

Grad Software Engineering

Intro Lecture

First things First

- Syllabus
- Reverse roll call.
- Admin:
 - We are hiring and we want your input. A talk will be given by each applicant who has reached the on campus interview stage

This Course

- Welcome to Software engineering
- Target audience:
 - Those of you who are fresh out of undergrad and have never worked as a professional developer.
 - Those of you who have programmed but have been out of the field for a few years
 - Those of you well outside of the target audience – we can talk
- For many:
 - Give you the chance to build skills and practice your craft

The modern version of this course

- The current incarnation of the course came because
 - The current MS course is just now shaking off its historical roots
 - Once upon a time the MS was for locals changing careers.
 - As the student demographic changed the faculty didn't and so change came slowly.
 - Last big revision in 2011 added mandatory capstone project.
 - But courses made for different program

Hole Number 1

- Not enough group work
 - Group work is tricky
 - But real software dev work is done in groups – exclusively
 - Not always fun at first for all students

Hole Number 2

- Not enough work on large projects
 - Nowhere in our required courses were students given a large code base, some documentation, and a pointer to a problem and told “fix it”
 - Closest was networking
 - This is a glaring hole
 - So several electives are trying to plug that hole

Hole Number 3

- Not enough appreciation for social/ethical concerns issues:
 - How often do we think about the side-effects of the wonders we create?
 - What will be the side effects of our tech drive
 - Quick examples
 - WA state from 1990s: all public records are online
 - Anonymous social media leads to suicide of preteen girl one the one hand and Arab Spring on the other
 - And the rush to computerize cars?
 - <https://www.autoblog.com/2017/08/04/self-driving-car-sign-hack-stickers/>

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A final major goal

- Lifetime learning
 - One of the major goals of a college education
 - Teach you how to learn on your own.
 - When you begin there is of hand holding
 - By graduate school we want to take off the training wheels
 - you'll get “go look at this” in industry – and you have to go learn it and see if it will work.
 - we'll try some of that this semester

So to the biggest goal

- You sit down in front of a big project and
 - Realize its no big deal, nothing that 20-40 hours won't be enough to get your head around.
 - You just start using documentation and testing to learn the new system.

A few thoughts on Software

- Soft Skills

- I wanted a book on developing software in real life
- I've tried books, this semester I'm going to try some podcasts
- Cowboy coding bad!
- Take care of yourself
 - Google campus vs recent Taiwanese gambler
- People with both coding and people skills will go far.
 - People with only one will need to work on the other

People Skills

- This will be a recurring theme
- Coding skills are important,
 - But so are people skills, you can't be effective in your career if you don't hone your people skills
 - <https://www.nytimes.com/2016/02/28/magazine/what-google-learned-from-its-quest-to-build-the-perfect-team.html>
 - Google spent 5 year studying what made a productive team
 - They had some that chatted a lot, socialized a lot
 - They had some that were all business
 - They tracked who the people on each team had lunch with (all very 1984) some always sat with same people, some switched it up each day
 - None of it mattered – what did?

Google and people skills

- So what did Google discover after 5 years by some great minds and lots of data analysis?
 - That teams where everyone speaks about the same amount are far more effective.
 - No one dominates the conversation
 - Everyone respects the others in the group – and the group
 - Sonmez, currently working in softskills for developers summarizes from How To Win Friends And Influence People By Dale Carnegie (first published in 1936) what Google just spent 5 years proving.
 - Assignment listen to him

Hacking the Interview

- Another soft skill:the interview
 - It is better to make the interview a formality
 - Be known in the community
 - Find out who works where you want to work
 - Go to stuff where they go
 - Go to hackathons
 - Go to meetups
 - All that people work
 - And for technical demo – if you don't have production code or an internship – have a public github profile – and make sure your projects are solid

Assignment

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- Create a GitHub account
 - You can use the free version of the account for this class
 - Send me email to let me know what your github Id is. The email is due by 11:59pm Mon Jan 23rd and will count as a quiz grade
 - Listen to this podcast
 - <http://www.programmingthrowdown.com/2017/07/episode-68-soft-skills-with.html>
 - Programming throwdown interviewing Somnez
 - And do quiz 0 – at the end of class, Lets move on for now after short break.