Installation Day!

CMPSC 101, Lab 1
Aug 29, 2024

Technical Leaders

https://www.cis.allegheny.edu/teaching/technicalleaders/

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WE ARE TECHNICAL

We aim to achieve competence and excellence in technical knowledge, its applications, and effects.

WE ARE INCLUSIVE

We provide an inclusive community environment which invites and celebrates diversity of experience, thought, and belief.

WE ARE ETHICAL

We make decisions rooted in the principles of equity and justice, focusing on the greater good of our communities.

WE ARE RESPONSIBLE

We honor commitments and take responsibility for our actions and outcomes.

ALLEGHENY COLLEGE
DEPARTMENT OF COMPUTER AND INFORMATION SCIENCE

OUR SHARED VALUES

Technical Goals

Access Accounts

- **GitHub**
- **Discord**

Install Software

- **Sublime Text 4**
- **Git**
- **Python 3.8** or later
- **Poetry**
- **Gatorgrade**

Bridge between online and local

- **SSH key**

Think of this as a challenge

- to almost find a solution, then start over
- to turn it into a story for your friends
- to help students do the same thing next semester and next year!

Hopefully you will also learn some of the jargon along the way
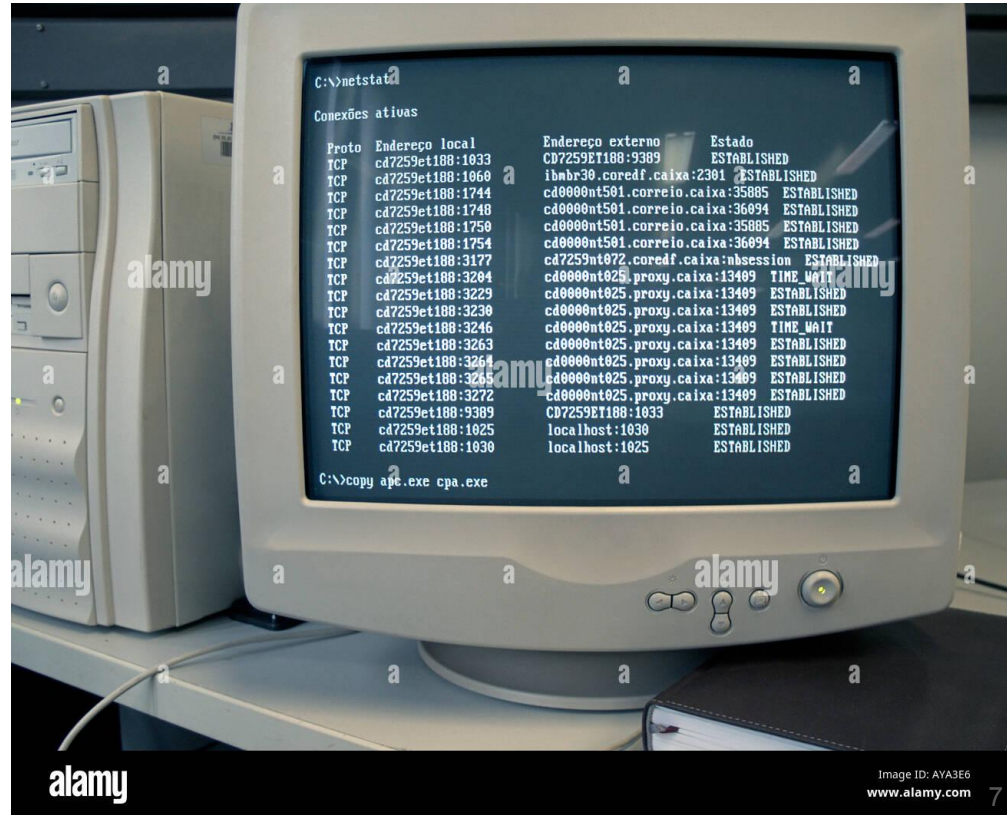
Be Persistent

