PROJECT REPORT FOR

FITNESS TRACKING SYSTEM

GROUP – 9 , CSE "L" SECTION

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1.ABSTRACT

The main purpose of this Fitness Tracker is to help you reach your fitness goals and lead a Healthy Life.

This Fitness Tracker is a software program which enables the user to track their body mass index(BMI), current fitness level, calories to be consumed in a day, Types of Activities, Diet and Nutrition etc.

2.PROBLEM DEFINITION

Topic : Health, Fitness.

Due to the modern sedentary lifestyle health issues are on the rise.

The convenience of Food delivery system made all the the Junk Food easily available at our doorstep, those processed foods which are high in simple carbohydrates and fats results more Fat Accumulation in the Body.

Hence making People Unfit

3.PROPOSED SYSTEM

The Proposed system helps us to :

1) Calculate Body Mass Index(BMI)

2) Calculate your present Maintenance Calories?

3) Calculate calories of different foods

4) Follow Diet and Nutrition

5) Know which Physical activity can be Done?

4.SYSTEM REQUIREMENTS

A System Requirements Specification (SRS) (also known as a Software Requirements Specification) is a document or set of documentation that describes the features and behavior of a system or software application.

4.1 SOFTWARE REQUIREMENTS

The software requirements are description of features and functionalities of the target system.

1. Operating System: Windows
2. GCC

4.2 HARDWARE REQUIREMENTS

Hardware requirements often specify the operating system version, processor type, memory size, available disk space and additional peripherals.

1.Processor: x86 based system.

2.Keyboard

3. Mouse

4. Monitor

5.ALGORITHM

Step 1 : First when we run the program it will ask our name.

Step 2 : Then the Main Menu will be appeared and it consists of 7 options

Step 3 : It reads the input from the user

- Introduction

Step 4 : It displays the basic information about the program and explains how to use it

- Calculating BMI

Step 5 : It reads the input(height and weight) from the user

Step 6 : Displays the BMI and tells about the current body situation of the user

- Maintenance Calories

Step 7 : It shows the weight in ponds and displays the Current Maintenance calories of the user

Step 8 : Then according to the BMI, It displays the present maintenance calories to be consumed in   order to reach the goal of the user

- Calorie Calculation

Step 9 : It tells the user how to calculate the calories present in different Food items

