Dalton Ream

IST 140

Professor Bartell

2/18/19

**Problem description:**

Happy Valley Health’s Club management decided to have computers in their fitness areas. On these computers, they want to be able to inform the customers about their target heart rate and the customer's BMI. With this program the customer will be able to see if they are meeting their target heart rate and if they have a healthy BMI.

**A person’s target heart rate is calculated using this formula:**

Target heart rate = 70% of (220 – age)

**A persons BMI is calculated using this formula:**

(weight in pounds \*

703 )

———————————

BMI =

( kg/m² )

height in inches²

**Variable List:**

**Input Variables:**

**Name Data Type Description**

|  |  |  |
| --- | --- | --- |
| age | int | age of the user in years as a whole number |
| height | int | height of the user in inches as a whole number |
| weight | int | weight of the user in pounds as a whole number |

**Output Variables:**

**Name Data Type Description**

|  |  |  |
| --- | --- | --- |
| targetHeartRate | int | Target heart rate of the user in  beats per minute as a whole number |
| bmi | double | Body mass index of the users in double |

**Algorithm:**

1. Introduce the user to the calculator and the programmer
2. Inform user of input variables
3. Prompt the user to enter <age> as a whole number
4. Input age
5. Prompt the user to enter <height> as a whole number
6. Input height
7. Prompt the user to enter <weight> as a whole number
8. Input weight
9. Compute the target heart rate where target heart rate = 70% of (220-age)
10. Compute BMI where BMI = (weight \* 703.0) / (height \* height)
11. Inform the user about their target heart rate and their BMI
12. Display their <targetHeartRate> and their <bmi>
13. Closing statement

**Code:**

// Target Heart Rate and BMI  
// Dalton Ream   
// dur225@psu.edu  
// Date Last Updated: 9/18/2019  
  
// Source file: Project1  
// Purpose: Inform user about their target heart rate and their BMI  
  
import java.util.Scanner;  
  
public class Project1  
  
{  
public static void main (String args[])  
{  
int age, // age of user   
height, // height of user in inches  
weight,// weight of user in pounds  
targetHeartRate; //target heart of user  
double bmi; // bmi of user  
  
Scanner in = new Scanner(System.in); // instantiate a new Scanner object  
  
// introduce user to the program  
System.out.println("Welcome to Happy Valley Fitness Center!");  
System.out.println("Where We Care About Your Health");  
  
System.out.println("\n");  
// inform users about the input variables we will need  
System.out.println("Let's check your current fitness level!");  
System.out.println("We will determine your target heart rate and body mass index.");  
System.out.println("All we need is your age, height, and weight.");  
  
System.out.println("\n");  
  
  
// ask users for input variables   
System.out.print("How old are you? ");  
age = in.nextInt(); // age input  
System.out.println("\n");  
System.out.print("What is your height in inches? (Remember 1 foot= 12 inches) ");  
height = in.nextInt(); //height input  
System.out.println("\n");  
System.out.print("What is your weight (in pounds?) ");  
weight = in.nextInt(); // weight input  
System.out.println("\n");  
System.out.println("\n");  
  
  
// calculate target heart rate  
targetHeartRate= 7 \* (220-age) / 10;  
  
//calculate BMI  
bmi= (weight \* 703.0) / (height \* height);  
  
// inform user about their target heart rate and bmi   
System.out.println("The results are in!");  
System.out.println("Target Heart Rate: " + targetHeartRate);  
System.out.printf("Body Mass Index " + "%.1f",bmi);  
  
System.out.println("\n");  
  
// closing statement  
System.out.println("Thank you from your friends at \n Happy Valley Fitness Center!");  
  
}  
}