Everyone's system will be slightly different

- When something is not working:
  1. open a new **terminal** and check again
  2. read & google the **errors**
  3. ask your neighbors what they did
  4. reboot system (more common for windows)
  5. talk to TLs in lab and TL office hours
  6. come to instructor office hours

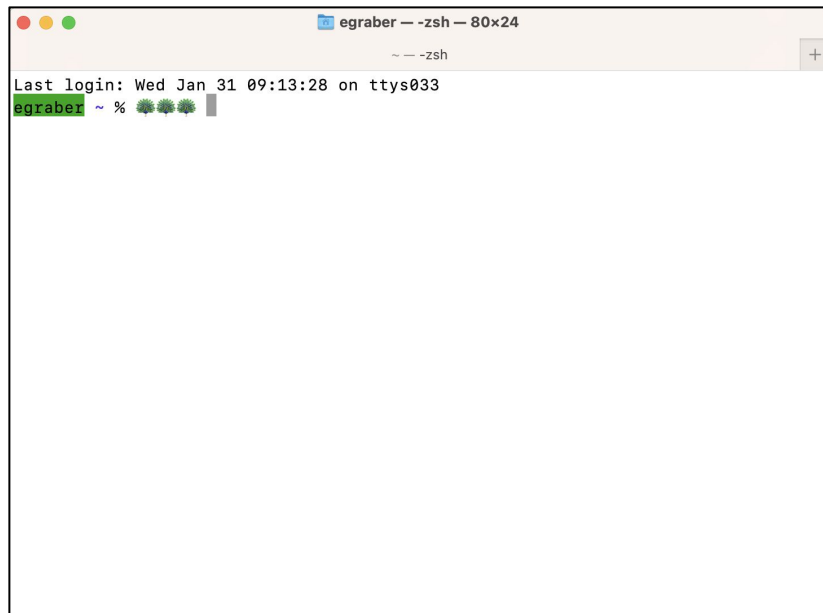Once this process is done, you will be able to establish a **workflow** on your computer!

