15-413: Software Engineering Practicum

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Administration

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Course Objectives

- Carry out a software development project for a real client
  - Client is a developer on a real open source project

- Practice software engineering processes and techniques
  - Conform to the process of your open-source project
  - Estimation and planning
  - Architecture and design
  - Coding to a standard
  - Quality assurance, testing, and inspection

- Reflect on your experience

Responsibility To Your Customer

- Respect your mentor's time
  - Be on time to meetings
  - Use meeting time wisely; come with clear goals
  - Use judgment before contacting mentor
- State your commitments clearly and then meet them
  - Communicate problems/needs early
- Work as a team toward a common goal
- Use the development process to deliver a high quality product
  - Be proud of your work!

Course Structure

- Projects:
  - Work steadily on developing software products
  - You will need to learn the process used by your open source project and follow it
- Assignments:
  - Practicing software development techniques in a project context
  - Structured reflection on your experience
- Classes:
  - Very few lectures, some team presentations
  - Weekly team meetings with instructors and open-source mentors
    - To be scheduled; some meetings during class periods when there is no lecture
  - Class schedule will be adapted as needed

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Assignments

- This week: begin projects
  - Interact with mentors, schedule meetings, being startup tasks
  - Begin to track time
- Jan 21: first weekly meeting; time tracking and analysis (weekly hereafter)
- Jan 28: Open Source Process report due
- Feb 7-9: Hackathon at Facebook
  - Meet teammates and mentor, make team progress on project
  - You should hear from Facebook re: flights soon, if not already
- Feb 18: Architecture report due
- Mar 25: Inspection report due
- Apr 15: Quality Assurance report due
- Finals week: Final project report due

Deliverables

(CMU-local) group deliverables, in addition to the project:

- Picture of Success
- Weekly reports
- Open Source Process report
- Architecture document
- Quality Assurance and Testing report
- Inspection report
- Final Project Presentation and Report

Individual deliverables:

- Individual reflection
- 360° peer evaluations

Grading

- 75% contributions to open-source project (e.g. checked-in code)
  - Joint evaluation by client and instructors
  - Typically instructors will defer to client, so long as client is reasonable
  - You should also spend ≥75% of your time on the project (9 hours/week)

- 25% assignments and software engineering process
  - Be more effective
  - Get more out of the course

Some of the grading will be team-based

- Based on (CMU-local) group deliverables
- Possibly also based on recommendations of the open-source client

Project Assignments

- You should have received an email about your assigned project
  - Let us know **immediately** if you did not get this!

- Some of you may not have gotten your first choice
  - This is inevitable given the many students involved here and elsewhere
  - The value of this experience is most strongly correlated with the investment you make in project contributions and the relationship that develops with your mentor as a result
  - Many students reflect at the end of the program and realize they would rank their preferences very differently than they did initially
  - Stay positive and make the most of the opportunity!

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Dropping the course

- This is a group project course
  - Your teammates and open-source client are depending on you.
  - If you drop the course, especially late in the course, you will impact them negatively.
  - We had to turn away many students because there was not capacity to accommodate them.

- Please talk to the instructors before dropping. Maybe we can help!
  - Grading will be reasonable in this course. There is no curve. If you make mistakes, you can recover.
  - We do not expect you to put in more than 12 hours/week; this course is about working smarter, not harder.

What to do this week

- TODAY
  - Write an email to members of your group, the open-source client, and the instructors, if you have not done so already
  - Introduce yourselves and respond to any questions the open-source client has already given
  - If the open-source client has not assigned you an initial task, ask him or her what you can do to get started
- By next Tuesday
  - Have a weekly team meeting time with your mentor scheduled
  - Write a Picture of Success for your team (more on next slide)
  - Prepare a report on the time you spent in the class (more…)
  - Make progress on your initial project tasks
    - E.g. try out the software, compile and run tests, etc.

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