Johns Hopkins University

Project 5

ESP8266 Weather Station

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EN.605.715.81.FA19 - Software Development for Real-Time Systems

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Contents

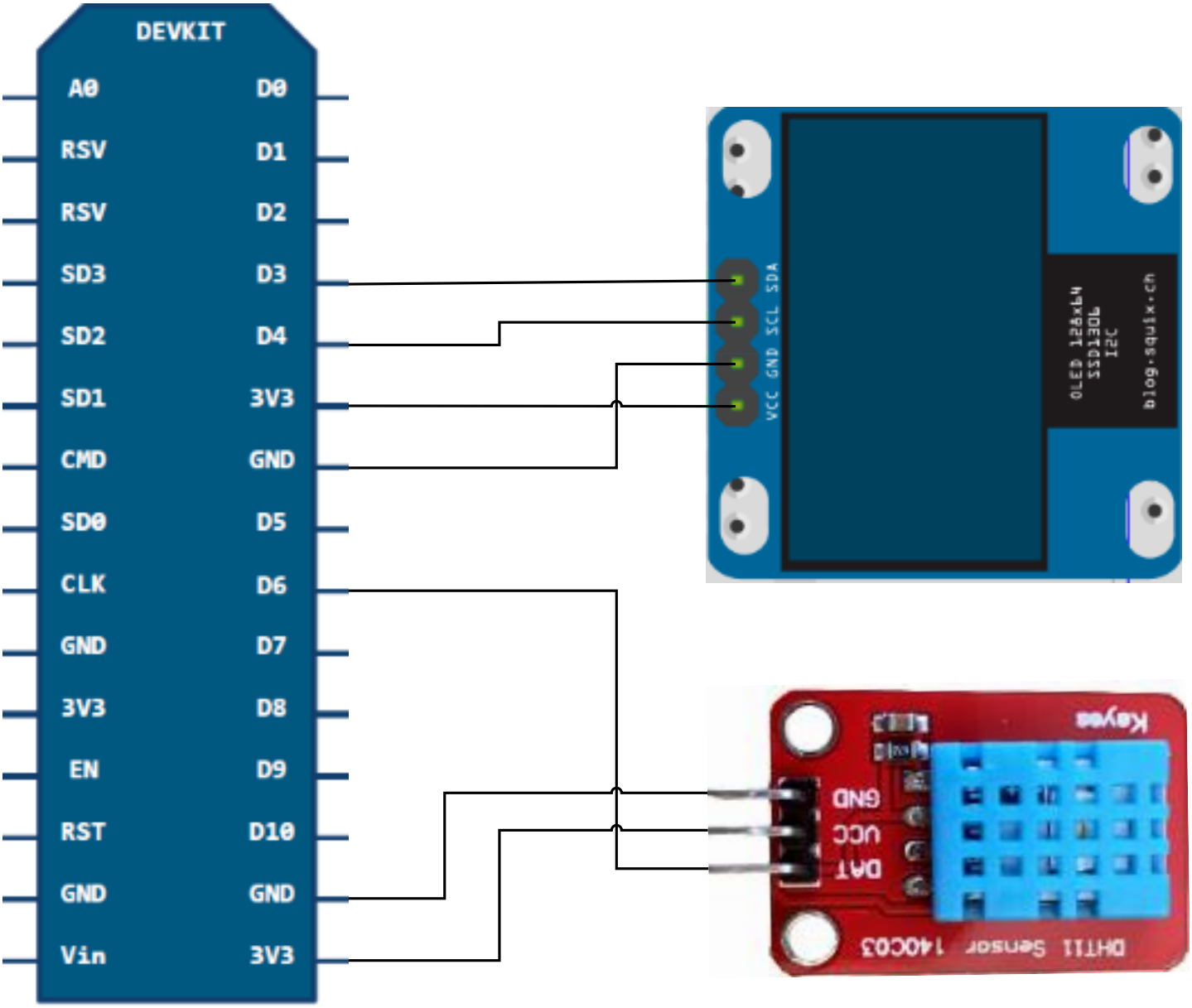
Derived Requirements

The following requirements were derived from the Project 5 ESP8266 Weather Station v1 document:

- The system shall periodically measure the temperature and humidity using the HDT sensor.
- The system shall periodically display the temperature and humidity using the OLED display.

