CMPT 276 Class 00: Welcome to the Introduction to Software Engineering!

Dr. Jack Thomas

Simon Fraser University

Fall 2020

Welcome to CMPT 276 and the Fall 2020 Term!

- This course will be offered fully online as part of SFU's social distancing policy for Fall 2020.

- Starting slow today by discussing how the course will work.

What Is Software Engineering?

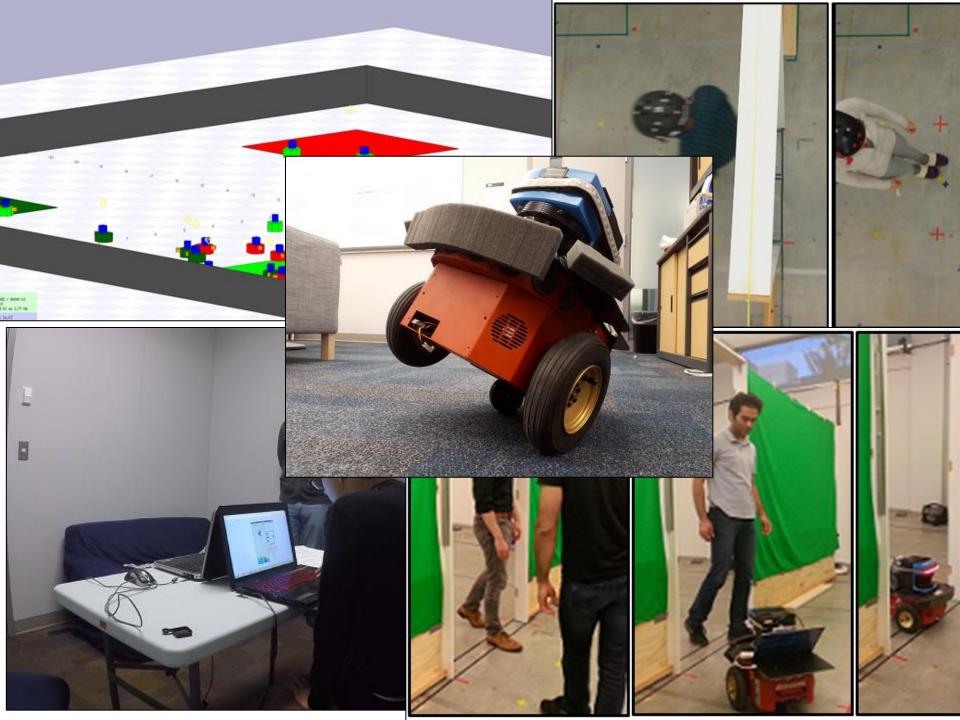- **Software Engineering**: The theories, methods, and tools for <u>professional</u> software development.

- A discipline concerned with all aspects of software production, from early specification to maintaining systems while in use.
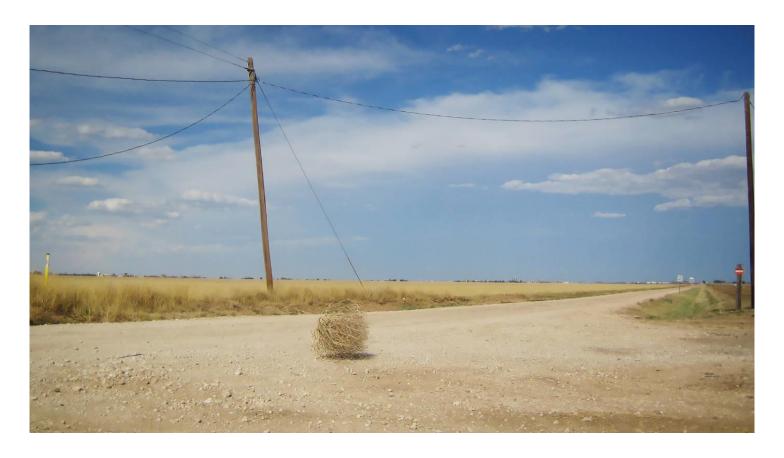
Who Am I?

