Welcome to 107A

Our room is absurd
Today

- What is 107A?
- Course Policies
- Am I enrolled in 107A? Will I be?
- Who am I?
- (if time) Some Unix Content
What is CS107A?

- A class that meets twice a week in which we will do:
  - A small warmup activity (usually incorporating an icebreaker question)
  - A short lecture on the important topics in 107 that week
  - Practice problems either as a class or in small groups
What is CS107A?

- A class that meets twice a week in which we will do:
  - A small warmup activity (usually incorporating an icebreaker question)
  - A short lecture on the important topics in 107 that week
  - Practice problems either as a class or in small groups
- An extra resource for 107 content
  - In addition to 107 Helper Hours, I hold 107A-specific office hours that are only open to you in which we can go over 107 assignments, practice problems, exams, etc
  - All 107 materials including slides and in class exercises + solutions will be posted on the 107A website
  - I will try to record the lecture portion of class, but no guarantees
What is CS107A?

- A class that meets twice a week in which we will do:
  - A small warmup activity (usually incorporating an icebreaker question)
  - A short lecture on the important topics in 107 that week
  - Practice problems either as a class or in small groups
- An extra resource for 107 content
  - In addition to 107 Helper Hours, I hold 107A specific office hours that are only open to you in which we can go over 107 assignments, practice problems, exams, etc
  - All 107 materials including slides and in class exercises + solutions will be posted on the 107A website
  - I will try to record the lecture portion of class, but no guarantees
- A community!
  - 107 is a lot of work, but it’s a lot more work when you do it alone
Today

- What is 107A?
- Course Policies
- Am I enrolled in 107A? Will I be?
- Who am I?
- (if time) Short Exercise / Get to know each other
Course Policies

- Attendance is mandatory at both sections every week!
- You have to attend all but 2 mandatory sections (mandatory = starting next week)
- You have to pass 107 in order to pass 107A
- If you have to miss class for any reason, let me know within 2 days and we can work something out
  - If you miss more than 2, I will also have to keep ACE leadership in the loop
- That’s it!
Class Meeting Time

- We had an unexpected room/time shuffle late last quarter
- This time is less than ideal for many reasons
- Please fill out this form to help us decide whether to stick with it or not

https://forms.gle/FPapyfjTW4BF1L6e7
Today

— What is 107A?
— Course Policies
- Am I enrolled in 107A? Will I be?
- Who am I?
- (if time) Some Unix Content
Am I enrolled in 107A? Will I be?

- No one is enrolled yet - you need a permission number from me
- All non-grad students should receive an enrollment number by the end of the week
- All grad students should too as long as there isn’t any rush of undergrads interested in the course
web.stanford.edu/class/cs107a/
Today

—What is 107A?
—Course Policies
—Am I enrolled in 107A? Will I be?
  - Who am I?
  - (if time) Some Unix Content
I’m Frankie, the 107A instructor

- CS undergrad (systems) + CS coterm (security)
I’m Frankie, the 107A instructor

- CS undergrad (systems) + CS coterm (security)
- I love to teach! Besides 107A this year...
  - CS106B section leader for 3 years
  - CS106L lecturer last year
I’m Frankie, the 107A instructor

- CS undergrad (systems) + CS coterm (security)
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  - CS106B section leader for 3 years
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- I’m from Minnesota
I’m Frankie, the 107A instructor

- CS undergrad (systems) + CS coterm (security)
- I love to teach! Besides 107A this year...
  - CS106B section leader for 3 years
  - CS106L lecturer last year
- I’m from Minnesota
- I love hiking, canoeing, hockey, making dinner and eating the leftovers for lunch the next day and **in class participation**
Today

— What is 107A?
— Course Policies
— Am I enrolled in 107A? Will I be?
— Who am I?
- (if time) Some Unix Content
Today Part 2 (Unix)

- The command line
- Stanford’s Myth machines
- Access the myth machines through ssh
- (if time) Talk about UNIX
  - Learn about file paths
  - Learn some useful commands you will use over and over!
What is the command line?