- Diet and Nutrition

Step 10 : It gives an idea to the user about what all should be included in the daily diet for better results
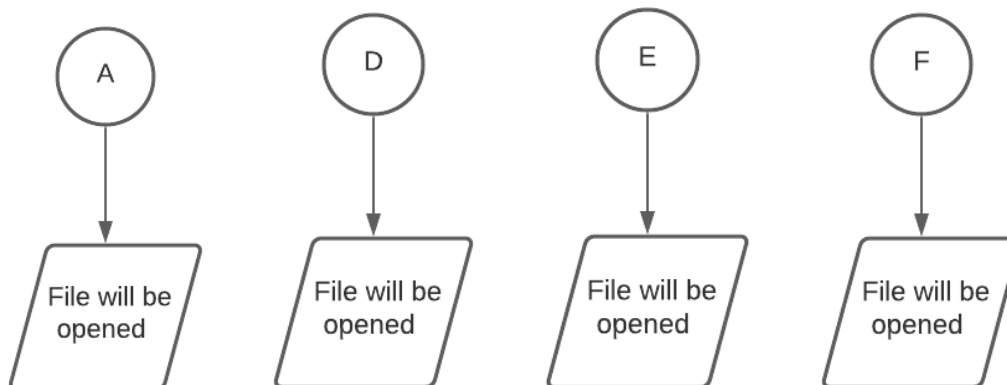