

SEE, I'VE GOT A REALLY GOOD SYSTEM:
IF I WANT TO SEND A YOUTUBE VIDEO
TO SOMEONE, I GO TO FILE → SAVE, THEN
IMPORT THE SAVED PAGE INTO WORD. THEN
I GO TO "SHARE THIS DOCUMENT" AND
UNDER "RECIPIENT" I PUT THE EMAIL
OF THIS VIDEO EXTRACTION SERVICE...



I'LL OFTEN ENCOURAGE RELATIVES TO TRY TO SOLVE
COMPUTER PROBLEMS THEMSELVES BY TRIAL AND ERROR.
HOWEVER, I'VE LEARNED AN IMPORTANT LESSON: IF THEY
SAY THEY'VE SOLVED THEIR PROBLEM, *NEVER* ASK HOW.

LAB 1 - GETTING STARTED

Please take a minute to fill out this form:

<https://goo.gl/forms/WR0vxKUJLbuu0DLd2>

INTRODUCTION: ABOUT MELISSA

- Senior studying Computer Science and Math
- Favorite things:
 - Programming
 - Teaching
 - Math
 - Classic rock
 - Any kind of puzzle
 - Westworld
- Email: mmgeorg@umich.edu
- Office hours (usually):
 - Monday 2 - 3pm
 - Tuesday 6 - 8pm
 - Thursday 6 - 7pm

ABOUT EECS 280 LAB

- When/ where is lab?
 - Section 24, Friday 2:30pm - 4:30pm 4153 USB
- Why come to lab?
 - Walk through worksheet solutions, time to work on the coding portion of the lab collaboratively
 - Interactive tutorials on using CAEN, debugging, etc.
 - Weekly lecture review where we'll talk about the topics that are important for projects & exams, and I'll help you with tips to avoid common pitfalls
 - Written practice problems that will serve as exam prep.
 - You'll have an opportunity to ask all of your questions regarding labs, lectures, and projects
- How should I prepare for lab?
 - There are no computers in here - please bring your laptop, or contact eeecs280staff@umich.edu so we can help you borrow one!
 - In the past, my students have found it useful to follow along in my slides. They will be posted every week before class in the "LabReference->Melissa George" folder.

ABOUT EECS 280 IN GENERAL

- My tips for success:
 - Keep up with lecture content
 - Start projects early
 - It's okay to struggle
 - Google is your friend
 - Engage on Piazza - ask and answer questions
- You CAN succeed in this course - I'm here to help you do that! Take advantage of lab and ask me all of your questions.

README

REMINDERS

- Lab 1 due Sunday, 16 September 2018, 8pm on the autograder
- Project 1 due Tuesday, 18 Sep 2018, 8pm

AGENDA

- Welcome to EECS 280 Lab!
- Mini lecture: CAEN, Git overview
- Common project 1 questions
- Complete Lab 1
 - Submit on autograder

PROJECT 1 - COMMON QUESTIONS

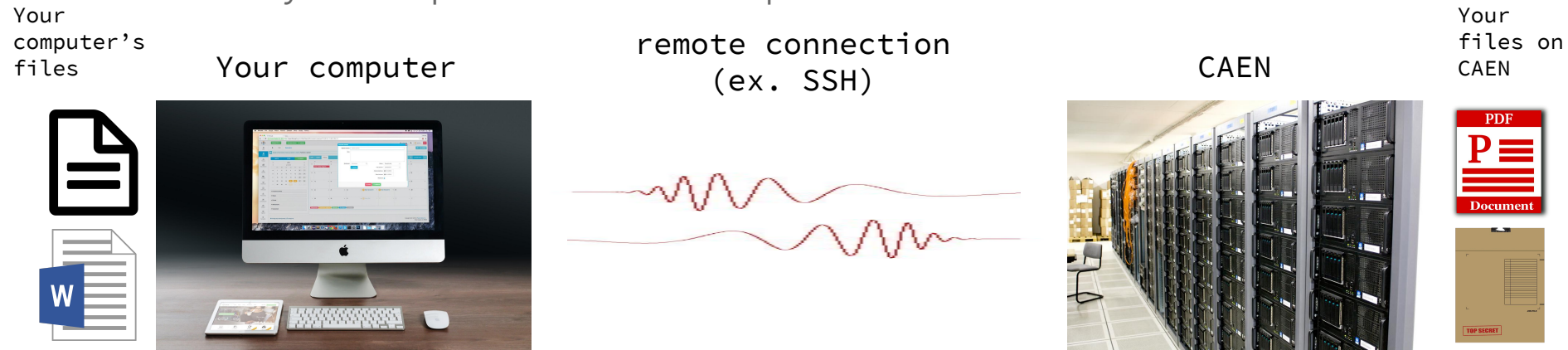
- Relationship between stats.h, stats.cpp, main.cpp
- Working with file I/O?
- Doing mode & summarize functions?
- How to test your code?

