Austin Little

CS-350

SNHU

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**Project Two Reflection**

1. **Supporting of Peripherals**
2. **TI:**

The simplelink launchpad CC32xx variants contain a thermostat sensor and multiple buttons with LED support. This allows for increasing and decreasing the temperature with separate buttons, reading temperature in real time, and providing an LED to show if the heat is on or off.

1. **Microchip:**

Microchip offers a microcontroller which is the low-power nanoWatt XLP 16-bit PIC microcontroller (the PIC24F32KA302). This microcontroller has a MCP9808 temperature sensor which operates in a range of -40 degrees Celsius to +125 degrees Celsius. There do not seem to be buttons for manually increasing or decreasing the temperature, although the microcontroller was meant to be a real-time thermostat.

1. **Freescale:**

Freescale offers a microcontroller (S9S08EL32F1CTJ) which has a thermostat sensor that can read from -40 degrees Celsius to +85 degrees Celsius. This is less than the Microchip version and this also contains no buttons. Freescale seems to be the worst choice overall when compared to the other two choices.

1. **Accessibility to the Cloud**
2. **TI:**

TI allows users to connect to the cloud via Amazon Web Services. The SimpleLink LaunchPads allow users to install an AWS IoT Software Development Kit which simplifies the process of establishing a connection with the cloud.

1. **Microchip:**

Microchip has a microcontroller which is the AVR-IoT WG board, and it connects to the Google cloud platform as a default. This simplifies cloud connection considering the user must put in zero effort to achieve this result.

1. **Freescale:**

Freescale offers a microcontroller (FRDM-K64F) which uses mbed enabling for cloud services. Freescale seems to be the most out-of-date microcontroller out of the three listed and does not reference how they provide connectivity to the cloud in specifics.

1. **Flash and RAM support**
2. **TI:**

The simplelink launchpad CC32xx variants contain 1MB of Flash and 256KB of RAM. This will be plenty for the program that is running to support the thermostat.

1. **Microchip:**

The microchip microcontrollers come with a variety of different memory sizes. The RAM varies from 64KB – 1Mb and the Flash varies from 1Mb – 64Mb. The wide variety of range ensures that the thermostat could run on a Microchip microcontroller quite easily if the RAM is towards the middle of the range.

1. **Freescale:**

Freescale offers a microcontroller which is the MC9S08SH4CTJ NXP. This microcontroller contains 4KB or flash and 256KB of RAM. This seems to be the worst choice out of the three so far due to the low amount of flash compared to the others.

**Resources**

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