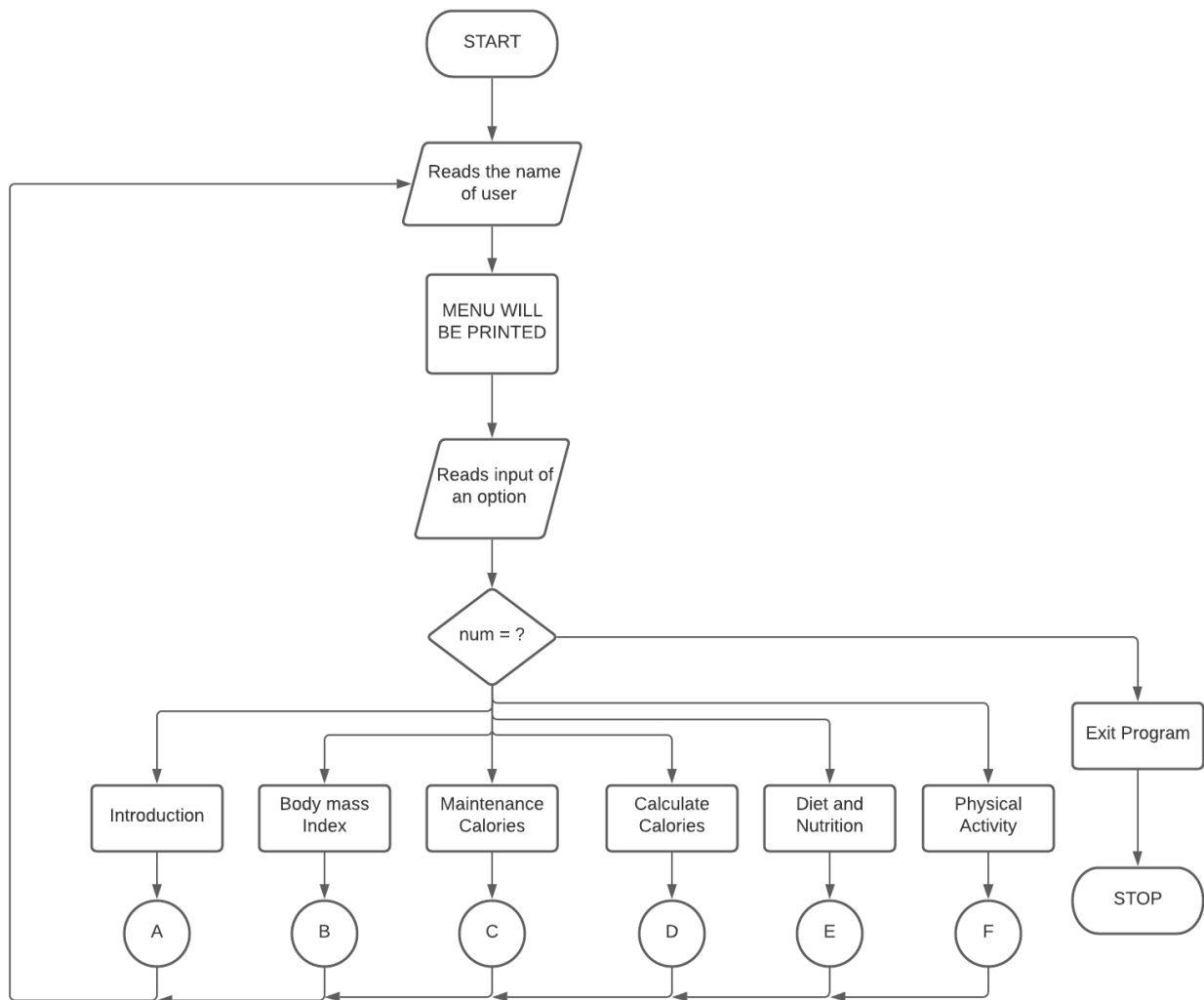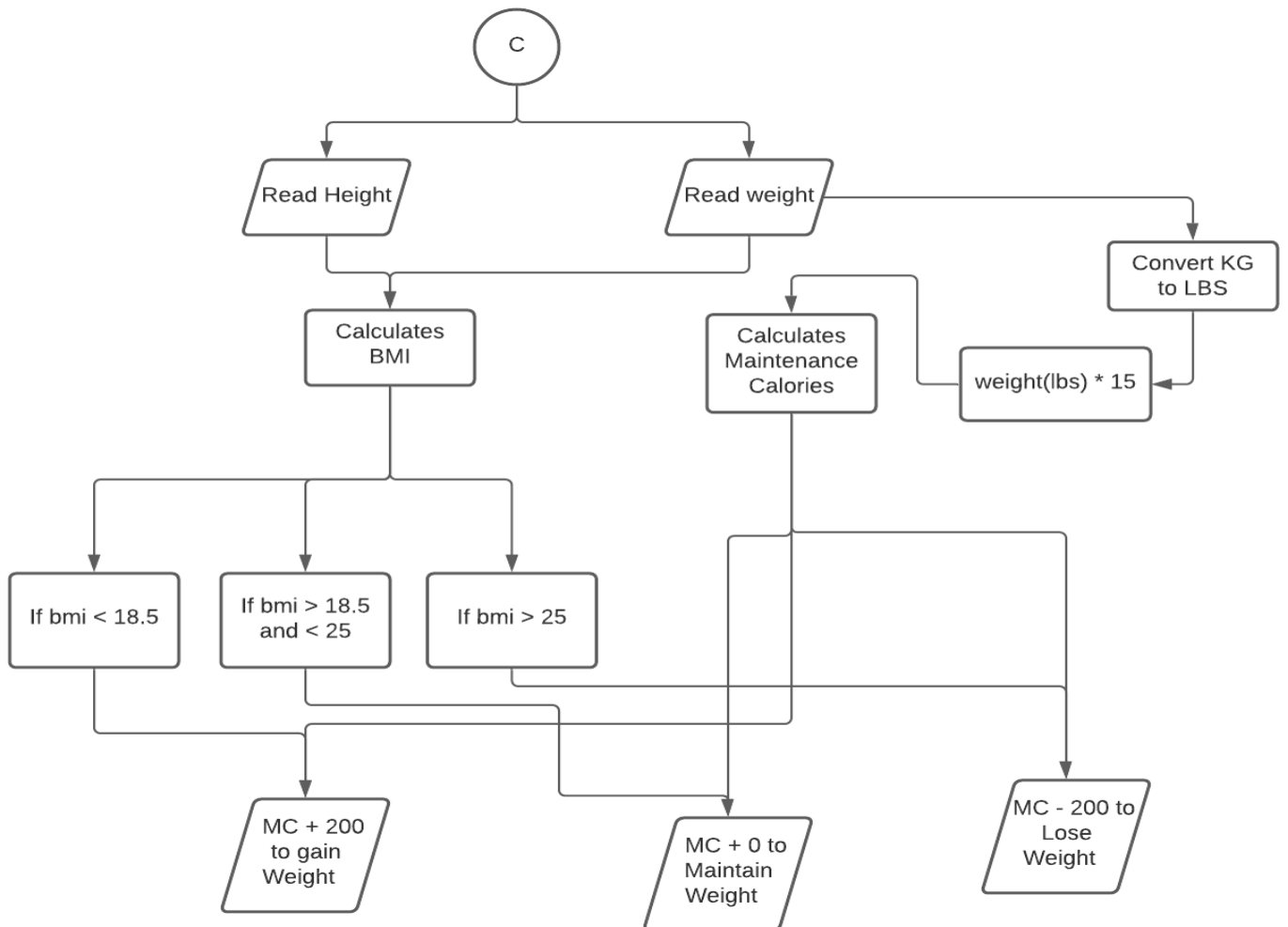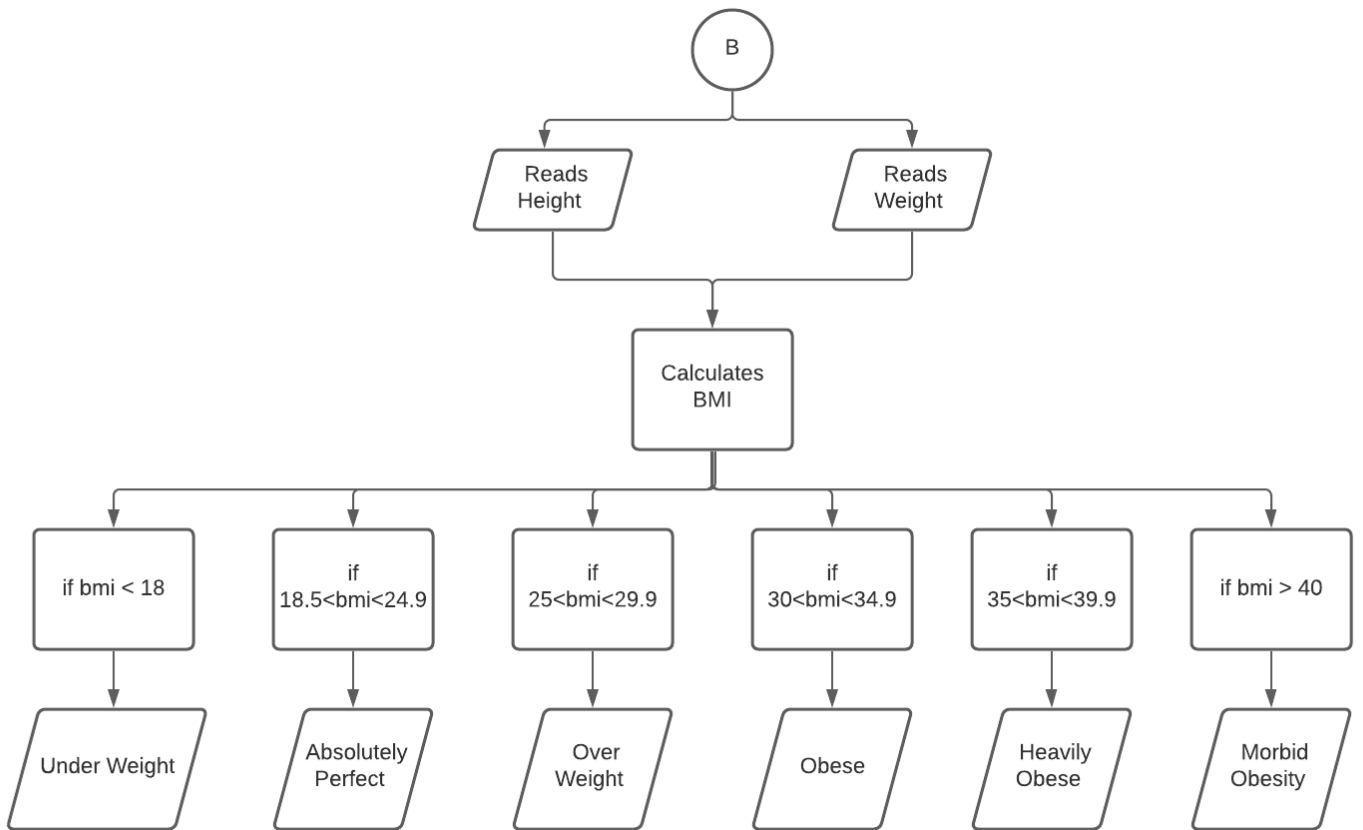
- Physical Activities