WORKING IN YOUR TERMINAL

- `mkdir <new directory name>` == make new directory with `<new directory name>`
 - Directories are like folders - think of the file structure in Finder/ Windows Explorer
- `cd <name of existing directory>` == change into directory
 - Changing directories is like moving up and down in Finder/ Windows Explorer folders
 - `cd ..` == go up one level
 - `cd /home/username/eecs280/eecs280_lab01`
- `pwd` == present working directory
 - Tells you the answer to the question “what folder am I in right now?”
- `ls` == list what is in this directory
 - Like when Finder/ Windows Explorer shows you what’s in the folder

INTRODUCTION TO CAEN

- What is CAEN?
 - Computer Aided Engineering Network - network of computing resources for students to use (access a computer in person, or remotely access a CAEN server from your personal computer!)
 - CAEN Linux environment closely replicates the Autograder's environment - always test your code on CAEN before submitting
 - You won't lose your files if they are on CAEN
 - You can compile and run programs faster on CAEN than on your personal computer!
 - Note: your computer and CAEN computers don't share each other's files



INTRODUCTION TO CAEN

- How do I connect to CAEN?
 - Make sure you have a CAEN account
 - See setup tutorial
 - Recommended: access CAEN from a CLI - a command line interface
- Mac/ Linux Users:
 - Open up a new terminal
 - Type “ssh `username@login.engin.umich.edu`”
 - (NOTE: won't work if you don't have 2FA set up)
- Windows Users:
 - Can open up Cygwin or WSL and type “ssh `username@login.engin.umich.edu`”
 - Can use PuTTY - ssh functionality on Windows
 - Change IP to CAEN's hostname and click “open”
 - OR CAEN VNC - works, but not recommended

GIT

- Git is basically a version control program
- Helps us keep all of our files safe, keep every version of our project
 - We can return to an old version of our code if we break something
 - We can “push” to GitLab so that if something bad happens to our computer, our files are still safe
- Git \neq GitLab, but GitLab \cong GitHub
- When you use Git:
 - You save copies of previous versions in your directory so that you can return to them at any time
- When you use GitLab:
 - You also save copies of previous versions remotely- on GitLab’s servers- so if something goes wrong, you can always get your code back

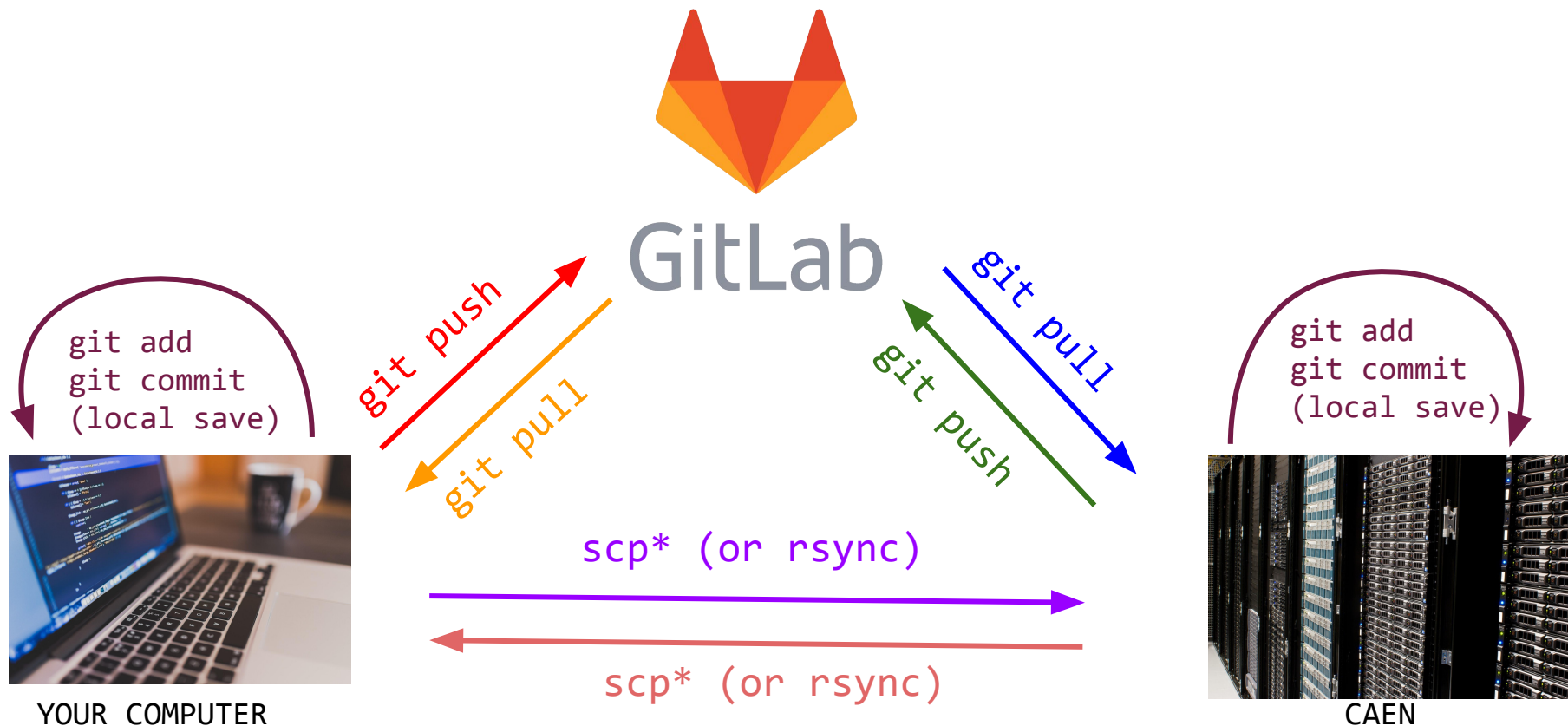
COMMITTING AND PUSHING YOUR CODE

- “Saves” in git are called “commits.”
- Remember these 3 basic steps:
 1. `git add -A` == “get ready to save all of the files in this directory”
 2. `git commit -m “this is my message”` == “save all of the added files, and associate this message with that save”
 3. `git push -u origin master` == “push my new saved code to GitLab so that the remote GitLab knows about the new changes too, not just my computer”

CAEN, GITLAB, AND YOU

*scp info in
appendix

How to get your files from one place to another



MORE GIT COMMANDS

- `git log` == “show me a record of all of my commits”
- `git status` == “show me a record of the files I’ve changed recently”
- `git checkout <commit number> <file>` == “I want this file from when I made that commit”