Introduction to Terminal

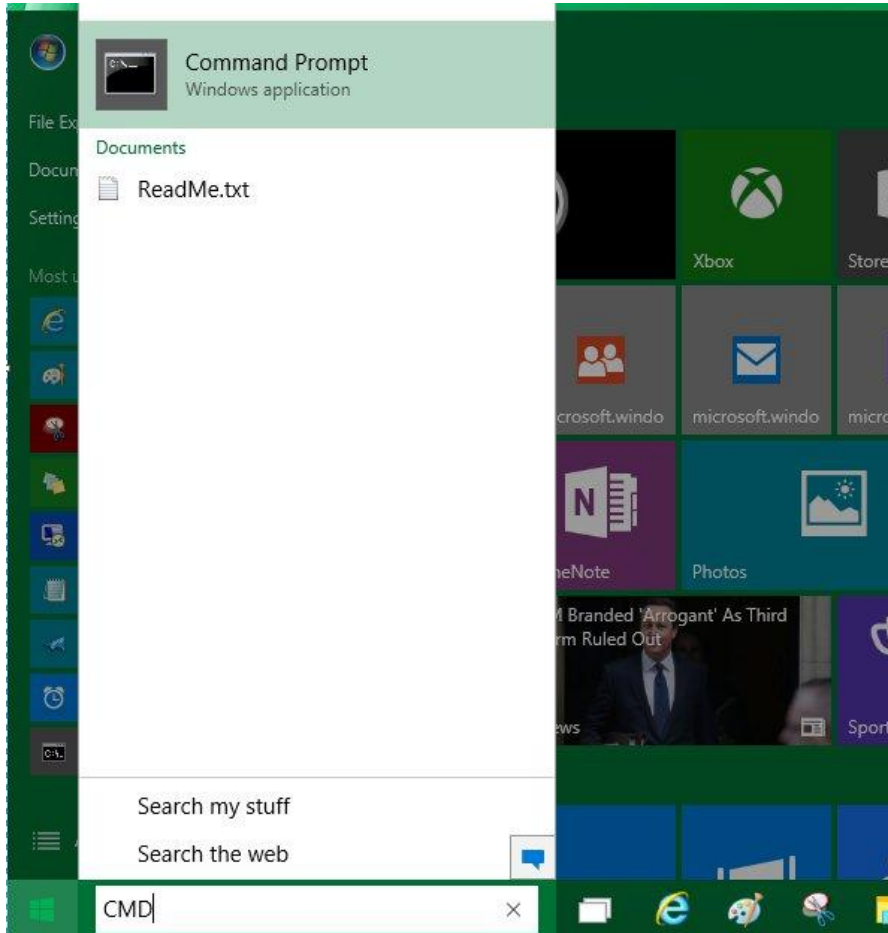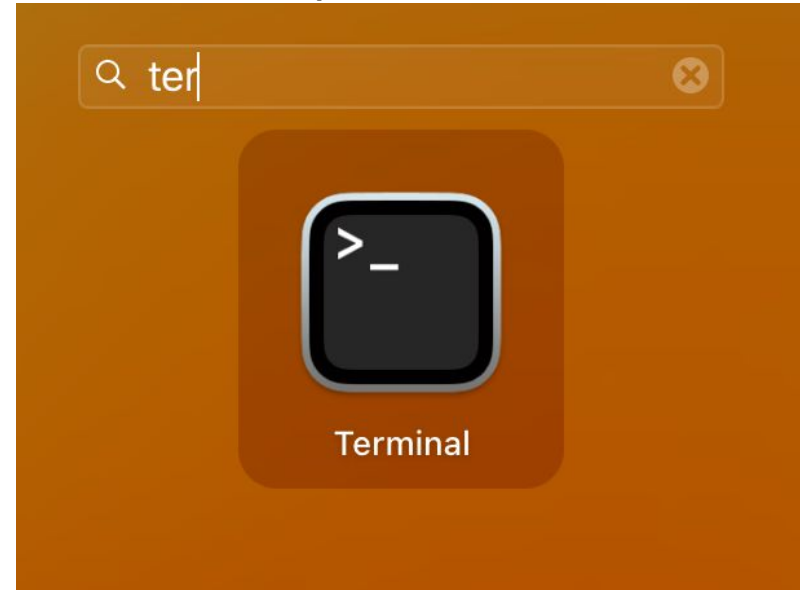Before there were GUIs, there was the terminal

Terminal vocab

- Terminal is a program that allows you to access all the files, folders, and programs on your computer without a **GUI**
- Notice the blinking cursor
- Text-based interaction!!!
- aka, typing **interface**
- Mouse may be used for highlighting
- Another name for the blinking cursor is the **command line**
- Programs that use can be used in the terminal are said to have a **command line interface**

```
Last login: Wed Jan 31 09:13:28 on ttys033
egraber ~ %
```

⊞ `cmd`　　　　　　　　　　⌘ space `terminal`

In order to use the terminal…

- know where your files are
  - a **path** specifies a location on your computer
  - separated by / (mac) \ (windows)
  - (mac) ~/Documents/courses/cmpsc101/course-materials/README.md
  - (windows) ~\Documents\courses\cmpsc101\course-materials\README.md
- you will need to call **command line interface (CLI)** programs from the terminal
  - **ls** (CLI to list files in bash - linux, macos)
  - **dir** (CLI to list files in powershell - windows)
  - **cd** (CLI to change directories)
  - **ssh-keygen** (CLI to generate an SSH key)
  - **pipx** (CLI to help install other things)
  - **pwd** (CLI to print working **directory**)

n.b. after most updates, it is necessary to open up a new terminal!