Step 11 : It tells the user what all physical activities can be performed

Step 12 : End of Program

- Exit Program

6.FLOWCHART

```mermaid
B
├── Reads Height
└── Reads Weight
        │
    Calculates BMI
        ├── if bmi < 18 → Under Weight
        ├── if 18.5<bmi<24.9 → Absolutely Perfect
        ├── if 25<bmi<29.9 → Over Weight
        ├── if 30<bmi<34.9 → Obese
        ├── if 35<bmi<39.9 → Heavily Obese
        └── if bmi > 40 → Morbid Obesity

C
├── Read Height
│       │
│   Calculates BMI
│       ├── If bmi < 18.5 → MC + 200 to gain Weight
│       ├── If bmi > 18.5 and < 25 → MC + 0 to Maintain Weight
│       └── If bmi > 25 → MC - 200 to Lose Weight
└── Read weight
        └── Convert KG to LBS
                └── weight(lbs) * 15
                        └── Calculates Maintenance Calories
```

B

Reads Height   Reads Weight

Calculates BMI

if bmi < 18 | if 18.5<bmi<24.9 | if 25<bmi<29.9 | if 30<bmi<34.9 | if 35<bmi<39.9 | if bmi > 40

Under Weight | Absolutely Perfect | Over Weight | Obese | Heavily Obese | Morbid Obesity

