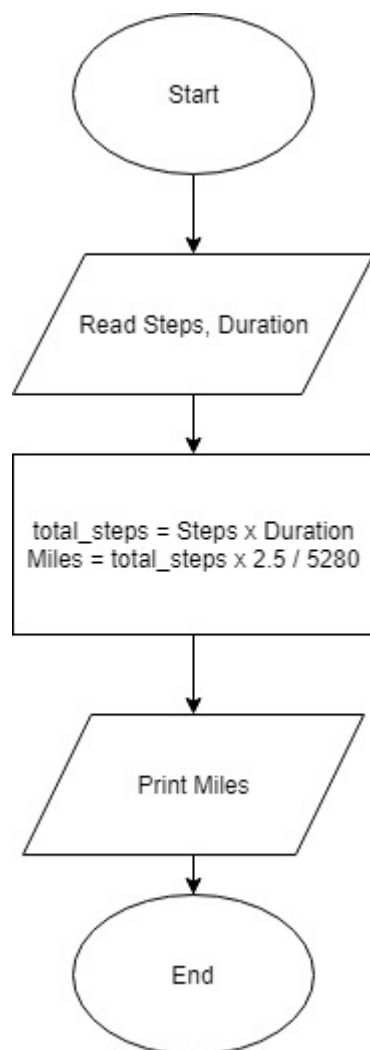## Question 2

Input : Steps, Duration

Process : calculate total_steps, Miles

Output : Miles

Pseudocode

1. Start
2.   Read Steps, Duration
3.   total_steps : Steps x Duration
4.   Miles = total_steps x 2.5 /5280
5. End

Flowchart

Question 4

Input : numb_of_participants, weight, height

Process : calculate BMI

Output : Display message "you are underweight." Or "You have optimal weight." Or "You are overweight."

Structure Chart
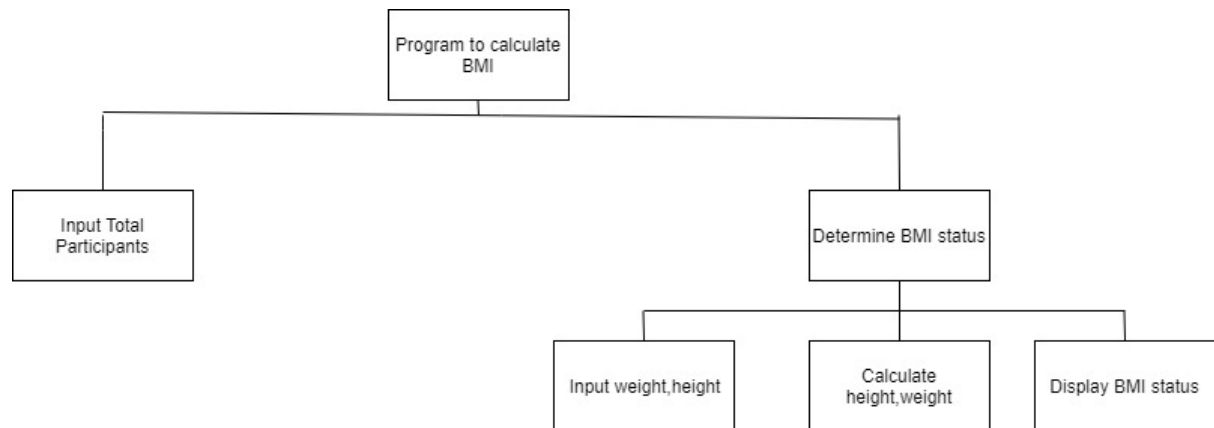
Pseudocode

1. Start
2. Set counter=1
3. Read numb_of_participants
4. While counter<numb_of_participants
5.   Read weight,height
6.   BMI = weight/height*height
7.   If BMI<18.5
8.   Print "You are underweight."
9.   Else if BMI<25
10.   Print "You are overweight."
11.   Else
12.   Print "You have optimal weight."
13.   Add 1 to Counter
14. Endwhile
15. End

Flowchart

```
                    ┌─────────────┐
                    │    Start    │
                    └──────┬──────┘
                           │
                    ┌──────▼──────┐
                    │ counter = 1 │
                    └──────┬──────┘
                           │
                   ╱───────▼────────╲
                  ╱ Read numb_of_     ╲
                 ╱   participants      ╲
                 ╲                     ╱
                  ╲───────┬──────────╱
                          │
        ┌────────────◇────▼─────◇───── False ──────►┌─────────┐
        │            ╱   while      ╲                │   End   │
        │           ◇ numb_of_       ◇               └─────────┘
        │            ╲ participants  ╱
        │             ╲ < counter   ╱
        │              ◇─────┬─────◇
        │                    │ True
        │              ◇─────▼─────◇──── True ──►╱ Print "You are ╲
        │             ╱  BMI < 18.5  ╲           ╱  underweight"   ╲
        │             ╲              ╱           ╲_____╱
        │              ◇─────┬─────◇
        │                    │ False
        │              ◇─────▼─────◇──── True ──►╱ Print "You have ╲
        │             ╱  BMI > 25    ╲           ╱ optimal weight"  ╲
        │             ╲              ╱           ╲_____╱
        │              ◇─────┬─────◇                      │
        │                    │ False                      │
        │             ╱──────▼──────╲                     │
        │            ╱ Print "You are ╲                   │
        │            ╲ overweight"    ╱                   │
        │             ╲──────┬───────╱                    │
        │                    │                            │
        │             ┌──────▼──────────┐                 │
        │             │ counter =       │◄────────────────┘
        │             │ counter + 1     │
        │             └──────┬──────────┘
        │                    │
        └────────────────────┘
```

Start

counter = 1

Read numb_of_participants

while numb_of_participants < counter — False → **End**

True

BMI < 18.5 — True → Print "You are underweight"

False

BMI > 25 — True → Print "You have optimal weight"

False

Print "You are overweight"

counter = counter + 1