

Weather Mill Station  
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## Concept Weather station

The weather mill station a device that will show you the temperature outside your house and show the temperature inside your house. It show also a indicator of wind by letting the windmill spin depending on the wind speed outside. For rainy days the Weather mill station will blink blue leds to show indication of rain falling. The weather mill is meant to reduce the smartphone use. If the user is stubborn and really wants to access the weather data thru smartphone the weather mill station have his own web-application with data of the weather. The user can access that on the internet thru his or her smartphone.

## Research Question

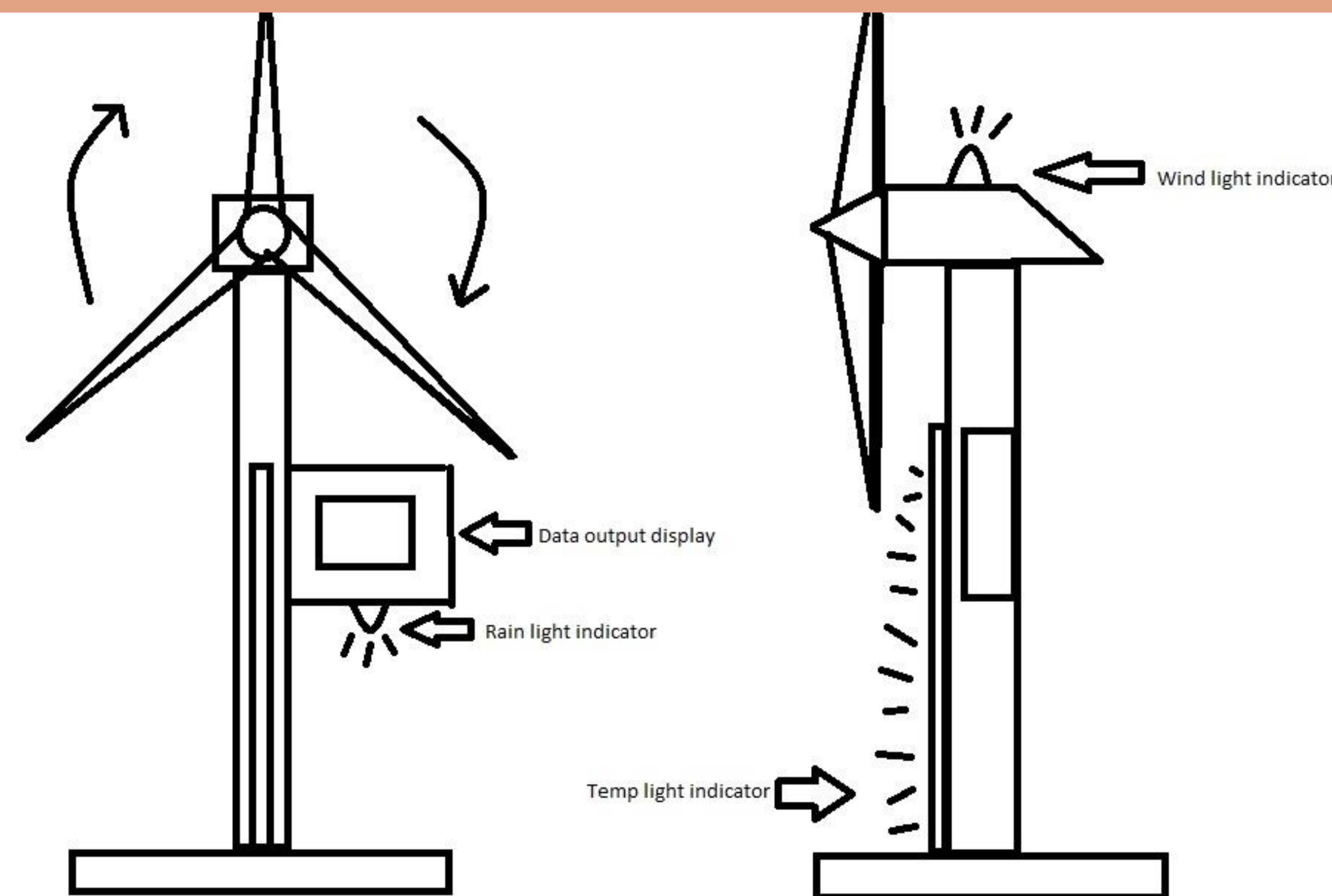
Profile: Hardware interface

Question: How would I display more data instead of the usual temperature data?

As user you always want more out of your product so that means more features and more data. It will make sure that the user has more information of the weather then only temperature.

The goal is to make a button that can switch between modes. So for example you press the button and the mode from temperature will switch to the mode of rain. That change will be visible on the display it self.

