**SMART THERMOSTAT: REQUIREMENTS ANALYSIS DOCUMENT**

The project aims to develop a smart thermostat that is capable of operating via UART over a light weight/custom HTTP protocol. To ensure authorized access, simple authentication protocols, such as hard coding the username and password are used. The system can parse the custom HTTP-like request over UART.

To login into the system and adjust the thermostat settings, the user must enter the username and password. The username and password are pre-shared to enable access to the system. Error-handling is also implemented to handle cases where username and/or password and commands are incorrect. (Future enhancement: To ensure security and efficiency, encryption/decryption algorithms based will be used.)

Once the user successfully enters the system, the user can enter commands using the CLI. The first command is “help”. By using this command, the list of commands and their format are displayed.

The second command supposed to be is “set temp value”. The system then processes the request. What happens on the flip side is that the command now gets stored in Json format on a text file.

The second command is “get temp”. By using this command, the user can retrieve the temperature value. The Json parser will fetch the value of “temp” from text file.

The third command is “scheduleTemp value hour minute meridiem-indicator”. For instance, if the user wants to schedule a temperature of 60 F at 5:30 pm; this can be possible using the command “scheduleTemp 60 5 30 pm”.

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