8. Lighting control
9. Ambient temperature monitor

Skills to be gained:

Embedded software development
GUI for embedded systems
Interfacing electronics, actuators, prototyping PCBs and analog signal processing
Cloud computing/ Amazon web services and communication protocols such as MQTT
Hands on experience with reading sensor data
Mobile app/web app development

Tentative Deadlines

8-month timeline

Month 1 and 2: Research about the sensors, and microcontroller's requirement for the project.

Month 3 and 4: Each group member chooses a task explained above and start building it.

Month 5 and 6: Interface each task together by building a user interface that can control all tasks in a house, completing prototype and final touchup.

Month 7 and 8: Prepare documentation and presentation.