- Dr. Jack Thomas (jackt@sfu.ca), Sessional Instructor.

Image credit: *Animal Crossing: New Horizons* (2020)

Who Are Your TAs?

Will provide office-hour, question-answering, email-reading, and grade-determining services

Who Are You?

- Most likely a second-year Computer Science student.

- You've done some programming in C++ or maybe Python.

- Looking ahead to co-ops and other work opportunities.

- **Note**: not everyone fits this description, and that's fine – good, even!

So, Will There Be Programming?

- Yes!

Java & Android

Prior Knowledge

- How to program in an object-oriented programming language.
  - If you already know C++, Java should be easy to pick up during Assignment 1.

- How to develop simple object-oriented applications

Class Discussion

- Let's test our discussion capabilities!

1. What would be the hardest software system to create?

2. What is the greatest software success?

3. What is the worst thing computers are used for?

Course Goal and Topics

- **Goal**: A basic introduction to professional software development, where you learn to be part of a team.
- Course material is split into three topics:
  1. **Methodologies** (How to approach being a software developer)
  2. **Tools** (Technologies aside from code itself used to professionally develop software)
  3. **Java and Android** (the architecture we'll be working with)

Some Official Course Topics

1. **Software Process:** software life cycle, Agile vs plan-driven development.
2. **Requirements:** system analysis and modeling, requirements specification
3. **High-level Design:** UML, architectural, design patterns
4. **Implementation:** coding style, code review, pair programming
5. **Quality assurance:** unit & integration testing
6. **Development tools** such as IDE, debugger, and revision control (Git/GitLab).
7. **Ethics** of software development

Some Less-Official Topics

- Getting Hired

- Labour Rights and Unions

- Job Benefits and Compensation

- Workplace Diversity and Culture

- The Realities of Working Software

Basic Info

- Course website:

https://opencoursehub.cs.sfu.ca/jackt/grav-cms/cmpt276-2/home

  - Notes
  - Assignments
  - Project
  - Videos
  - Course Info

- Some textbooks on software engineering and Android are recommended, but not required.

All Course Resources and Platforms

- CourSys is for submitting assignments and final grades.
- Slides, tutorials, assignments and more will go on the course website.
- Office hours will be over Discord.
- Canvas records these lectures and stores some files that need to be protected (solutions, etc).
- A class Piazza is available for discussions.
- cmpt-276-d2-help@sfu.ca for appealing to the teaching team for help – when it's set up. In the meantime, jackt@sfu.ca also works.

Grade Breakdown for the Course

- **Assignments** (15%): Three solo programming assignments, two weeks apart.

- **Group Project** (30%): In three iterations, each two weeks apart.

- **Midterm** (20%): Covers the first half of the course, October 28th.

- **Final Exam** (35%): Covers the whole course, exact date TBA.

First Assignment

- Going up after class today, due September 23rd.

- An introduction to Java programming and the course's workflow (JUnit, Git, IDEs, etc).

- Check the course website for the assignment description and links for the Java style guide and Integrated Development Environment.

Group Project

- Will be kicked off six weeks in, after completing the three assignments, and will consist of three phases.

- The goal is to collaboratively develop a piece of software as a team.

- Groups of four will be randomly assigned.

Academic Integrity

- Professionalism tip: Don't plagiarize!

- Don't share code, take code from the internet, or resubmit old work.

- MOSS will be used to check code submissions for plagiarism.

- SFU's Academic Honesty statement: http://www.sfu.ca/policies/gazette/student.html

No funny business, got it?

Image credit: https://www.britannica.com/plant/moss-plant

Special Thanks to Dr. Brian Fraser

- Credit for the course's design. Many materials are derived from his work.

- He also produced most of the tutorial videos on our course website.

Recap – For Next Class

- Assignment 1 going up tonight. It's due in two weeks, on Wednesday September 23rd.

- Check out the course website, sign up to the Piazza, join the Discord.

- Watch the posted Java tutorial videos, maybe track down a recommended textbook.

- Next class: we actually get started on Software Engineering!