C

Read Height   Read weight

Calculates BMI

Convert KG to LBS

weight(lbs) * 15

Calculates Maintenance Calories

If bmi < 18.5 | If bmi > 18.5 and < 25 | If bmi > 25

MC + 200 to gain Weight | MC + 0 to Maintain Weight | MC - 200 to Lose Weight

7. COMPLETE CODE

```c
#include<stdio.h>


//Function Declarations
float BMI (float,float);
int MC (float);
void read_file(char * file);



//Global Variables
float wt, ht, bmi;



//Main Function
int main()
{
  //Part 1
  printf("********** Welcome to Fitness Tracking System
**********\n\n");
  printf("Enter your name : ");
  char name[50];
  scanf("%s", name);
  printf("\nHello %s \n\n", name);


  //Part 2
  int num;
  float wt, ht, bmi, mc;

  do{
  printf("\t********** MENU **********\n\n");
  printf("1) What is this Fitness Tracking System and how to use
it?\n");
  printf("2) To Calculate Body Mass Index(BMI)\n");
  printf("3) How to calculate your present Maintenance
Calories?\n");
  printf("4) How to calculate calories of different foods\n");
  printf("5) How to follow Diet and Nutrition\n");
  printf("6) Which Physical activity can be Done?\n");
  printf("7) Exit Program\n\n");
```

```c
printf("Enter the respective number according to your choice : ");
scanf("%d", &num);

switch(num)
{
    case 1 : printf("1) \n");
             read_file("intro.txt");
             break;

    case 2 : printf("2) ");
             bmi = BMI (wt,ht);
             break;

    case 3 : printf("3) ");
             mc = MC (wt);
             break;

    case 4 : printf("4)");
             FILE *fp2;
             fp2=fopen("ccal" , "r");
             int ch;

             while((ch = fgetc(fp2))!=EOF)
             {
               printf("%c", ch);
             }
             fclose(fp2);
             break;

    case 5 : printf("5) ");
             FILE *fp3;
             fp3=fopen("diet" , "r");
             int ch2;

             while((ch2 = fgetc(fp3))!=EOF)
             {
               printf("%c", ch2);
             }
             fclose(fp3);
             break;

    case 6 : printf("6) ");
```

```c
                FILE *fp4;
                fp4=fopen("exercise" , "r");
                int ch3;

                while((ch3 = fgetc(fp4))!=EOF)
                {
                   printf("%c", ch3);
                }
                fclose(fp4);
                break;

     case 7 : printf("\n***** End of Program *****\n\n");
                break;

    default : printf("invalid choice, Enter a Valid number\n\n\n");

  }
  }
  while(num!=7);

    return 0;
}


//BMI Function
float BMI (float wt, float ht)
{
  float bmi;
  printf("\nEnter your weight in kg and height in meters\n");
  scanf("%f %f", &wt,&ht);
  bmi= wt / (ht*ht);

  if (bmi < 18.5)
      {
          printf("You are under weight\n\n");
      }

  else if (bmi > 18.5 && bmi < 24.9)

      {
          printf("Your Physique is Absolutely perfect\n\n");
```

```c
        }
else if (bmi > 25.0 && bmi < 29.9)


    {
        printf("You are OverWeight\n\n");
    }


else if (bmi > 30.0 && bmi < 34.9)


    {
        printf("You are obese\n\n");
    }


else if (bmi > 35.0 && bmi < 39.9)


    {
        printf("You are Heavily obese\n\n");
