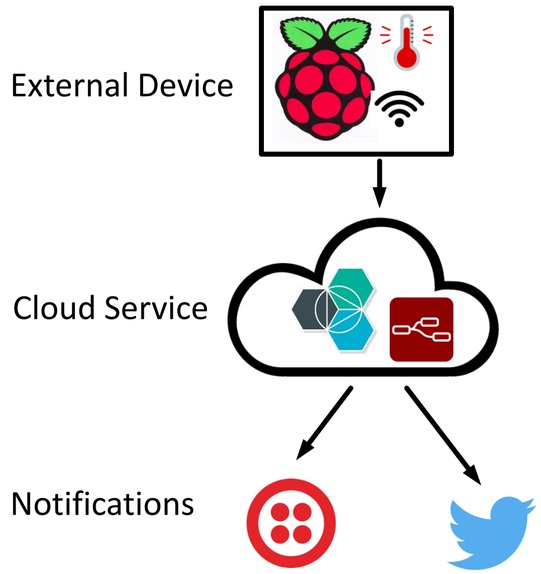
Smart Space Heater

Yixi Chen, William Ehrich, Xinpeng Sun
Northwestern University

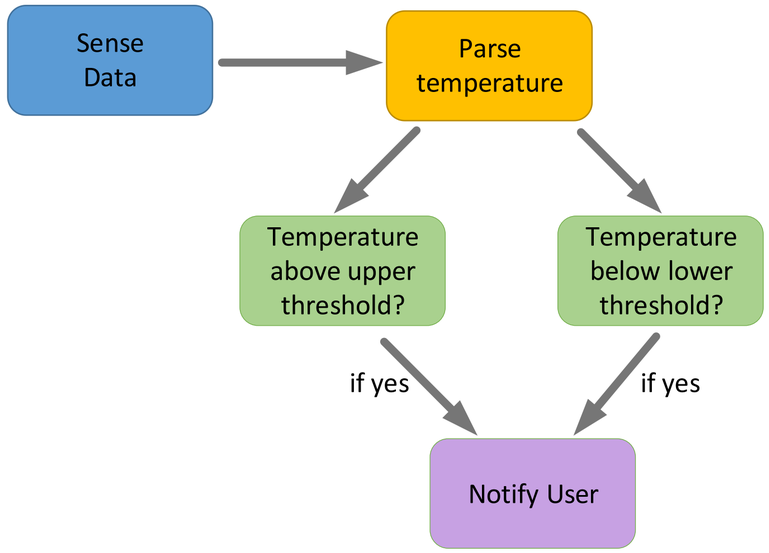
Introduction

Home Internet of Things (IoT) applications have the potential to greatly benefit consumers through added convenience, comfort, and safety. In particular, the focus of our project was temperature control, in which we sought to integrate a space heater into the Internet of Things. The project was of great personal interest to us due to our experiences last winter with old central heating systems that cannot be adjusted by users.

Architecture



Workflow



Implementation

Sensing

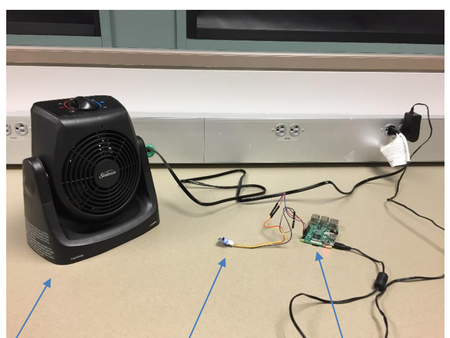
- Raspberry Pi 3 Model B
- DS18b20 Temperature Sensor

Cloud

- IBM Bluemix Cloud Foundry, Node Red

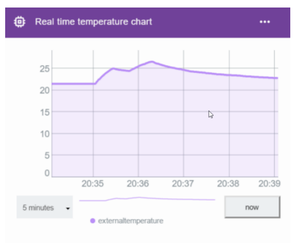
Notification

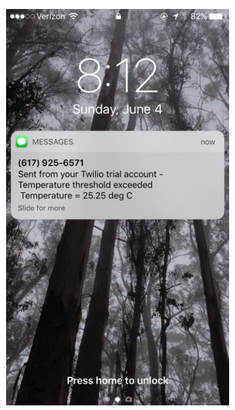
- Twilio API
- Twitter API



Results

- Created IBM Bluemix visualization card
- Implemented text notifications
- Configured twitter updates





Conclusion

Future Work:

- Build a device capable of turning the space heater on and off
- Allow snoozing of temperature alters
- Enable users to set upper and lower temperature thresholds using a mobile app.