2019 ECE 411
Practicum
Lecture 9

Part 0 - Practicum Check-in

“Wait, what are we doing again?”

ECE411, Inc.

- You Must:
  - Be on a team, have a collab site, chosen a project, written a PDS.
  - Have a final schematic and layout.
  - Have sent that PCB to OSH Park.
  - Received the PCB and assembled it.
- You Should:
  - Have one or more boards up and running.
  - Be furiously debugging and coding.
  - Be thinking about features to cut and possible stretch goals.

Quick poll on project status

- How many teams have:
  - Soldered one or more boards
  - At least one board is brought up and mostly works
  - Have programmed your microcontroller and runs your code
  - Have initial functionality
  - Have full functionality

Questions? Comments?

- What didn't you understand?
- What was surprisingly hard?
- Who was glad they put test points on their board?

Part 1 - Presentations

“ConOps is not a breakfast cereal”

MVP Presentations: 20 + 5 minutes

1. Setup
    - **Less than** 5 minutes
    - *CHECK YOUR LAPTOP IN FAB 155 BEFORE YOUR PRESENTATION DAY!*
2. **Present your MVP with slides**
    - ~ 20 minutes
3. **Questions and MVP demo**
    - ~ 5 minutes
4. Bring up your collab site and I'll ask you to show me a few things

Give one, Get one

- Your team is required to attend at least one other team's presentation.
- Other teams will attend your presentation.
- This is actually interesting.
- Suggest you attend one *before* you give yours.
- You're encouraged to sit in on more than one!

Presentations: Overview

- Everyone in your team has to present
- You should practice at least twice
- Going short is *way* better than going too long (we'll cut you off)

Presentations: Audience

- Your audience: "technically competent managers"
  - Pretend we don't know *anything* about your project
  - Start from scratch and make sure we understand how it works before you go into technical details.
    - **Concept of operations, or "conops"**
  - Don't go very far down into technical details
    - We're talking about block diagram levels 0 - 1
- If something is really unclear in the presentation, **be ready to answer questions during your presentation.**

http://web.cecs.pdx.edu/~faustm/ece411/resources/SamplePresentationOutline.pdf

Part 1: Background

- **FIRST PART OF YOUR PRESENTATION**
  - Overview of your solution and your practicum project
  - **Concept of operation - how does this thing actually work?**
  - Who are you?
  - What problem, if any, are you trying to solve?
  - What does your thing do?
- A good tactic
  - Your classmates will be there; they have no idea what you did or why
  - Explain it to them.

Things in your design section

- After we **understand** your project from a conops point of view…
- Design
  - Level 0 block diagram
  - Level 1 block diagram
- Overview of schematic (maybe more than one slide?)
- Overview of layout
- Overview of BOM
- Overview of firmware
  - Do *not* step through your code. You don't have time.
  - Flowcharts or bullet points are good.

DO NOT FORGET

- Any IP that you used (CAD and firmware)
- MVP issues and feature suggestions
  - What does the team that is taking this from MVP to full product need to know?
- Lessons learned as a team (quickly)
- Lessons learned as individuals (even more quickly)

Presentations: Demo (5 min)

- Demonstrate your device.
  - Backup demo video is a ***really good idea*** in case something goes wrong
  - Let Andrew try it. He'll try not to break it.
- Pull up your collaboration site
  - Looking for all the usual things:
  - README / overview, CAD, PDS, documentation, IP license
  - Optionally: issues, wiki, WPRs, etc.

Presentations: Q&A (5 min)

- As the next team sets up, there may be Q&A from the audience
- Please move out of the way for the next team

Part 3 - OMG CAPSTONES!

“We had requirements?”

START BEST PRACTICES NOW

- Understand your IP!
- Set up a collaboration site!
- Start meeting notes
- Weekly progress reports
  - Did last week, doing next week, what's blocked on who
- Documents
  - Requirements
  - Product Design Specification + Project Plan
  - Design documentation
  - Users manuals
  - Final report
  - Poster

Requirements

- RE-WRITE YOUR REQUIREMENT DOCUMENT!
- Conops *in your words - you may not actually understand what you need*
- What are your **actual** deliverables
- Details, details, details
- Present this to your sponsor before January
- This is literally the **contract** for your capstone

BE PROACTIVE

BIAS FOR ACTION

About ECE412

- 4 credits
- The bulk of your capstone work
- **Go go go go go go**
  - Initial velocity is critical
  - Start now. Don't wait until January
  - If you *actually* start work in February, you won't make it
- **Make a project plan**
  - Use those ECE411 skills!

ECE412 Class

- **We're going to meet the FIRST WEEK OF EACH MONTH**
- **DURING SCHEDULED CLASS TIME**
- **YES, YOU AND YOUR TEAM MUST BE THERE**
- Mark and I will (probably) meet with your team separately

About ECE413

- 2 credits (WTH????)
- Cleanup and polish (but in reality most of your work)
- Documentation

- **ECE CAPSTONE POSTER PRESENTATION!**
  - Usually the Friday of dead week
  - Totes fun: show off your capstone to *everyone*
  - Prizes! Best poster, best project, best presentation

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Feedback

- Comments, questions, and issues please comment here!