# Project Purpose

The purpose of this project is to develop a real-time temperature monitoring system consisting of a temperature monitor, a UI client and a server. The temperature monitor will be a stand-alone Raspberry Pi microprocessor board interfaced to a temperature sensor. The UI will allow a user to create an account or access and already existing account. The server will query the temperature monitor at [user] set intervals and store the data in a database. \* If time permits, an audible alarm will sound on the temperature monitor if the temperature goes outside the set High/Low limits. [Not sure at this point if the server will check/initiate the alarm or if the software running on the temp monitor will do it.

# 1.1 The client-side UI will have the following components (developed using React)

* Create Account
  + Input and Save User Info (mongo DB)
  + Initialize Temp Monitor Information (must complete WiFi connection)
    - Monitor name
    - Set Interval Time
    - Set High/Low Temp Threshold\*
* Login to Account
  + Update User Info (mongo DB)
  + Update Temp Monitor Information
    - Change Interval Time
    - Set High/Low Temp Threshold\*
  + Test WiFi Connection
  + Display Realtime Temperature
  + List Past Temperatures (table)
  + Display Past Temperatures (graphically) [if time permits]

# 1.2 The server will do the following

* Query the temperature monitor for the current temperature and log the data (mongo DB will automatically timestamp the data)
* Sound alarm if outside High/Low temperature threshold\*

# 1.3 The temperature monitor will consist of the following

* Raspberry PI Model 3B+ (software will either be NodeJS or Python)
* Extended breadboard
* Temperature sensor
* Alarm/Buzzer\*
* Small LCD display of current temperature [doubtful I will have time to implement this]