

SE 1108 PROGRAMMING AND PROBLEM SOLVING II

Weather Data System

Create an interface called **DisplayUnit**. This interface should have the following functions:

- `refresh(double temperature, double humidity)`: Updates and prints display's weather data.

Create an interface called **WeatherDataPublisher**. This interface should have the following functions:

- `addDisplay(DisplayUnit du)`: Adds display unit to the array list.
- `removeDisplay(DisplayUnit du)`: Removes display unit from the array list.
- `update()`: Calls the refresh method of all display units in the array list.
- `setMeasurements(double temperature, double humidity)`: Assigns new values for given attributes and calls update method.

Create a class called **WeatherStation**, which implements the **WeatherDataPublisher** interface. This class should include the following:

- `displays (ArrayList of DisplayUnits)`
- `temperature (double)`
- `humidity (double)`
- getter for all attributes

Create a class called **CurrentDataDisplay**, which implements the **DisplayUnit** interface. This display shows the latest temperature and humidity values.

- In refresh function simply display the given temperature and humidity values.

Create a class called **TemperatureStatDisplay**, which implements the **DisplayUnit** interface. This display tracks and shows minimum, maximum, and average temperature values.

- In refresh function update and print the minimum, maximum, and average temperature values according to given temperature value.

Write a main method to demonstrate the functionality of your Weather Data System by creating a **WeatherStation** instance, adding both **CurrentDataDisplay** and **TemperatureStatDisplay** objects as display units, and simulating weather updates using the `setMeasurements` method.