Strongly recommend opening a new tab so that old information can be referenced if needed

Scroll to the section for your OS

Chromebook
Windows
Mac/Linux

Instructions Chromebook

Note your **Operating System (OS)** for next installations

- RAM must be >=4GB
- Sometimes the Linux subsystem can be used, but best course of action is to borrow a computer - https://www.cis.allegheny.edu/resources/laptops/
- To attempt Linux activation, see these instructions: Set up Linux on your Chromebook
  - then follow linux instructions

Instructions Windows

Note your **Operating System (OS)** for next installations

Windows

- ⊞
- type `about`
- note if your system is
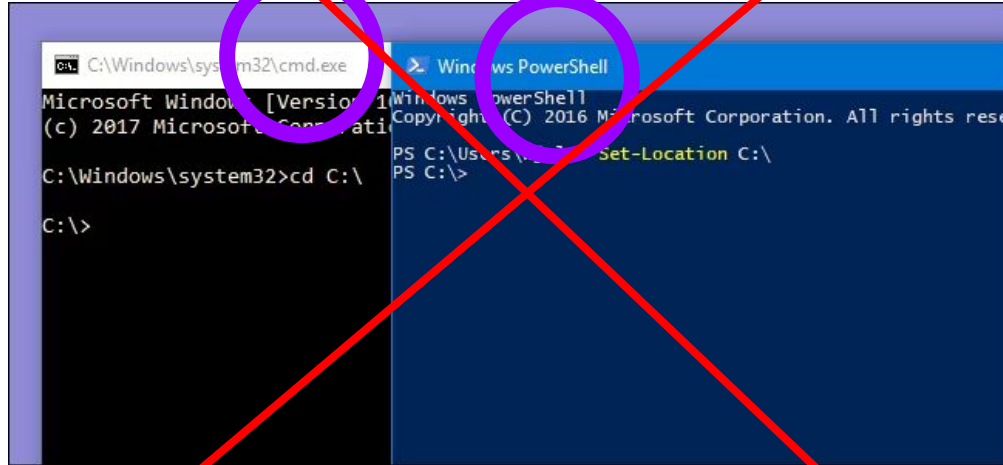 - windows 11?
  - windows 10?
  - 32 or 64 bit

Download Sublime Text

https://www.sublimetext.com/

If given the option, choose 32 or 64-bit installer to match your system

What **shell** are you using

cmd or Powershell

Get WSL2 or git bash instead. In the bash environment, use linux-like syntax (/forward/slash/yay/)

https://git-scm.com/download/win
Choose 32 or 64-bit to match your system

^^ bonus for doing this is that you also get **git**

Deal with Python

May need to reboot before using git bash program. Open the program by searching for it in the apps
⊞ `git bash`

Then, check if a good python version already installed. (P.S. Don't type the >>, that is just a symbol used to indicate the cursor, aka **command line prompt**)

>> `python --version`
or..
>> `py --version`

If python 3 is installed, version greater or equal to 3.8…should be good to go!

Otherwise, https://www.python.org/downloads/windows/, choose 32 or 64-bit **installer** to match your system. Highly recommend selecting Add python to **path** or **environment variables** in the installer!

^^bonus of this is that it comes with **pip**

If you need to uninstall the windows microsoft store version….check this:
https://learn.microsoft.com/en-us/hololens/holographic-store-apps

Get pipx

follow windows instructions, <mark>using pip</mark>: https://pipx.pypa.io/stable/installation/

- Install via pip (requires pip 19.0 or later)

```
# If you installed python using Microsoft Store, replace `py` with `python3` in t
py -m pip install --user pipx
```

It is possible (even most likely) the above finishes with a WARNING looking similar to this:

```
WARNING: The script pipx.exe is installed in `<USER folder>\AppData\Roaming\Python
```

If so, go to the mentioned folder, allowing you to run the pipx executable directly. Enter the following line (even if you did not get the warning):

```
.\pipx.exe ensurepath
```

alternate method

Windows (ref: https://python.land/virtual-environments/pipx)