## Design Weather station



Weather station windmill blueprint

## Competition analysis

Weather station are already a thing on the market so the Idea self isn't unique. These are companies that already produced weather stations.

- Ambient Weather
  - WS-2902C model
  - easy-to-read LCD color display
- AcuRite
  - Weather alarms
  - 01036M model
- Netatmo
  - ANALYSE PAST READINGS
  - Voice control Alexa

QR: display more data

I checked all the three model and see that most of them already come with all the available data the weather can give. Of all three models they use a weather app to show also all the data instead of a web-application. For example the Netatmo is one of the few models that use voice control to get information about the weather and also the model without any lcd or button. Is completely relying on the app and the voice control from Alexa. But overall the weather stations on the market are all identical to each other.

Source: <https://www.weatherstationadvisor.com/ambient-weather-ws-2902-review/>

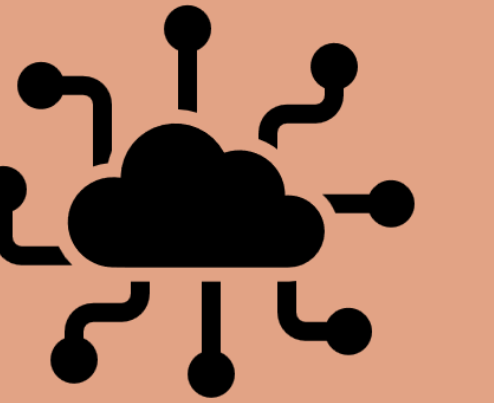
Source: <https://www.acurite.com/media/manuals/01036-instructions-PC-Connect.pdf>

Source: <https://www.netatmo.com/en-ca/weather/weatherstation>

## Blueprint learnings

This project I have learn the following things that I implemented:

- How to develop a web application thru the use of php and xampp
- Making the Wemos connect with web application
- How to use API with the help of Jason library



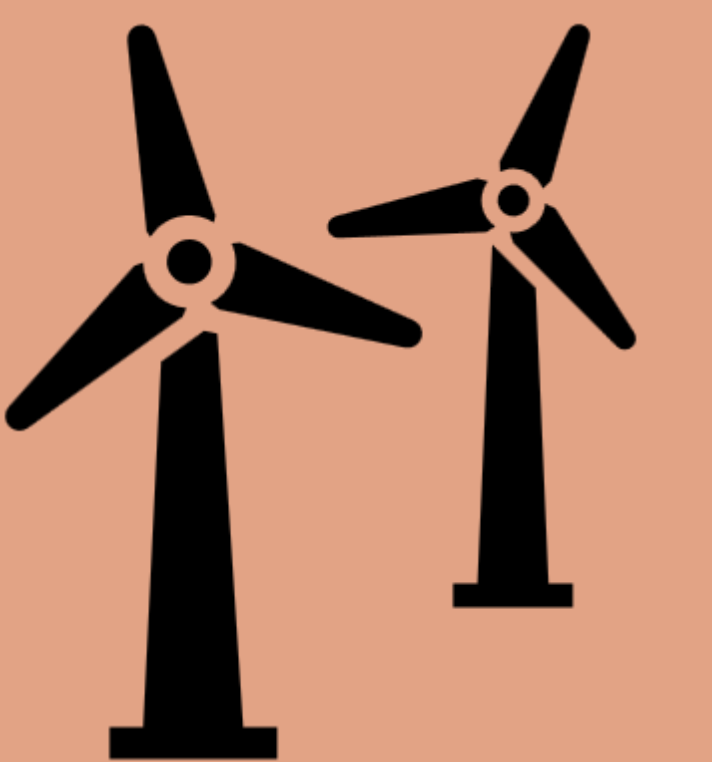
This are the following obstacles encountered in this project:

- The Wemos can't handle the data of a normal API only if the API is compact.
- LCD display RGB(ST7789) couldn't display the data of the temperature sensor. Display may be defect entirely and can't be connected to the Wemos.
- For some reason I couldn't use mamp so use xampp

## Proceedings

The blueprint consist only of the basic requirements of the Weather station, but I will expand the blueprint with the following things

1. Implement dc motors for windmill.
2. Design 3d housing for the display
3. Design 3d housing for windmill motor
4. Creating wood windmill
5. Add more user interface in web
6. Add leds for the weather indicators



## Target audiences

The Weather mill station Is mostly target to an group of people that like the to know the weather without of the use of app. A device that can directly show the state of the forecast when leaving your home. That device represent the Weather mill station.

All kind of people can easily use the device with ages ranging from 8 till 70. the Weather mill helps you decide what to do or wear base on the data the Weather mill gives you. The station main purpose is making the user life of checking weather forecast easier.

Source: <https://appsamurai.com/how-to-promote-weather-apps/>