    }


else


    {
        printf("You have severe morbid obesity\n\n");

    }
}



//Maintenance Calorie Calculator Function
int MC (float wt)
{
    int mc;
    printf("Enter your weight in kg and height in meters : ");
    scanf("%f%f", &wt, &ht);
    bmi= wt / (ht*ht);
    printf("Your weight in kg is %f\n", wt);
    wt = wt * 2.20462;    //converting kg to pounds
    printf("Your weight in pounds is %f\n", wt);

    mc = wt * 15;        //Calculating maintenance calories
    printf("Your present Maintenance Calories are %d\n", mc);
```

```c
        printf("These are the calories that you should consume in a
day\n");

        printf("Your current BMI is %f , So\n", bmi);

        if (bmi < 18.5)
        {
            printf("You should Gain Weight in order to stay
healthy\n");
            mc = mc + 200;
            printf("To gain weight you should eat more than your
maintenance calories\n");
            printf("So your Total calories to be consumed in a day are
%d\n\n\n", mc);

        }
        else if (bmi > 18.5 && bmi < 25)
        {
            printf("You should Maintain your weight in order to stay
healthy\n");
            printf("To Maintain your weight you should eat the same
amount as your maintenance calories\n");
            printf("So your Total calories to be consumed in a day are
%d\n\n\n", mc);
        }
        else
        {
            printf("You should Loose weight in order to stay
healthy\n");
            mc = mc - 200;
            printf("To Loose weight you should eat less than your
maintenance calories\n");
            printf("So your Total calories to be consumed in a day are
%d\n\n\n", mc);
        }


        return mc;
    }


    //Introduction File Function 1
```
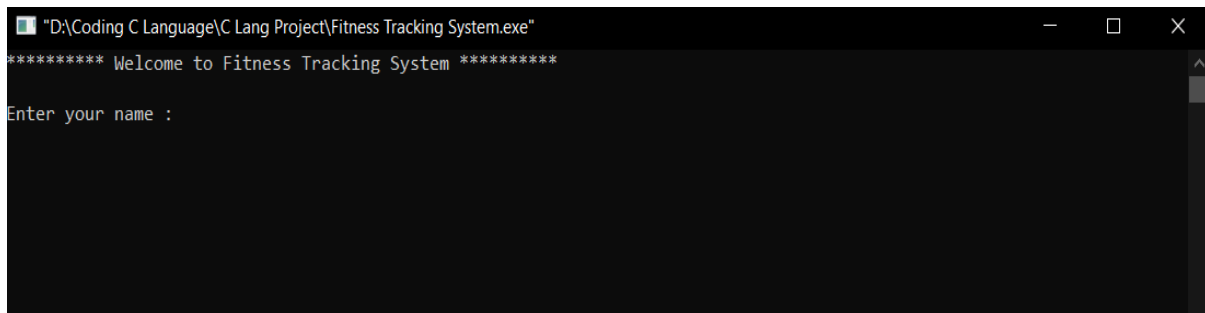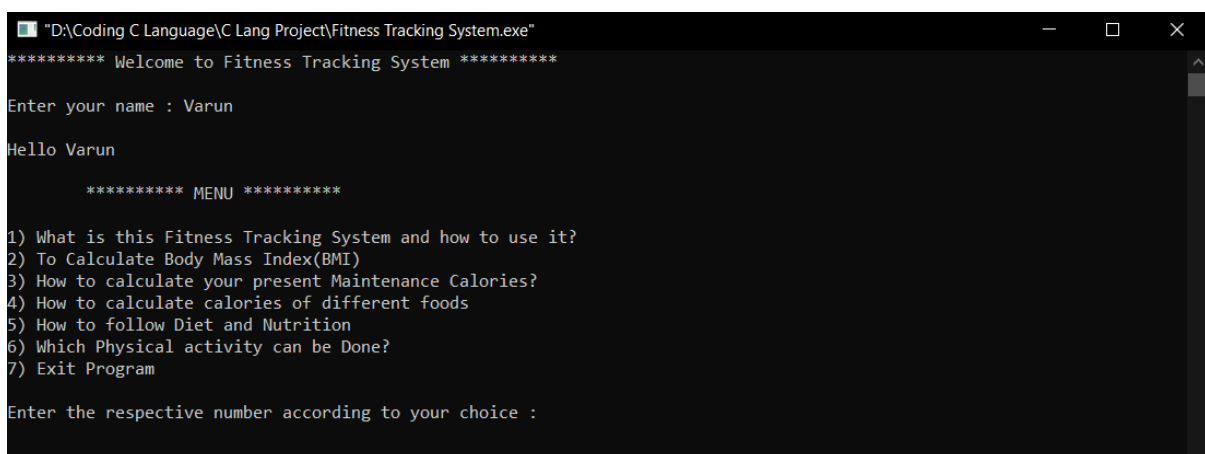
```c
void read_file(char * file)
{
    FILE *fp1;
    fp1 = fopen("intro" , "r");
    int ch;
    while((ch=fgetc(fp1))!=EOF)
    {
        printf("%c", ch);
    }
    fclose(fp1);
}
```
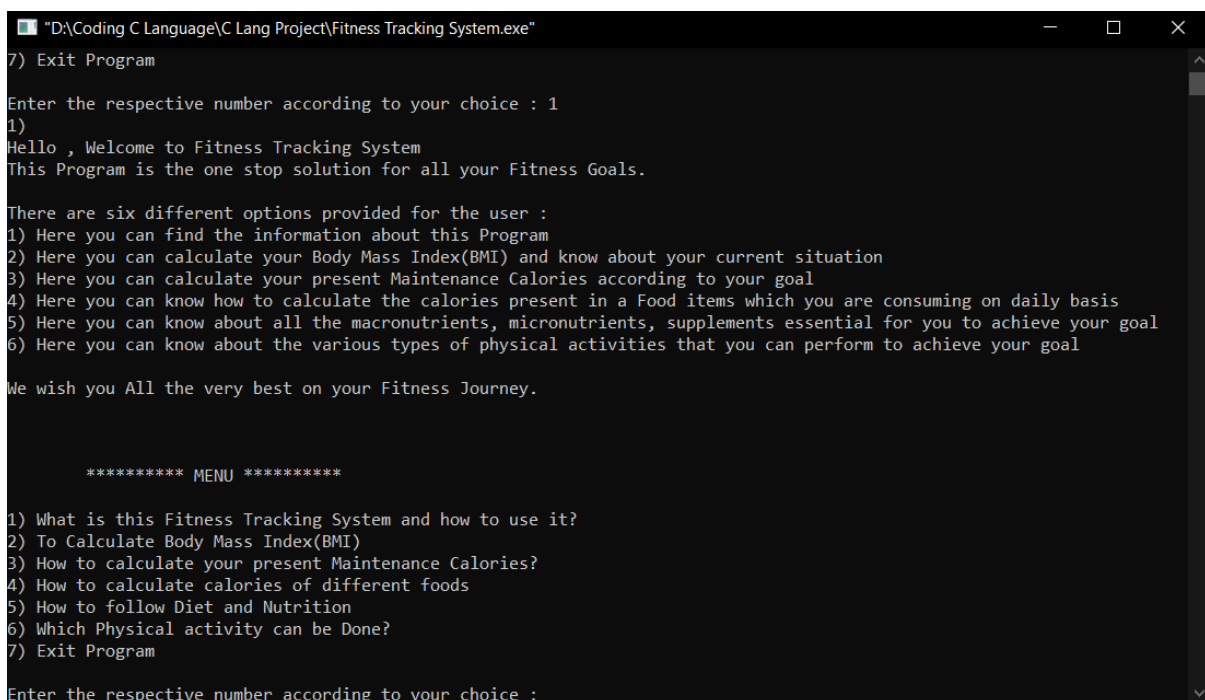
8. SCREENSHOTS

```
"D:\Coding C Language\C Lang Project\Fitness Tracking System.exe"                     —    □    ×
********** Welcome to Fitness Tracking System **********

Enter your name :
```

```
"D:\Coding C Language\C Lang Project\Fitness Tracking System.exe"                     —    □    ×
********** Welcome to Fitness Tracking System **********

Enter your name : Varun

Hello Varun

        ********** MENU **********

1) What is this Fitness Tracking System and how to use it?
2) To Calculate Body Mass Index(BMI)
3) How to calculate your present Maintenance Calories?
4) How to calculate calories of different foods
5) How to follow Diet and Nutrition
6) Which Physical activity can be Done?
7) Exit Program

Enter the respective number according to your choice :
```

```
"D:\Coding C Language\C Lang Project\Fitness Tracking System.exe"                     —    □    ×
7) Exit Program

Enter the respective number according to your choice : 1
1)
Hello , Welcome to Fitness Tracking System
This Program is the one stop solution for all your Fitness Goals.

There are six different options provided for the user :
