WindChill CS205

Description

This program will compute a temperature including the wind chill factor.

Requirements

- **main** method.
  - Generate and send a random integer temperature in the inclusive range [0 – 50], and a random integer wind speed in the inclusive range [4 – 30] to a method named **computeWindChill**.
  - Display the temperature, wind speed, and computed wind chill temperature according to the format shown in the sample runs. The wind chill temperature will be displayed with 1 digit of precision.
  - Remember to use named constants for numbers other than 0, 1, or 2.
  - Look back in your notes (and the book) for random number generation
  - (You aren't required to use just one System.out.println ()
- **computeWindChill** method
  - This public method will compute and return the windchill temperature (float or double) given a temperature and wind speed.
  - It has two formal integer parameters representing the temperature and wind speed.
  - Include method header documentation: Follow the pattern presented in some of the note's examples as well as in the annotated style guide shown online. The assumptions (preconditions, @pre) are that temperature <= 50 and wind speed > 3. (Note: We are also including other boundaries such as 0 and 30 when generating the random values, but they really aren't required for the wind chill formula)
  - Wind chill formula:

$$\text{Windchill} = 35.74 + 0.6215 * \text{temperature} - 35.75 * \text{windSpeed}^{0.16} + 0.4275 * \text{temperature} * \text{windSpeed}^{0.16}$$

  - Remember that using named constants for numbers other than 0, 1, or 2 is not required for formulas such as the wind chill formula.
  - This method could simply consist of one return statement – split across multiple lines to avoid bypassing the 80 char per line coding style guideline
- Be sure to match the output in the sample runs (although your generated numbers will likely differ)
- Remember to always follow coding style guidelines unless any exceptions are explicitly stated. In this case, internal comments are not required in this program, but external header comments are required for the class (@author only) and for the **computeWindChill** method.

Sample Runs

```
Temperature: 32 degrees Fahrenheit
Wind speed: 23 MPH
Temperature (including wind chill): 19.2 degrees Fahrenheit
```

```
Temperature: 33 degrees Fahrenheit
Wind speed: 11 MPH
Temperature (including wind chill): 24.5 degrees Fahrenheit
```

```
Temperature: 2 degrees Fahrenheit
Wind speed: 9 MPH
Temperature (including wind chill): -12.6 degrees Fahrenheit
```

Submission

- Before class:
  - Print the source (.java) file.
  - Submit the source file to D2L.
- Beginning of class
  - Turn in the source file.