- The way you use your computer now is really nice!
  - You have a mouse, a pretty desktop, little folder icons representing where your files are
- The command line is a text-based way to use your computer
  - Which is worse in most cases, but better for running code!
Quick Demo - Terminal app on Mac
What are the Myth machines?

- Computers in Gates basement! Room B08
- That you have access to :) 
- And we will be using in this class to run all of our code

The Myth machines ->
UNIX and Linux

- UNIX and Linux are both operating systems - programs that run on every computer to define its basic functionality (Macs run MacOS!)
- The Myth machines use Linux, which was inspired by UNIX, so you might hear those terms interchangeably
- Operating systems define a set of commands that we can use from the command line (like `cd` and `ls`)
- In addition to using these commands, you will be implementing several of them throughout this quarter! You will become the OS-architect
How do I connect to the myth machines? ssh

- You don’t have to go all the way to Gates to use these computers
- You can connect to them via the internet using a program called ssh (“Secure Shell”) that we run from the command line
- To connect to your “account” on the myth machines, run

  ssh <your_SUNetID>@myth.stanford.edu

- It should ask for you password, enter it (the cursor won’t move, just keep typing)
Quick Demo - Myth
The two most important UNIX commands + one more

- **ls [PATH]**
  - Means “list” - it will list out all the files and folders in the specified directory.
  - You can run just `ls` and it will list all the files in the current directory.
  - Or run `ls PATH` and it will list all the files in the directory given by **PATH**.

- **cd PATH**
  - Means “change directory”,
  - It will move you from your current directory into the one given by **PATH**.

- **mkdir [PATH/]name**
  - Means “make directory”
  - Will make a folder called name in the path given by **PATH**, or in the current directory if none is given.
File Paths

- When we say “directory”, think folder - it's a file with other files in it!
- A **file path** specifies an exact route to a specific file or directory
  - ~/Desktop/example_file.txt says that in the ~ directory, there is a folder called Desktop, which has a file called example_file.txt in it
- File paths can be **relative** or **absolute**
- Absolute paths start with special directory names, either ~ or /
  - ~ is the home directory, where you usually start in myth, / is the root directory
- Relative paths specify paths within the current directory you are in
  - Desktop/example_file.txt is a relative path. If we are currently in ~, it would refer to ~/Desktop/example_file.txt. If we were currently in ~/Documents, it would refer to ~/Documents/Desktop/example_file.txt
- Special relative paths: . means “current directory” and .. means “parent directory”
Demo - make your 107A folder
Demo - draw Frankie’s file tree
Exercise:

cp -r /afs/ir/class/cs107a/WWW/lecture_code/wk1_1 .
1. Go around in a circle and introduce yourselves and say where you live. For each member of your group, create a textfile called THEIR_NAME.txt in the appropriate subdirectory of the campus directory.

Example: if Frankie lives in McFarland, create
CS107A/wk1_1/campus/east_campus/frankie.txt

2. Challenge: if two people live in the same dorm, create a subdirectory on the appropriate place titled dorm_name and move their textfiles into that directory.

Example: if Frankie and Jerry live in Wilbur, move
CS107A/wk1_1/campus/east_campus/frankie.txt and
CS107A/wk1_1/campus/east_campus/jerry.txt to
CS107A/wk1_1/campus/east_campus/wilbur
Command-line quick-reference

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- **mkdir [PATH/]name**
  - Means “make directory”,
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- **touch [PATH/]name**
  - Will make a file called name in the path given by `PATH`, or in the current directory if none is given

- **cp [-r] PATH_SRC PATH_DEST**
  - Means “copy”,
  - Will copy the file specified by `PATH_SRC`, or everything in the directory specified by `PATH_SRC` if `-r` to the folder specified by `PATH_DEST`
Recap

- To pass 107A: attend class + pass 107
- Fill out OH + Class Time form!
- In 107, we do all our work on the Myth machines
- You can remotely log into the Myth machines using `ssh SUNET@myth.stanford.edu` in terminal
- Since we can only access the Myth machines through terminal, you will have to learn how to navigate using the command line
- `cd`, `ls`, `mkdir`, `emacs` are all commands you should get comfortable with!