Use pipx to get **poetry** and **gatorgrade**

Check if you have poetry → `>> poetry`

If there is nothing there, install it. Don't forget to open a new terminal

`>> pipx install poetry`

`>> pipx ensurepath`

reference - https://python-poetry.org/docs/#installing-with-pipx

➔ GatorGrade: Check if you have gatorgrade
➔ `gatorgrade --help`

If you don't have it:

◆ `pipx install gatorgrade`
◆ `pipx ensurepath`

alternate: pip install gatorgrade

Make an **SSH key**

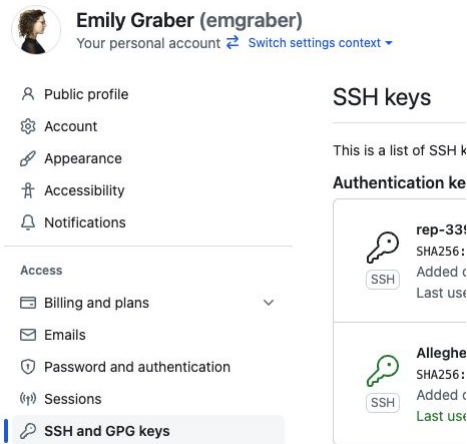First, check if you already have one for your CURRENT COMPUTER in GitHub

➜ https://github.com/settings/keys

If you don't have one

- in the terminal, type: `ssh-keygen -t ed25519`
- Hit enter to use default location in ~/.ssh
- Make a passphrase that you will remember!

Add public SSH key to GitHub

- first display the public key in the terminal
  - macos, type >> `cat ~/.ssh/id_ed25519.pub`
  - windows, easiest way seems to be to open notepad. drag and drop **public** key into notepad. public key located in `C:\Users\YOURNAME\.ssh\`
- copy the public key, and paste into github (settings>ssh keys>new)

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Instructions Mac / Linux

Note your **Operating System (OS)** for next installations

MacOS

- ⌘ space
- type `about`
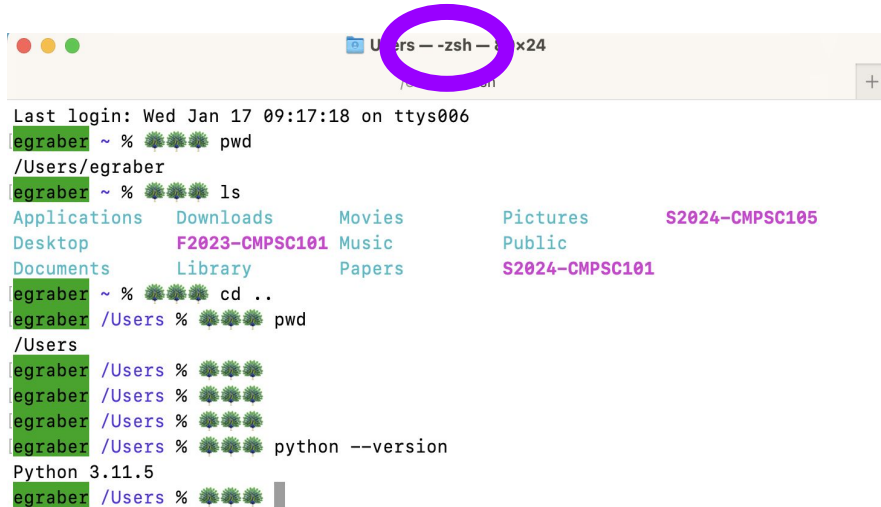- note the numbers at the bottom, like Ventura 13.5.1

