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:

$$\text{BMI} = \frac{(\text{weight in pounds} * 703)}{\text{height in inches}^2} \quad (\text{kg/m}^2)$$

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!");
```

```
}

}
```