Rowan Barr

2/2/2020

CMSC 203

Assignment 1 Design Documents

Pseudocode:

Import scanner

The class goes here

The main goes here

Declare the 1st constant double variable for the wind chill equation = (35.74)

Declare the 2nd constant double variable for the wind chill equation = (0.6215)

Declare the 3rd constant double variable for the wind chill equation = (35.75)

Declare the 4th constant double variable for the wind chill equation = (0.16)

Declare the 5th constant double variable for the wind chill equation = (0.4275)

Declare a double variable for the temperature

Declare a double variable for the wind speed

Declare a double variable for the wind chill

Declare the scanner variable

Print out a header for the program (“Wind Chill Calculator”)

Print out “Please enter the temperature(between -45 and 40 degrees inclusive): “

Temperature = the next double input

While (temp < -45 or temp > 40)

Print out “The temperature must be between -45 and 40 degrees!”

Print out “Please enter the temperature: “

temperature = the next double input

Print out “Please enter the wind speed(between 5 and 60 degrees inclusive): “

Wind speed = the next double input

While (wind speed < 5 or wind speed > 60)

Print out “The wind speed must be between 5 and 60!”

Print out “Please enter the wind speed: “

Wind speed = the next double input

Wind chill = 1st constant + 2nd constant \* temperature - 3rd constant \* (wind speed ^ 4th constant) + 5th constant \* (wind speed ^ 4th constant)

Print out “The wind chill is :” + windChill

Print out “Programmer: Rowan Barr”

Close the scanner

End program

Test Cases:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Test Case # | Input | Actual Input | Expected Output | Actual Output | Did the test pass? |
| 1 | Temp : 30  Wind speed: 20 | Temp : 30  Wind speed: 20 | 17.361783756466327 | 17.361783756466327 | Yes |
| 2 | Temp : -20  Wind speed: 30 | Temp : -20  Wind speed: 30 | -53.02841296896488 | -53.02841296896488 | Yes |
| 3 | Temp : 2  Wind speed: 17 | Temp : 2  Wind speed: 17 | -17.924924783157977 | -17.924924783157977 | Yes |
| 4 | Temp : 70  Wind speed: 20 | Temp : 70  Wind speed: 20 | Error, require new input | Error, require new input | Yes |
| 5 | Temp : 33  Wind speed: -15 | Temp : 33  Wind speed: -15 | Error, require new input | Error, require new input | Yes |