Linux
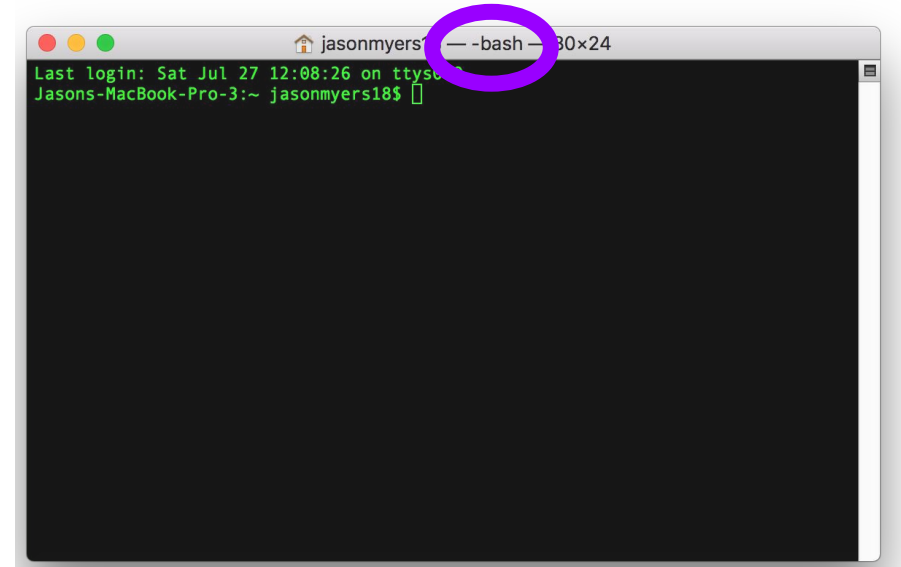
- terminal `lsb-release -a`

Download Sublime Text

https://www.sublimetext.com/

What **shell** are you using

Z shell

Bash

Deal with python

Check if good python version already installed. (P.S. Don't type the >>, that is just a symbol used to indicate the cursor, aka **command line prompt**)

```
>> python --version
>> python3 —version
```

If python 3 is installed, version greater or equal to 3.8…should be good to go!

Otherwise check for **homebrew** → There should be no Homebrew files in /usr/local/bin (for macOS Intel) or /opt/homebrew (for Apple Silicon).

Then actually get **homebrew** - https://brew.sh/
Follow all the instructions that appear in the terminal about adding brew to **$PATH** But be sure the shell profile matches your shell

with Z shell as example ——————————————————————>
.zprofile
reference, fyi - https://mac.install.guide/homebrew/3.html

.bash_profile is the other option

```
==> Next steps:
- Run these two commands in your terminal to add Homebrew to your `$PATH`:
    (echo; echo 'eval "$(/opt/homebrew/bin/brew shellenv)"') >> ~/.zprofile
    eval "$(/opt/homebrew/bin/brew shellenv)"
```

Then open a new terminal

```
>> brew install python
```

In **vim**, add new python alias to **shell configuration file**

Identify where your python installation and sublime text app are located

`>> which python` …or… `which python3`
is sublime in your Applications folder?

Sublime Text

Open the Z shell config file or bash config file in vim (P.S. the dot is important, it is a hidden file)(P.S. Don't type the >>, that is just a symbol used to indicate the cursor, aka **command line prompt**)

`>> vim  ~/.zshrc`
or
`>> vim ~/.bashrc`

type `i`

arrow key the cursor all the way to the end and add in two lines for python and subl, using the path in <mark>YOUR</mark> computer. The picture on the right is in MY computer

save by typing `[esc]:wq`
          ^^^ That's the escape key, don't type any brackets

Please make sure that when you type `python --version` in the terminal, you have python 3.8 or higher


```
egraber — vim ~/.zshrc — 80×24
~ — vim ~/.zshrc

PROMPT='%K{green}%n%k %F{blue}%~%f %% 🌳🌳🌳 '
export CLICOLOR=1
export LSCOLORS=gxFxCxDxBxegedabagaced

# Created by `pipx` on 2023-09-01 04:15:55
export PATH="$PATH:/Users/egraber/.local/bin"
alias python=/opt/homebrew/bin/python3
alias subl="/Applications/Sublime\ Text.app/Contents/SharedSupport/bin/subl"
~
~
~
~
~
~
~
~
~
~
~
~
~
~
"~/.zshrc" 8L, 316B
```

