

Interactive Assignment

Laurie Waxman
Data Design Code
Winter 2014

Weather Chime*

The Weather Chime is a physical interpretation and visualization of weather data from The Weather Underground, a website that provides weather forecasts and other weather data for the U.S. and the world.

The Weather Chime will consist of a web-application and a physical object. The web-application will allow the user to choose a city for which to display weather data. The physical output will be a hanging object, somewhat resembling a classic wind chime. A fan will blow around small, dangling strips of white fabric in accordance with wind conditions. Inside the ring of fabric, LEDs will change colour based on more general weather, such as precipitation and temperature.

The Weather Underground API

Documentation

The Weather Underground API Documentation provides data such as current weather conditions, forecast, and history for major cities worldwide, as well as access to weather maps, graphics and radar images. The Weather Chime will require only current conditions.

<http://www.wunderground.com/weather/api/d/docs>

Data

The following is an example of JSON returned from this API.

<http://api.wunderground.com/api/824d574f76baob52/conditions/q/Canada/Montreal.json>

Other Technologies

The Weather Chime will use Node.JS and Node Serialport to connect its physical body to the data from The Weather Underground.

Node.js

A platform for easily network applications such as data-intensive real-time applications that run across distributed devices.

<http://nodejs.org/>

Node-Serialport

A Node.js package to access serial ports for reading and writing to other objects "OR welcome your robotic JavaScript overlords."

<https://github.com/voodootikigod/node-serialport>

Process and Functionality

As there are several components to this project, many steps will be necessary in order to achieve it.

- 1 On the web application, the user will choose a country or state from a drop down menu.
- 2 Using the API and Javascript, the app will generate a list of cities from the chosen location.
- 3 The user will choose a city and hit the submit button.
- 4 The software will convert the data into appropriate formats and send it to the hardware.
- 5 The hardware will output the data.

Materials and Parts

These are the electronic parts and other physical materials this project will require.

- 1 a small toy motor, and fan attachment
- 2 white fabric strips
- 3 RGB neopixels
- 4 a transistor
- 5 various wires/cables
- 6 an Arduino
- 7 some rope/usb cable disguise

Design



