

## 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.