Install Git

First, check for **git**

```
>> git --version
```

If nothing is there, use brew to install **git** in the terminal. Remember to open a new terminal tab. (P.S. Don't type the >>, that is just a symbol used to indicate the cursor, aka **command line prompt**)

```
>> brew install git
```

reference for more help - https://git-scm.com/download/mac

Get pipx using brew

First check for pipx

```
>> pipx
```

If nothing is there, install it. Don't forget to open a new terminal first, and don't forget the ensurepath command shown in the instructions!

https://pipx.pypa.io/stable/installation/

Use pipx to get **poetry** and **gatorgrade**

Check if you have poetry → `>> poetry`

If there is nothing there, install it. Don't forget to open a new terminal

`>> pipx install poetry`

`>> pipx ensurepath`

reference - https://python-poetry.org/docs/#installing-with-pipx

➔   GatorGrade: Check if you have gatorgrade
➔   `gatorgrade --help`

If you don't have it:

◆   `pipx install gatorgrade`
◆   `pipx ensurepath`

alternate: pip install gatorgrade

Make an **SSH key**

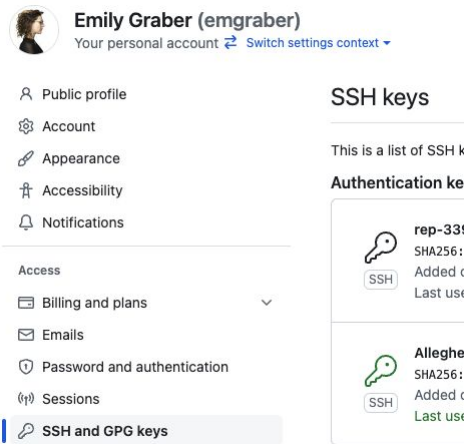First, check if you already have one for your CURRENT COMPUTER in GitHub

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If you don't have one

- in the terminal, type: `ssh-keygen -t ed25519`
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Add public SSH key to GitHub

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  - windows, easiest way seems to be to open notepad. drag and drop **public** key into notepad. public key located in `C:\Users\YOURNAME\.ssh\`
- copy the public key, and paste into github (settings>ssh keys>new)

Emily Graber (emgraber)
Your personal account ⇄ Switch settings context ▾

- 👤 Public profile
- ⚙ Account
- 🖌 Appearance
- ⚖ Accessibility
- 🔔 Notifications

Access

- ▭ Billing and plans ∨
- ✉ Emails
- 🛡 Password and authentication
- ⟨⟩ Sessions
- 🔑 SSH and GPG keys

SSH keys

This is a list of SSH k

Authentication ke

rep-33!
SHA256:
Added (
Last use

Alleghe
SHA256:
Added (
Last use

Test everything

Try this, one line at a time

```
>> poetry --version
>> python --version
>> gatorgrade --help
>> git --version
>> subl --version
>> cd ~/Documents
>> mkdir CMPSC101-F24
>> cd COMPSC101-F24
>> git clone git@github.com:allegheny-college-cmpsc-101-fall-2024/course-materials.git
>> cd course-materials
>> subl .
```

Bonus

Pro Tips - Try them

In the Terminal
     Tab completion
     arrow up/down
     ctrl c
     >> pwd
     >> cd ..
     >> ls
Sublime Text and most text editors including google docs
     cmd arrow left/right
     cmd delete
     opt delete
     cmd z
     cmd shift z
     cmd f
     cmd /

windows version
ctrl arrow left/right
ctrl delete
opt delete
ctrl z
ctrl y
ctrl f
ctrl /

Markdown tutorial

Formatting matters for presentation!

https://www.markdownguide.org/basic-syntax/

Overview

Headings

Paragraphs

Line Breaks

Emphasis

Blockquotes

Lists

Code

Horizontal Rules

Links

Images

Escaping Characters