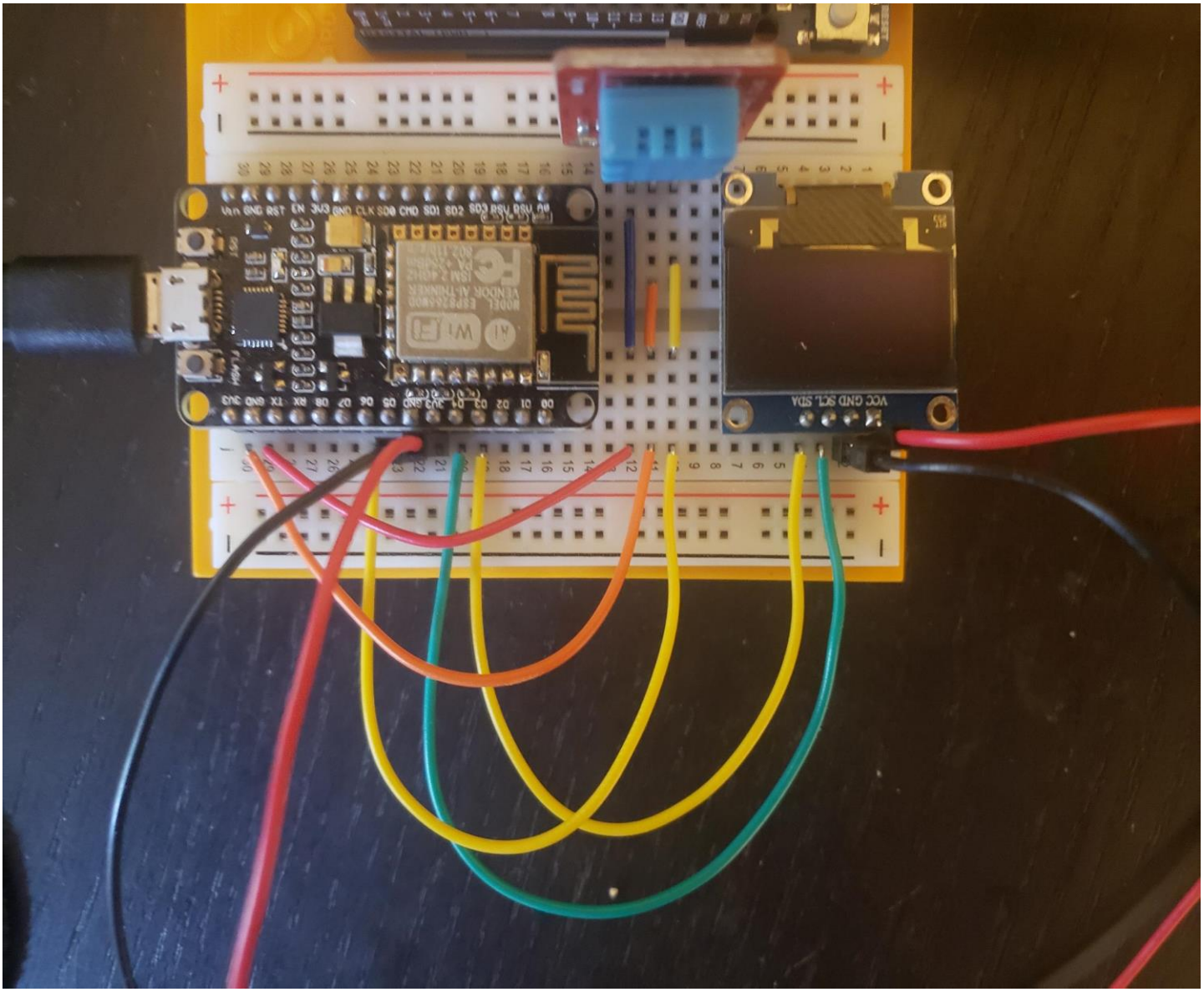
Hardware Design

The following diagram is a schematic of the circuit connected to an ESP8266 that will periodically read the temperature and humidity from an HDT sensor, and then display the temperature and humidity using an OLED screen.



