CSCI 1015 – Programming Assignment 6
Classes and Methods

Learning Outcomes
- Use methods to gather input, perform calculations, and display output.
- Write methods that call other methods.

Required Reading

Savitch - Sections 5.2 (pp. 324-329), 5.3

Instructions

For this assignment you will rewrite the workout calculator you wrote for Assignment 2 using methods.

You will need to create a class called `WorkoutCalculator` that contains all of the data and code required to compute calories spent working out. In addition you must create a main class called `YourlastnameProgram6.java` (with your actual last name) that creates a `WorkoutCalculator` object and uses it to calculate calories spent working out.

The `WorkoutCalculator` class should contain fields representing the following values:
- The weight of the individual.
- The minutes spent doing each of the four activities (playing badminton, running, walking, and lifting weights.)
- The total time spent in minutes.
- The calories spent doing each of the four activities.
- The total time spent working out.

Your `WorkoutCalculator` class should also have the the following public methods:

`public void readInput()`
- Prompts for the minutes spent doing each activity using the `prompt` method described below, and stores the results in the appropriate fields
- Calculates the total time spent working out in minutes and stores the result in the appropriate field.

```
public void displayResults()
```
- Calls the `calculateCalories` method described below.
- Displays the calories and time spent on each activity using the `displayLine` method described below.
- Displays the total calories and time spent using the `displayTotals` method described below.

To help out the public methods, you will need to implement the following private methods:

```
private int prompt(Scanner keyboard, String prompt)
```
- Displays `prompt` to the screen.
- Uses `keyboard` to read an integer.
- Returns that integer.

```
private void calculateCalories()
```
- Calculates calories for each of the activities and stores the results in the appropriate fields.
- Calculates the total calories spent and stores the results in the appropriate field.

```
private void displayLine(String activity, int minutes, double calories)
```
- Displays a line of output showing results for a specific activity.
- For example, the call `displayLine(playing badminton, 40, 316)` would display the following line:

  ```
  You spent 40 minutes playing badminton and burned 316 calories.
  ```

```
private void displayTotals()
```
- Displays a line of output showing the total time and calories spent exercising.
- For example, if the total time spent exercising was 75 minutes and the total calories are 982.54, `displayTotals` would display the following line:

  ```
  You spent 1 hours and 15 minutes working out and burned 982.54 calories.
  ```

In your main Java Class, write code in the `main` method that does the following:
1. Displays a welcome message to the user.
2. Creates a new `WorkoutCalculator` object.
3. Calls the `readInput` method on the object.
4. Calls the `displayOutput` method on the object.
5. Asks the user if they want to calculate calories for another workout.
6. If the user answers `Y`, go back to step 3.
7. If the user answers `N`, display a message and exit the program.

Example Input and Output

Here is an example run of the program:

```
Welcome to Nicholas Coleman's Workout Calculator.
Please enter your weight: 150
Please enter the minutes spent playing badminton: 23
Please enter the minutes spent running: 55
Please enter the minutes spent walking: 30
Please enter the minutes spent lifting weights: 20
You spent 23 minutes playing badminton and burned 151.79999999999998 calories.
You spent 55 minutes running and burned 717.7499999999999 calories.
You spent 30 minutes walking and burned 161.99999999999997 calories.
You spent 20 minutes lifting weights and burned 126.00000000000001 calories.

You spent 2 hours and 8 minutes working out and burned 1157.5499999999997 calories.

Would you like to calculate calories for another workout? (Y/N): Y
Please enter your weight: 183
Please enter the minutes spent playing badminton: 35
Please enter the minutes spent running: 0
Please enter the minutes spent walking: 0
Please enter the minutes spent lifting weights: 10
You spent 35 minutes playing badminton and burned 281.82 calories.
You spent 0 minutes running and burned 0.0 calories.
You spent 0 minutes walking and burned 0.0 calories.
You spent 10 minutes lifting weights and burned 76.86000000000001 calories.

You spent 0 hours and 45 minutes working out and burned 358.68 calories.

Would you like to calculate calories for another workout? (Y/N): N
Thank you for using the workout calculator!
```

Notes and Comments

Upload your Java source files to the dropbox named **Program 6**. The name of the source file for the main class must be your last name followed by Program6 with the extension .java. For example, mine would be ColemanProgram6.java.

Make sure to include comments with your name, a description of what the program does, the course (CSCI 1015), and the assignment name (Program 6) at the beginning of all of your source files. Also make sure to add comments at the beginning of each of the methods you write describing what they do.

Make sure you only hand in the source files for your assignment, not the class files, or any other files that NetBeans creates.

Your programs must compile without errors in order to be graded. Once your program compiles make sure to test it using **multiple test cases** to see if it meets the requirements of the assignment.