1) Here you can find the information about this Program
2) Here you can calculate your Body Mass Index(BMI) and know about your current situation
3) Here you can calculate your present Maintenance Calories according to your goal
4) Here you can know how to calculate the calories present in a Food items which you are consuming on daily basis
5) Here you can know about all the macronutrients, micronutrients, supplements essential for you to achieve your goal
6) Here you can know about the various types of physical activities that you can perform to achieve your goal

We wish you All the very best on your Fitness Journey.



        ********** MENU **********

1) What is this Fitness Tracking System and how to use it?
2) To Calculate Body Mass Index(BMI)
3) How to calculate your present Maintenance Calories?
4) How to calculate calories of different foods
5) How to follow Diet and Nutrition
6) Which Physical activity can be Done?
7) Exit Program

Enter the respective number according to your choice :
```

```
"D:\Coding C Language\C Lang Project\Fitness Tracking System.exe"                    —    □    ✕
Hello Varun

        ********** MENU **********

1) What is this Fitness Tracking System and how to use it?
2) To Calculate Body Mass Index(BMI)
3) How to calculate your present Maintenance Calories?
4) How to calculate calories of different foods
5) How to follow Diet and Nutrition
6) Which Physical activity can be Done?
7) Exit Program

Enter the respective number according to your choice : 2
2)
Enter your weight in kg and height in meters
90
1.65
You are obese

        ********** MENU **********

1) What is this Fitness Tracking System and how to use it?
2) To Calculate Body Mass Index(BMI)
3) How to calculate your present Maintenance Calories?
4) How to calculate calories of different foods
5) How to follow Diet and Nutrition
6) Which Physical activity can be Done?
7) Exit Program

Enter the respective number according to your choice :
```



```
"D:\Coding C Language\C Lang Project\Fitness Tracking System.exe"                    —    □    ✕
3) How to calculate your present Maintenance Calories?
4) How to calculate calories of different foods
5) How to follow Diet and Nutrition
6) Which Physical activity can be Done?
7) Exit Program

Enter the respective number according to your choice : 3
3) Enter your weight in kg and height in meters : 90
1.65
Your weight in kg is 90.000000
Your weight in pounds is 198.415802
Your present Maintenance Calories are 2976
These are the calories that you should consume in a day
Your current BMI is 33.057854 , So
You should Loose weight in order to stay healthy
To Loose weight you should eat less than your maintenance calories
So your Total calories to be consumed in a day are 2776


        ********** MENU **********

1) What is this Fitness Tracking System and how to use it?
2) To Calculate Body Mass Index(BMI)
3) How to calculate your present Maintenance Calories?
4) How to calculate calories of different foods
5) How to follow Diet and Nutrition
6) Which Physical activity can be Done?
7) Exit Program

Enter the respective number according to your choice :
```

