EECS 201

Computing for Computer Scientists

Pat Pannuto / Marcus Darden

What this class is about

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- This is not "Tools for Computer Scientists"
- Though, we will cover a lot of cool tools
- The goal is to give you the ability to pick up, learn, and use tools effectively
- The goal is not to completely teach you any tool (they made the internets for that!)

This class is *NOT* a set of tutorials

1. Log in to a CAEN machine in Linux
2. Press the "windows" key to open the application launcher and then type "gedit"
3. Now copy-paste the following block of code into the window:

```
#include <stdio.h>
int main() { printf("Hello Worl
d\n"); return 0; }
```

4. Type "Ctrl-s" or click the "save" icon, save the file as "myprogram.c" in your home directory.
5. Press the "windows" key again and type "terminal"
6. In the window that appears, type "gcc myprogram.c -o myprogram"
7. Now type "./myprogram"

1. Open your favorite text editor and write a basic "Hello World" program
2. Compile and run your program

Lectures give you the "what" and the "why", homeworks are a self-guided tour on the "how"

- Lectures are designed to be interactive
- Lots of live coding, lots of mistakes!
- **Bring your laptop to every class**

This is a very individual class

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The second time you do it

Collaboration

Less than you're used to

- The goal is to build your *individual* skills
- You will get the most benefit doing assignments on your own

"The 15 Minute Rule"

- A little frustration is a good thing, a lot is a bad thing
    - Try to solve a problem on your own for 15 minutes before asking for help
    - After 15 minutes, ask for help!
    - Good rule of thumb outside of this class too

Course Resources

https://csprag.github.io

- The course homepage. Everything is here or linked from here.
  - Homework assignments
  - Lecture materials
  - Syllabus, schedule, etc
- You can also get here from canvas

Piazza

- Essentially high-latency digital office hours
  - All questions *private* by default

Gradescope

- Homework submission
  - Warning, their clocks are unsympathetic
- Entry code MRV3B8 (also on course homepage)

Course Meeting Time and Location

- **Section 001** 1670 BBB, Wednesday 1:30p-3:00p
- **Section 002** 1670 BBB, Friday 1:30p-3:00p

Work and Expectations

This is a 1-credit course

- 1 credit = 4 hours of your life / week
  - 1.5 hours in lecture
  - 1.5 hours of homework
  - 3 times this semester: 2-3 hours of "advanced exercises"

Grading

40% Homework

- One homework every week except the last week
- (Yes there is homework this week)
- Due the last minute of the second Wednesday after class

30% Attendance & Participation

- No attendance in week 1
- We'll take attendance every week, somehow

30% Advanced Exercises

- Explore a topic in more depth
- Due the second Wednesday after class
- *Must be turned in at office hours*

You need will need your own computer for this class

CAEN machines are **NOT** sufficient for this class

If you don't have your own computer...

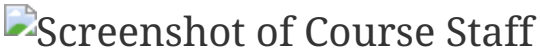
- Dog ate it
- TSA confiscated it on your flight to Michigan
- Drunk roommate confused it for a frisbee

The CSE department has some loaner laptops available for the semester[†]

- Contact Don Winsor: don@umich.edu

[†]For people with genuine need, please don't abuse this

Course staff



^another screenshot of csprag.github.io

Administrivia

Take A Break

1. Take a selfie
2. E-mail c4cs-photos@umich.edu with…
    - Your name
    - Your picture
    - One thing you want to get out of this course
    - Anything else you want us to know about you
        - Preferred nickname
        - Special considerations
        - Awesome trivia
3. Meet a stranger
    - Preferably not the person right or left, maybe turn around behind you?

Photo credit Apple Computer, Inc.

`<class>`

Straw Poll: Who has Linux on their laptop?

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Having something Unix-like on your machine will make your CS life at Michigan much more pleasant

- This not because Unix is "better"
- This does not mean you cannot use Windows

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This is pretty easy to do with most laptops now

- OS X has it built in
- Linux subsystem for Windows in the "Windows 10 Anniversary Update"

The CSPrag Game!!

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Round 1: The Forearm Check

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What is a "Virtual Machine?"

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What is a "Virtual Machine?"

Also a safe playground for you to explore

Also a common platform for teaching

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Round 2a: What is a computer, really?

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What is a "Virtual Machine?"

Also a safe playground for you to explore

Also a common platform for teaching

For HW1, you'll install a VM to use this semester

Live exercises in a Unix environment

- What is a shell?
- Why learn this stuff in 2017?
- The critical basics:
  - Where am I?
  - What is nearby?
- What commands have you seen before?

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- What commands have you seen before?

- cat
- cd
- chmod/chown/chgrp
- clear
- cp
- diff
- echo
- fg/bg/jobs [ctrl-z]
- grep
- help
- kill
- ls
- man
- mkdir
- mv
- pwd
- rm
- sleep
- tail
- touch
- true
- whoami

Welcome to CSPrag

Looking forward to a great semester!