CSE 521S Project

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Steps

1. Come up with your favorite topic
2. Form a team
3. Proposal: propose a design and plan
4. Analyze and Implement your solution
5. Evaluate your solution
6. Demo 1, 2 and Final Demo
7. Write a technical report
Project Topics

- **Theme:** IoT cloud and analytics

- **Build and demo an IoT application**
  - Devices: Raspberry Pi, smart watches...
  - Amazon cloud: IoT, notification, Alexa...

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Get Started Early

- Think about topics and ideas
- Talk to Corey and me
- Put together a team

- A lot of work (and fun) throughout the semester!
Teaming

- Everyone should be in a **three**-member team
  - Need special approval from TA for a different size

- Use **Piazza** to “Search for Teammates”

- Email Corey your team members by **9/22**
  - One email per team

- We will help make sure everyone has a team.
Proposal Presentation

- In class on 10/1

- 7 min per group
  - 6-min talk + 1-min Q&A
  - 4 slides
  - Rehearse over Zoom
  - Turn on your video during your presentation

- Your elevator pitch!

- Email Corey your slides before class
Written Proposal

- One proposal/team, one page
  - Team members
  - Concise description of project
  - Responsibilities of each member
  - Equipment needed

- Written proposal due: **10/1, 11:59pm**
  - Email to Corey
Demo 1

- In class on **10/27** and **10/29**.
- **15 min** per team.
- Must show something **real**.
- Send Corey a video before class as backup.
Demo II

- In class on **11/17** and **11/19**.
- **15 min** per team.
- Substantial progress → final demo.
- Send Corey a video before class as backup.
Final Demo

- In class on 12/17 (1pm - 3:15pm).
- 15 min per team.
- Set up and test your demo in advance.
- All expected to attend the entire session. It’ll be fun!
- Send Corey a video before class as backup.
Final Report

- Submit to Corey by 1/4/2021, 11:59pm.

- Report
  - Style follows conference papers in the reading list
  - 6 pages, double column, 10 pts font
  - Use templates on the class web page

- Materials
  - Web page
  - Slides of your final presentation
  - Source code
  - Documents: README, INSTALL, HOW-to-RUN
  - Video
Suggested Outline

- Abstract
- Introduction
- Goals and Requirements
- Design
- Implementation
- Experiments
- Related Works
- Lessons Learned
- Conclusion and Future Work
Peer Review

- For fairness in team projects.
- Email me on 1/4/2021
  - Percentage of contributions of each team member.
  - Brief justification.
Spice Bot: Spice-Blend Automation

- 3D-Printed Prototype
- Voice-Control-Interface
  - Amazon Echo
- Actuator Control
  - Raspberry Pi
- Control Command Interpretation
  - AWS IoT
Car Informatics in the Cloud

- Pull real-time OBD data from a car
- Upload to the Cloud and display stats at real-time
Smart Lock

- Remote doorway system
  - Live video
  - Arrival (motion) detection
- Web application
  - Node.JS server on an EC2 instance
  - Live video via ssh tunnel
  - Engage/disengage lock