

Lecture 1

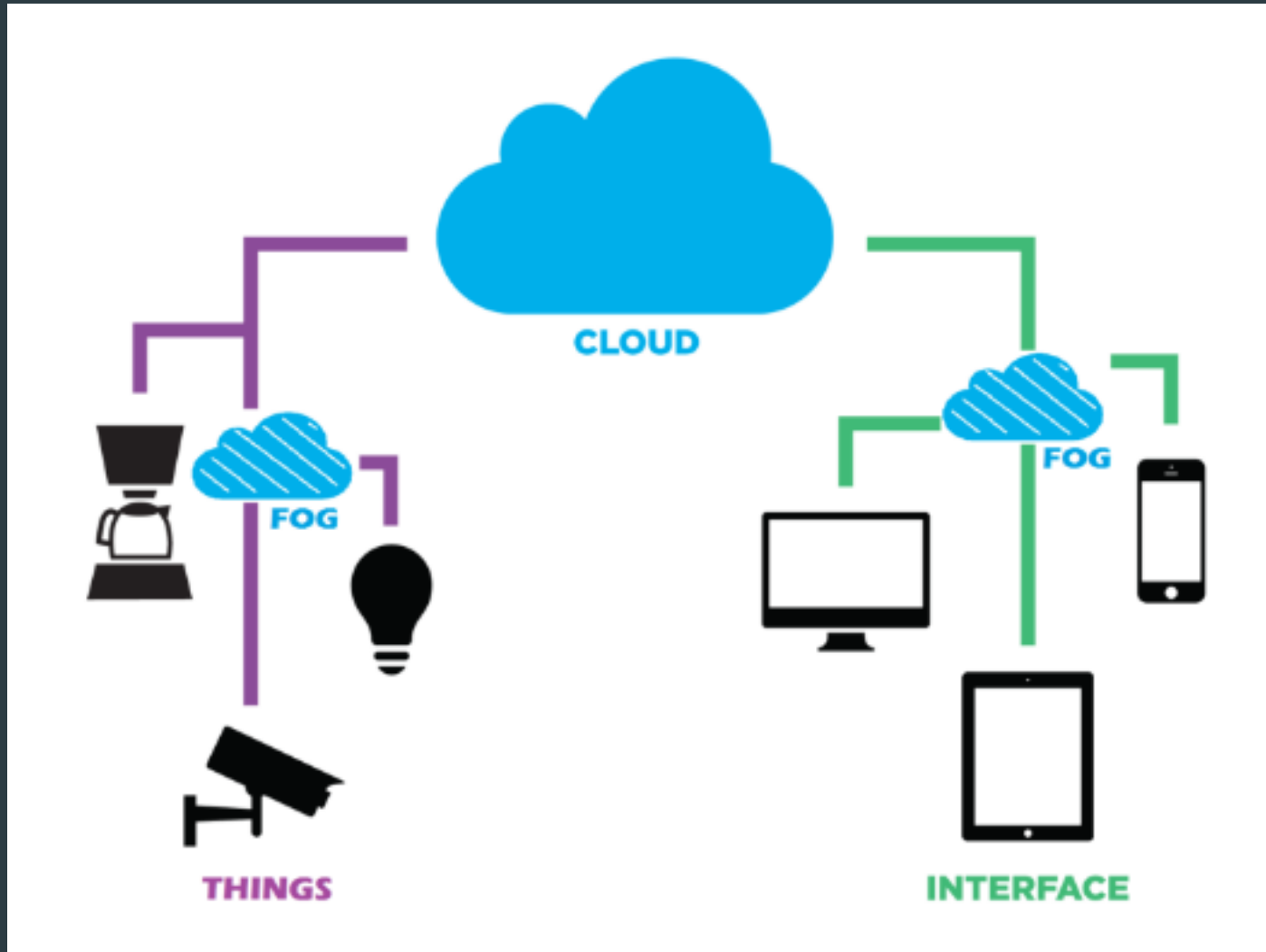
Project Organization

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Project - IoT application

- Input
 - Sensor Data
- Data Analysis
 - Machine Learning/Optimization
- Output
 - Visualization of Data
 - Control Actions
 - Recommendations
 - Alarms

Project - IoT Architecture



Project - Technical Challenges

1. Data Collection

- Integrate data from possibly multiple sources
- Integrate data from third-party sources (Weather)

2. Data Analysis

- Utilize ML/Optimization tools to analyze data.

3. Scalability

- Scale up to million/thousands devices

4. Hardware on Site*

- Tune devices on site to work accordingly

5. Cost-Effective Solutions

Project Organization

- Group Formation and Project Idea (February 20th)
- Project Plan (March 6th)
- Intermediate Report (March 27th)
- Peer Reviews (April 13th)
- Final Report (April 24th)
- Presentation/Poster/Demo (April 25th-April 26th)
 - Exception might be made, since your presence is required.

Project Grading

- Project accounts for 50% of your total grade.
 - 5% -> All Reports besides Final
 - 5% -> Peer Reviews
 - 10% -> Final Report
 - 10% -> Poster
 - 10% -> Presentation
 - 10% -> Demo
 - +5% -> Presentation in BOOM (April 24th).
- The **course** grade would be assigned to M.Eng. projects as well. Note that prelim matters as well.

Group Formation & Project Idea

- List of group Members
 - Name, Net ID
- If this is an M.Eng. project mention who is taking the M.Eng. credits.
- Two paragraphs about the project idea.
 - What are you trying to achieve?
 - Why is it useful?
 - Briefly mention how you are going to do it (input data, analysis, etc.) in one paragraph.

Intermediate & Final Report

Should consist of the following sections:

1. Motivation (idea, why it is useful, etc.)
2. Background (what is the current state?)
3. CS-ANSC Innovation-Implementation
4. Evaluation
5. Conclusions

Projects with ANSC

➤ Pros

- Get bonus +5% for project.
- Cooperate with inter-disciplinary students.
- Do something impactful.
- *Interact with animals.

➤ Cons

- Have a specific goal. Provide a concrete solution.
- Interact with ANSC students.
- Closely monitored by instructors (weekly updates).

Special Projects

- Recommended for:
 - M.Eng. Projects
 - Undergrad students/groups that want to pursue Ph.D. careers
 - Students that want to have impact
- Might differ from typical IoT projects.

Recitation Lectures

- Lecture 2:
 - Lecture about ANSC
- Lecture 3:
 - Project Recommendations
- Lectures 4-14:
 - Project Technologies
 - Project Related Questions/Issues
 - Revisit Course Material

Azure Accounts

- Once you form groups, you will receive some Azure credits for your project.
- We will have examples using Azure technologies in the next lectures.
- Other Cloud vendors might be used. We will not provide funding or assistance for them.