Individual Assignment 1

Part A

Create a new project, ***heater-exercise***, with BlueJ. Create a class ***Heater***, that contains a single field, ***temperature*** whose type is ***double***. Define a constructor that takes no parameters. The ***temperature*** field should be set to the value 15 in the constructor. Define the mutators ***warmer*** and ***cooler***, whose effect is to increase or decrease the value of temperature by 5.0 degrees respectively. Define an accessor method to return the value of ***temperature***.

Part B

Modify your ***Heater*** class to define three more ***double*** fields: ***min***, ***max*** and ***increment***. The values of ***min*** and ***max*** should be set by parameters passed to the constructor. The value of ***increment*** should be set to 5.0 in the constructor. Modify the definitions of ***warmer*** and ***cooler*** so that they use the value of ***increment*** rather than an explicit value of 5.0.

Next, modify the ***warmer*** method so that it will not allow the temperature to be set to a value greater than ***max***. If a user attempts to set the temperature greater than ***max***, provide with the warning message that the user reached maximum temperature.

Similarly modify ***cooler*** so that it will not allow the temperature to be set to a value less than ***min***. If a user attempts to set the temperature less than ***min***, provide with the warning message that the user cannot set temperature less than ***min***.

Add a method, ***setIncrement***, that takes a single parameter of the appropriate type and uses it to set the value of ***increment***. Add a check to this method – if a value less or equal to zero is assigned, print a message: "Invalid entry".

if a value less than or equal to zero is assigned

Don't forget to follow <u>good industry practices</u>:

- All class variables start with an underscore
- Write clear comments
- Classes start with a capital letter
- Methods start with a small letter
- Names must be self-explanatory
- Use ***guard*** statements instead of ***if-else*** statements to avoid nesting
- Always use crocodile brackets for if statements
- Declare class variables one per line

Assignments submissions to follow guidelines specified on Blackboard. Please ensure that you submit code separately for each of the exercises given.

Deadline for submission is **Thursday 4th February @ 11.59pm**