

# Hub for Internet of Things

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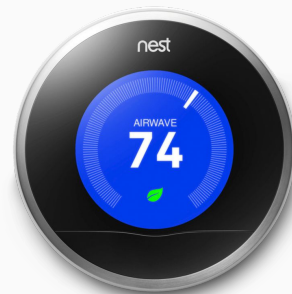
Mentor: Jason Hong, Mohit Sethi

# Motivation

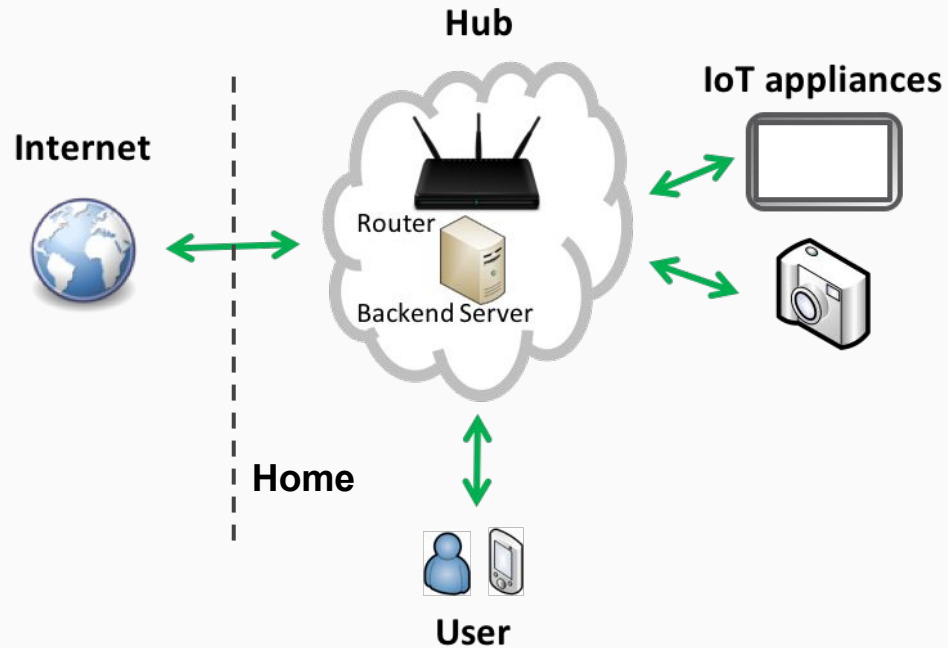
- Internet of Things (IoT) is becoming pervasive.
- Users are not experts with a degree in computer science.
- People will need help in managing dozens or hundreds of devices.
- Privacy and security of home IoT are a big concern.
- A user-friendly centralized control hub.

# Problem to Solve

- Build a hub for IoT that supports:
  - Securely add IoT devices and give them permission to connect to Internet.
  - Monitor the basic status of IoT devices.
  - Allow user to conveniently control IoT devices.



# System Structure



# Milestones

- **Preliminary Project Schedule**

Checkpoint 1	Checkpoint 2	Final Demo
9/30 - 10/4	10/5 - 11/8	11/9 - 12/6
<ul style="list-style-type: none"><li>● Get familiar with existing framework</li><li>● Design UI &amp; system structure</li><li>● Build a simple prototype</li></ul>	<ul style="list-style-type: none"><li>● UI and backend implementation</li><li>● Integration test</li><li>● Improve system security and robustness</li><li>● User studies</li><li>● Iterative development based on users' feedback</li></ul>	<ul style="list-style-type: none"><li>● User studies</li><li>● Research proposal</li><li>● Wrap up and prepare for final demo</li><li>● Draft research paper</li></ul>

# Milestones Breakdown

- **Checkpoint 2**

Task	Time	Member
UI implementation (javascript)	9/22 - 10/20	Mengjin Yan
Backend server (node.js)	9/22 - 10/20	Ken Ling
Play / pause video / music	9/22 - 10/13	Lehao Sun
Software update	10/13 - 10/20	Lehao Sun
Integration test	10/20 - 10/27	All members
User study	10/24 - 11/7	All members

# Milestones Breakdown

- **Final Demo**

Task	Time	Member
User studies	11/8 - 11/22	All members
Iterative development based on feedback	11/8 - 11/22	All members
Draft research proposal and wrap up the project	11/23 - 11/30	All members
Work on research paper	11/30 -	All members

# Risk Analysis and Fallback Strategies

- **Potential Risk I: Hardware Issue**

- Our displays and speakers might not perform as we expected



- **Fallback Strategy:**

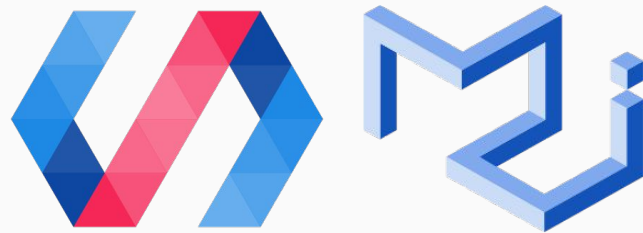
- Use laptop to simulate the hardwares



# Risk Analysis and Fallback Strategies

- **Potential Risk II: APIs' Problem**

- There might be authentication issue with the APIs or the APIs may not work as we expected



- **Fallback Strategy:**

- Use other services and APIs



# Risk Analysis and Fallback Strategies

- **Potential Risk III: Time Management**
  - Our tasks are more complicated than we thought and we cannot achieve our schedule on time
- **Fallback Strategy:**
  - Adjust our schedule and project properly



# Demo

JANE'S HUB

Software Update

Your Samsung Display 1 is ready to update to version 1.1.1.

DETAILSAGREECANCEL

New Movie Release

The Tisney's new movie Freezing is ready to view on Youtube.

DETAILSCANCEL

HOME

DEVICES

SETTINGS

JANE'S HUB



Samsung  
SMART TV

Samsung Display 1

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HOME



DEVICES



SETTINGS

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Thank you.