Board Layout

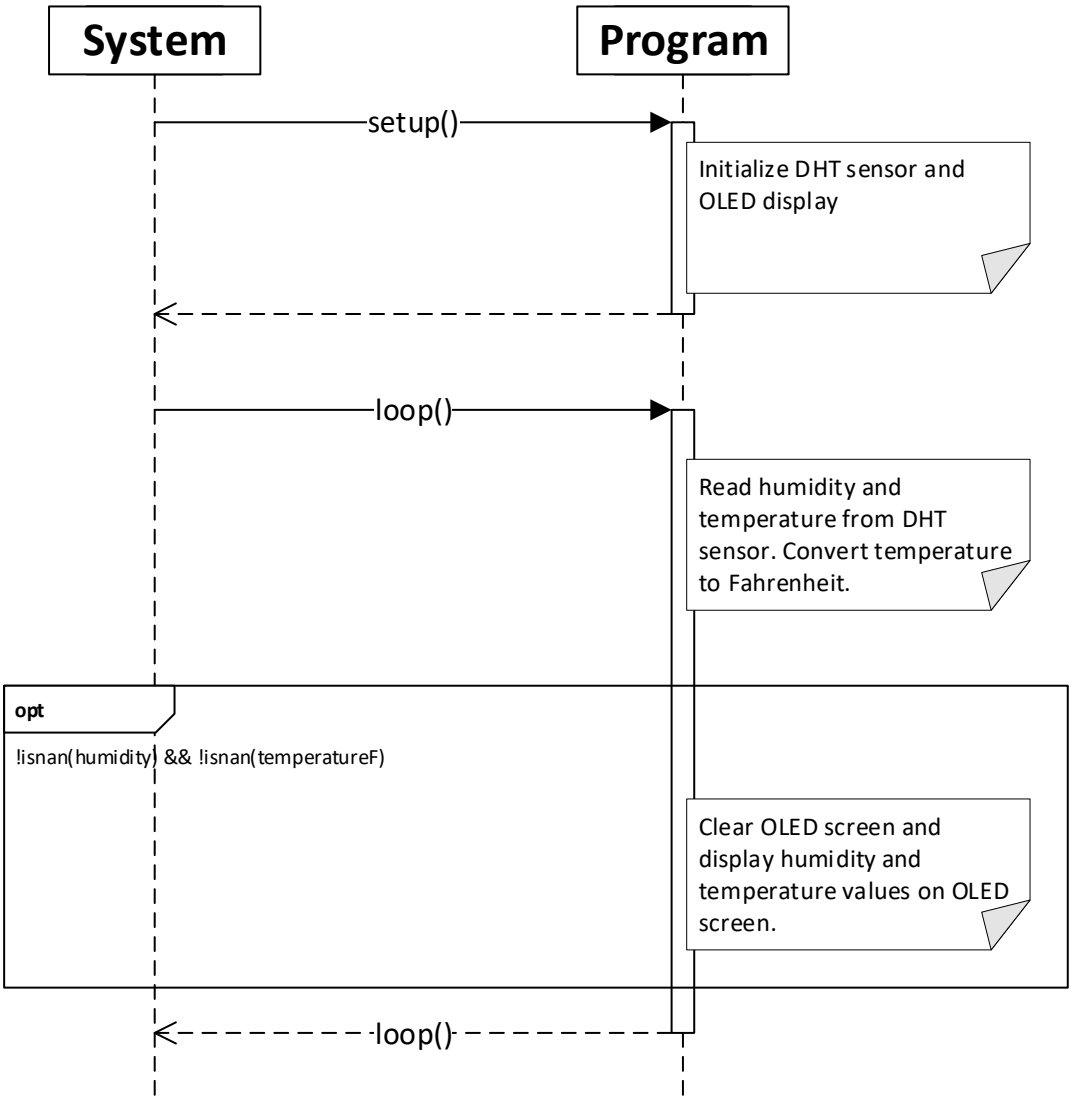
The following picture showcases how the hardware design was implemented using an ESP8266 and breadboard:



Software Design and Implementation

Sequence Diagrams

The following diagram is a sequence diagram of the program that reads the temperature and humidity and displays the values on an OLED screen:



Video Demonstration

A video demonstration of the software and Arduino running can be found at the following link:

https://www.youtube.com/watch?v=_5ITtM-xVMo

https://www.dropbox.com/s/wysekljczhacocx/Miles_Gapcynski_EN_605_715_81_Project_5.mp4?dl=0