2
***
***          BILL                ::     8000
***
*******************************************************************
*******************************************************************
```

Similarly all customers details will be displayed similarly if the user enters 4 then all staff details will be displayed. If the user enters 8 as a choice then

```
ENTER CUSTOMER NAME
utkarsh

ENTER CUSTOMER PHONENUMBER
8299322877

*********************************************************************
**          YOUR ACCOUNT HAS BEEN DELETED SUCCESSFULLY          **
*********************************************************************
```

For invalid details an appropriate message will be displayed and If the user will enter 2 as a choice then

```
ENTER STAFF NAME
vedansh
```

```
***************************************************************
***
***         STAFF NAME              ::     vedansh
***
***         PHONE NUMBER            ::     7355604117
***
***         DATE OF BIRTH           ::     31012002
***
***         DESIGNATION             ::     owner
***
***         SALARY                  ::   Rs   50000
***
***************************************************************
***************************************************************



***************************************************************
***************************************************************



***************************************************************
***************************************************************
***
***         STAFF NAME              ::     vedansh
***
***         PHONE NUMBER            ::     8299322877
***
***         DATE OF BIRTH           ::     31012002
***
***         DESIGNATION             ::     physical_trainer¿a
***
***         SALARY                  ::   Rs   25000
***
***************************************************************
***************************************************************
```
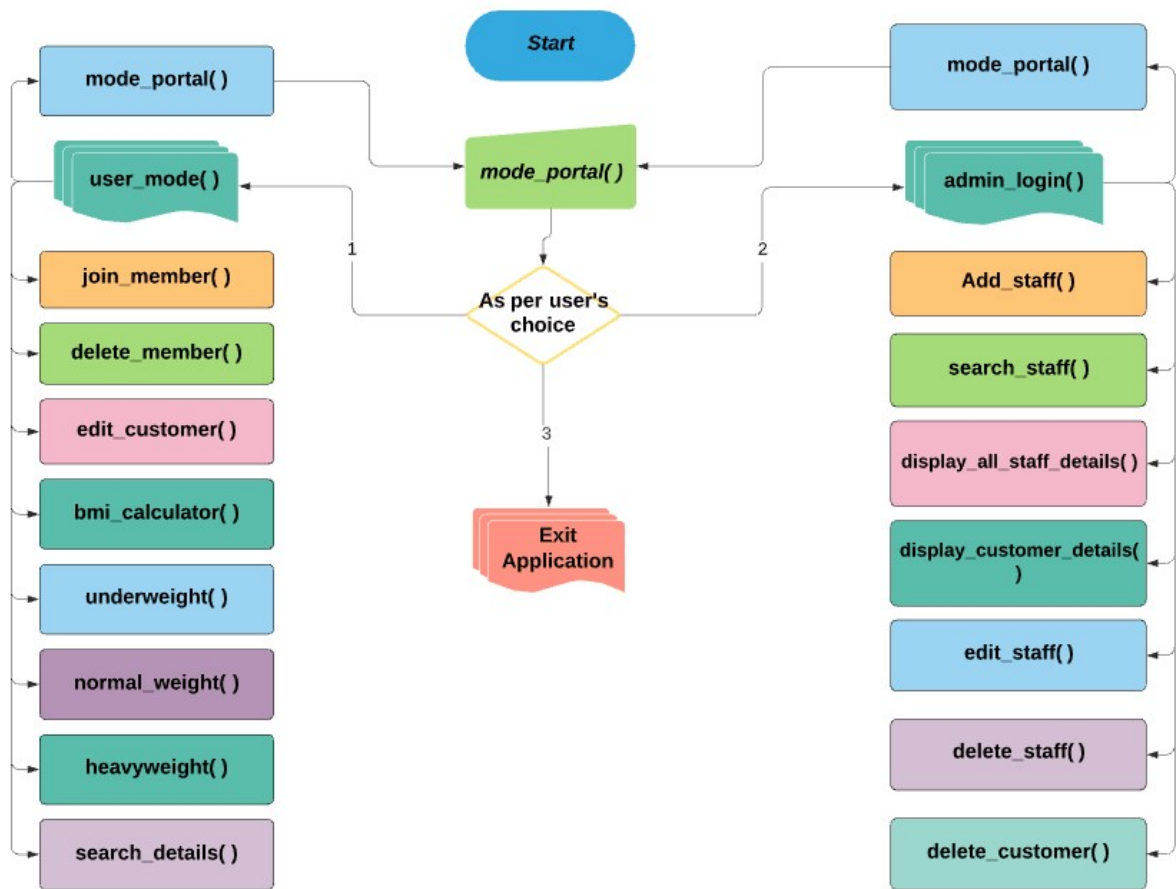
All the staff member details with user name vedansh will be displayed.

Flowchart :

Conclusion :

Thus, with all the functions and concepts working flawlessly one can definitely say that this Gym Management System console application is a wonderful one which on further modification will become a complete software which can be used in health-clubs and gyms for their management. This mini C++ console application uses the real world concepts of object oriented programming and it helps us to develop a console application which can be used in a real life.