Today’s Plan

- Progress checking and upcoming deadlines

- Updates from teams
  - Plan for Sprint 4
  - Testing plan

- Software engineering:
  Requirements specification, design, testing

- Presentations and demos on Dec 11
Overall Course Plan @Week 7

- **Four 2-week sprints:**
  - Oct 15-29 (PRD v1 – tools, technologies, design, terminology);
  - Oct 29-Nov 12 (use cases/user studies, prototyping, PRD v1);
  - Nov 12-26 (design, prototyping, testing, PRD v2);
  - Nov 26-Dec 10 (prototype demo/pres prep, prototyping and testing)

- **Specify what the product will do**
  - Vision statement
  - **Product Requirements Document (PRD)** (due Nov 6 and Dec 4)
  - Design tools, brainstorming, coding (tests and implementation)

- **Build and test an initial prototype**
  - Typically teams iterate on these activities until they converge to a working prototype!

- **Course presentations with demo (will be recorded):**
  - Friday, December 11, 3:30-5:30pm, zoom (details to come)
This Week’s Plan

- Team activities
  - Scrum: Sprint 4, PRDv2 (due this week)
- Section: TA meetings

Upcoming deadlines:
- Dec 4: PRDv2
- Dec 10: Sprint 4 ends
- Dec 11: Fall quarter (midterm) presentations and demos
## Team Updates

- Each lead overviews their project
- Plans for Sprint 4 & testing

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<th>Project</th>
<th>Software</th>
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<td>Appfolio</td>
<td>O(MG)</td>
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<td>Invoca</td>
<td>STORKEAI</td>
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<td>PowWow Energy</td>
<td>POWWOW++</td>
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<td>Teladoc Health (John)</td>
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Sprint 4

- Finish PRD v2 (due Friday), incl. remaining user stories w/ acceptance tests
- Demo prep and presentation practice
  - Demo presentations: last Friday before the finals week
    (8 mins max; check that your laptop works)
  - Final discussion section is for sprint 4 retro and planning
- Break into tasks
  - Estimate/discuss timings (1/2 day – 1 day each)
  - Demo/prototyping plan
  - Total up to have timing per story
- Planning Poker (choose tasks until filled)
PRDv2 in Sprint 4

- Evolve/improve
  - architecture/system diagram
  - in depth writeup: problem, innovation, science, core technical advance; project specifics, team goals/objectives, background, & assumptions
  - Add links (to trello and to github commits) for completed tasks

- More detailed system diagram + detailed design

- 10 additional stories/use cases, 5+ additional implementations/tests
  - Final PRD: 20 stories/usecases, 10+ partially implemented with tests/git commits

- 3+ sequence diagrams

- 3+ UI interaction/sequence diagrams + mockups

- PRDv2 due Dec 4th (end of week 9)
PRDv2: Your Living Requirements Document: A Shared Google Doc

- Authors, Team, Project Title
- Intro: problem, innovation, science, core technical advance (3+ pages)
  - Define project specifics, team goals/objectives, background, and assumptions
- System architecture overview
  - High level diagram (1 page)
  - User interaction and design (1+ pages) – ie detailed design
- Requirements (functional and non-functional)
  - User stories or use cases (links) → 20+ for PRDv2 prioritized w/acc. tests
  - Prototyping code, tests, metrics (10+ user stories): github commits/issues
- System models (1+ pages)
  - Contexts, interactions, structural, behavioral (UML)
  - Use cases, sequencing, event response, system state, classes/objects
- Appendices - Technologies employed
Your Project Design: PRDv2

- **Architecture (hardware/software)**
  - Evolve your overview picture from PRDv1 to provide significantly more detail and any updates or changes

- **Detailed design**
  - UML diagrams of primary data structures that comprise the system architecture connected via their associations (if any)
    - Ensure that each "class" is balanced in terms of cohesion & coupling
    - Annotate with pre/post conditions when appropriate
  - Sequence diagrams
    - Synchronous and asynchronous for key interactions between classes
      - At least 3 different interactions
    - User interactions with the system
      - At least 3 different interactions
      - Can be a human user or a machine user (API) interaction
        - Event response, updated application state
      - If you have a user interface: Provide mockups for primary UIs
PRDv2 User Stories / Use Cases

- Revise spec to add detail to the functional specification to match your design

- Add user stories and break up the stories you have into finer grained stories
  - Provide UML, sequence diagrams, dataflow diagrams
  - Goal: a CS senior should be able to take your doc and implement the project

- For each fine-grained story, provide a description and acceptance test
  - Provide time estimates (1 person-hours) for each story implementation
    o Ensure you can finish the implementation in the time you have (this/next quarter)
  - Prioritize tasks to have a complete prototype by the end of this quarter
    o Focus on the externally facing interfaces, mock out what you cannot get to
  - Write unit tests to implement tasks for mandatory tasks
    o Document these tasks (autogen the documentation/usage)
  - Add trello/pivotal task links (titles must match) to PRDv2 for each story

- Prototype designed mandatory tasks; add github commit ID/link to PRDv2
  - Github must have unit tests, documentation (for anything without unit tests), and prototyping implementations for each story in Sprint

- If you have a user interface
  - Provide mockups that are tied to the functionality described in 1+ components
Completing the Fall Quarter

- **Nov 30:** Potpurri (Week 9) Presentation/demo details
  looking ahead (break & Winter)
  - Meetings with 4 teams (Alcon, Invoca, QAD, Novacoast)

- **Dec 7:** short meeting (Week 10)

- **Dec 11, 3:30-5:30:**
  Project presentations with demo
  - Will be recorded: Check with your mentor if concerns
  - All mentors are invited:
    Team leads—please invite your mentors
3:30 Introduction (Jianwen Su)
3:35 Team O(MG)
3:44 Team StorkeAI
3:53 Team PowWow++
4:02 Team Salt
4:11 Team Alpro
4:20 Team Log
4:29 Team Transform
4:38 Team Binary Bros
4:47 Team Runtime Terror
4:56 Team #Stub
5:05 End
Instructions for Presentations (Demos)

- Will be evaluated!
- Presentations worth a significant portion of grade
  - Order of teams is on the class schedule website
  - 8 mins max (points for getting the timing right!)
  - Laptop must work! Points deducted if it doesn’t, so test in advance
  - Will be recorded
- Outline (~1 slide each) – all members of team should speak
  - Introduce team and give team name and company
  - Introduce the problem
  - Overview and demo how you solve it: use pictures, demo recording OK
  - Provide some technical details, novelty and challenges (2 slides max)
  - Next steps (plan for what is left / CS189B)
Tips and Advices

- Practice, practice\(^\infty\)
  - Time yourselves to that you get as close to 8 minutes as possible \textbf{without} going over

- Test that your laptop works; have a backup laptop and \texttt{usb w/presentation}

- Live demo OK but record it also so that you have a fallback

- CS189A presentation is not anything like what your final presentation (CS189B) will be like. Different format, duration, level of preparation, purpose
  - Purpose: state clearly your problem/solution and innovation
    - As a hand off to cs189B instructor; not open to the public

- CS189B – identify/implement advanced features, get feedback from users/others, extensively test (make it \texttt{bulletproof!}), public presentation & demo prep
Wrapping up the Fall

- Course grades: all “I” (incomplete) for this quarter
  - Letter grades at the end of Winter quarter

- Course evaluations:
  - Both the instructor and TA
  - Deadline for submission: Dec 11

- Enroll codes for Winter: already sent to team leads

- Planning ahead
  - Holiday break
  - Winter