CS161: Introduction to Computer Science
Lab Assignment 2

For today's lab, you'll be practicing the following skills:

1. Declaring, initializing, and assigning to variables of type `int` and `double`
2. Basic arithmetic operations and expressions
3. Casting types

To get started, open BlueJ and create a new project called `lab2`. Make sure you create this new project inside your `cs161` directory.

Programming Questions

- Create a Java class called `Arithmetic` with a `main` method
  - In the README file, answer exercise 2.11 parts (a)-(q)
  - Now, check that your answers are correct by copying the code from the book into the `main` method and inserting print statements.
- If you were to travel to the surface of another planet, although your *mass* would stay the same, your *weight* would change. It's always interesting to compute how much you would weigh (relative to Earth) if you were on another planet.

  Create a new Java class called `Planets` with a `main` method. In the `main` method, you should create a variable that stores your weight (in pounds). Using this variable and the table below, compute what your weight would be on the surface of the following planets:

Planet	Gravitational Factor
Sun	27.9
Mercury	0.38
Venus	0.91
Earth	**1.0**
Moon	0.17
Mars	0.38
Jupiter	2.54
Saturn	1.08
Uranus	0.91
Neptune	1.19
Pluto	0.06

  For example, if I weighed 150 lbs. on Earth and I traveled to the moon, I would weigh only $150 * 0.17 = 25.5$ lbs. Print to the screen your weight on each of the planetary objects in the table above. Be sure to use `final` variables to hold the gravitational factors, e.g.

```
final double SUM = 27.9;
final double MERCURY = 0.38;
```

- Click *here* to go to Weather Underground for Tacoma, WA. This website compiles a variety of climate data such as high and low temperatures, pressure, visibility, precipitation, etc.

  Use the data provided on this website to perform arithmetic computations (using the four operators: $+$, $-$, $*$, and $/$) and to print the results to the screen.

  Ideas include computing differences between high(est) and low(est) values, computing averages and standard deviations, converting between units (e.g. fahrenheit to celsius or fahrenheit to kelvin). Get creative and feel free to search for ideas of things to compute online.

  Put your code inside of a `main` method in a Java class called `Weather`.

Submitting your lab assignment

Rename your `lab2` folder. After renaming, zip (compress) and submit via Moodle.