**Module 7: Project**

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For this project we were tasked with developing code to run a smart thermostat. Of the various hardware architectures (TI, Microchip, and Freescale) there are a few important considerations that led us to utilizing the CC3220s microcontroller. Primarily the combination of flexibility (such as multiplexing our GPIO pins) as well as the cost-effective nature of this chip. The TI architecture is built with a focus on integrating with software. This makes it a perfect choice for integrating and creating a smart thermostat. The CC3220s also comes equipped with a temperature sensor as well as a highly-integrated Wi-Fi network processor. This microcontroller also utilizes 256KB of RAM and has an optional 1mb of executable flash. This board utilizes SimpleLink Wi-Fi to provide us with a suite of integrated protocols for Wi-Fi and internet connectivity. This contrasts with for example Freescale who offer a dedicated wireless microcontroller. For the purposes of our project, TI architecture takes the lead again in its flexibility. Our thermostat supports peripherals via the integration of UART. This can be implemented to feed serialized information to a console.