Weather Station

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1 Logistics

The goal of the project is to create a homemade weather station. Our weather station will utilize a variety of meters to measure independent variables such as pressure, temperature, humidity and wind speed. We intend to compile the data collected by the barometer, anemometer, thermometer and hygrometer through a remote transmitter into the Arduino. Our immediate goal is to be able to use the compiled data to give an immediate and accurate representation of the weather outside. The data will be processed and displayed in a simple and user friendly interface on a LED Screen. The final step of our project, we hope to be able to utilize the data that we compile from the meter in order to apply a NWP, a numerical weather prediction model, in order to predict the weather for the next few hours/days depending on how precise our data acquisition is and what type of model we choose to implement. Our weather station can also have indoor practicality since the thermometer and hygrometer data can be used in unison to display weather conditions indoors, which allows users to control their conditions indoors for comfort, health and maintenance of indoor appliances. When conditions are too dry or too moist they can directly affect comfort, energy consumption, and bacteria and fungi growth.

2 Schematic

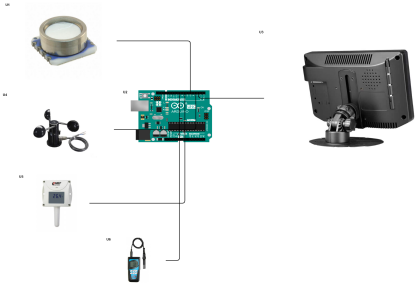

Figure 1: The figure shows all the various meters connected to the Arduino. Using code that we have written, the Arduino will then use the data to display accurate readings of the temperature, humidity, wind speed and pressure on an LED display.

3 Materials

1. Anemometer
2. Barometer
3. Digital Thermometer
4. Hygrometer
5. Arduino
6. Computer
7. LED Display
8. Digital Transmitter