15

Enter the respective number according to your choice : 4
4)Hello
Now let us know how to calculate calories of different foods
A weighing scale is suggested for this

For all the packed foods there will be a Nutritional label on the back of the pack, go through it thoroughly.
You can find almost all the details of the food item over there.
Example : 100g of of Lays contains 400kcal
         take the amount of lays you want to eat and measure it
         if the reading shows 50grams then you will get 200kcal from it.

If you do not find the Nutritional label behind the pack just search for the information of the item on Net.

Note : For all the cooked food items like rotis, lentils, etc
       Measure them before cooking, so that we can track the calories easily.

        ********** MENU **********

1) What is this Fitness Tracking System and how to use it?
2) To Calculate Body Mass Index(BMI)
3) How to calculate your present Maintenance Calories?
4) How to calculate calories of different foods
5) How to follow Diet and Nutrition
6) Which Physical activity can be Done?
7) Exit Program

Enter the respective number according to your choice :

Enter the respective number according to your choice : 5
5) Hello
The Major thing which you should take seriously while you are in a Fitness journey is "Diet and Nutrition"

Macro Nutrients : Protein -> Proteins are made up of chemical 'building blocks' called amino acids.
                              Your body uses amino acids to build and repair muscles and bones and to make hormones and enzymes.
                              They can also be used as an energy source.
                 Carbohydrates -> Carbohydrates, or carbs, are sugar molecules.
                                  Your body breaks down carbohydrates into glucose.
                                  Glucose, or blood sugar, is the main source of energy for your body's cells, tissues, and organs.

                 Fats -> The body uses fat as a fuel source, and fat is the major storage form of energy in the body.
                          Fat also has many other important functions in the body,
                          and a moderate amount is needed in the diet for good health.
                 Fiber -> Fiber is a type of carbohydrate that the body can't digest.
                          Fiber helps regulate the body's use of sugars, helping to keep hunger and blood sugar in check.

Micro Nutrients : Micronutrients are vitamins and minerals needed by the body in very small amounts.
                 However, their impact on a body's health are critical,
                 and deficiency in any of them can cause severe and even life-threatening conditions.

Supplements : Protein shakes, Mass Gainers, BCAA, Multivitamin, Fish oil, Creatine, etc.

All of these are required in recommended amounts for optimum Health.

        ********** MENU **********

16

```
3) How to calculate your present Maintenance Calories?
4) How to calculate calories of different foods
5) How to follow Diet and Nutrition
6) Which Physical activity can be Done?
7) Exit Program

Enter the respective number according to your choice : 6
6) Along with Proper Diet we also need to perform Physical Activity in our Fitness Journey

There are many types of physical activities that you can perform :

1) Strength Training / Resistance Training
2) Mixed Martial Arts
3) Walking / Jogging
4) Hiking
5) Bicycling
6) Swimming
7) Hatha Yoga
8) Aerobics
9) Dancing
10) Weight Lifting and many more...
You can also play your favourite Sport of your choice

Note : All the activities initially should be done in the supervision of a Qualified Trainer.



        ********** MENU **********
```

```
        ********** MENU **********

1) What is this Fitness Tracking System and how to use it?
2) To Calculate Body Mass Index(BMI)
3) How to calculate your present Maintenance Calories?
4) How to calculate calories of different foods
5) How to follow Diet and Nutrition
6) Which Physical activity can be Done?
7) Exit Program

Enter the respective number according to your choice : 7

***** End of Program *****


Process returned 0 (0x0)   execution time : 299.871 s
Press any key to continue.
```

9. REFRENCES

https://www.youtube.com/watch?v=aUqO-dgzMw4&list=PLLOxZwkBK52AE9jFVOGZTJxaiAC_xB8Yy&ab_channel=SundeepSaradhiKanthety

https://www.youtube.com/watch?v=si-KFFOW2gw&list=PLVlQHNRLflP8IGz6OXwlV_lgHgc72aXlh&ab_channel=NareshiTechnologies

https://www.youtube.com/watch?v=ZSPZob_1TOk&t=15705s&ab_channel=CodeWithHarry