

UW CSE 160 Section 1

March 29, 2018

Plan for Today

- Introductions
- Does everyone have Canopy installed and running?
- Navigating around the Command Line
- Running python programs from the command line
- For loops & range review
- Practice Problems!

Icebreakers

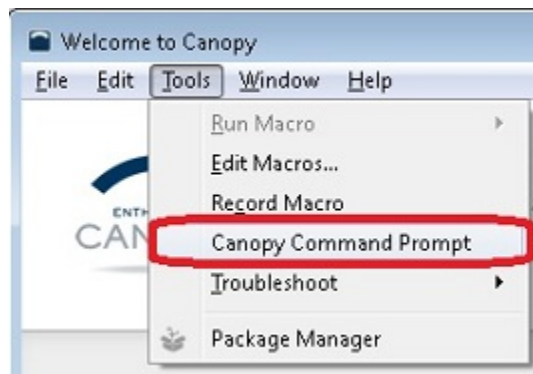
- Name
- Year
- Major
- Lecture topic?

**Does everyone have python
installed and working?**

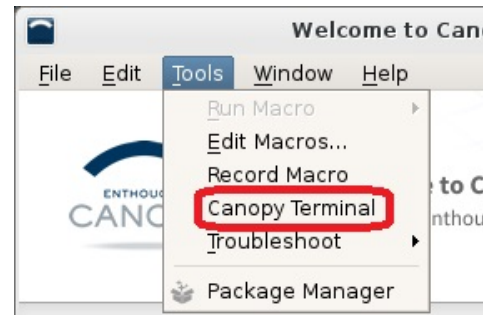
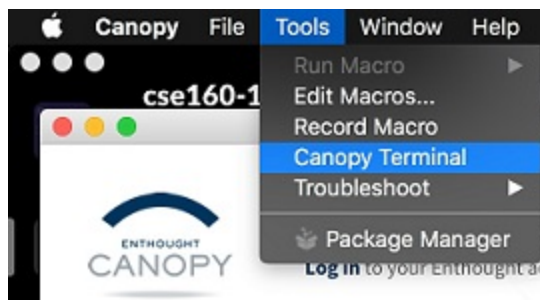
Raise your hand if not, we'll help you get set up

Use the Canopy Command Line

- **In Windows:** Canopy Command Prompt



- **In Mac/Linux:** Canopy Terminal



Command Line Intro

- Command Prompt in Windows (cmd)
- Terminal in Mac/Linux

Objectives

- Navigate file system
- Run Python (interactive and programs)

Command Line Basics

- Show current directory/folder

Unix, linux, osx	Windows
<code>pwd</code>	<code>echo %cd%</code>

- List contents in the current directory/folder

Unix, linux, osx	Windows
<code>ls</code>	<code>dir</code>

- Directory separator

Unix, linux, osx	Windows
<code>/</code>	<code>\</code>

Basics continued

- Change directory

Unix, linux, osx	Windows
<code>cd</code>	<code>cd</code>

- Pro tip: Use “tab” key to loop through path!

- Make directory

Unix, linux, osx	Windows
<code>mkdir</code>	<code>md</code>

More info here:

<https://courses.cs.washington.edu/courses/cse160/18sp/computing/shell-usage.html>

Mac/Linux

```

cse160 — bash — 53x29
Sonjas-MacBook-Pro:~ sonjakhans$ ls
Applications      Downloads          Music
Desktop           Library           Pictures
Documents         Movies            Public
Sonjas-MacBook-Pro:~ sonjakhans$ cd Do
Documents/ Downloads/
Sonjas-MacBook-Pro:~ sonjakhans$ cd Documents/cse160
Sonjas-MacBook-Pro:cse160 sonjakhans$ ls
hw                sections
Sonjas-MacBook-Pro:cse160 sonjakhans$ pwd
/Users/sonjakhans/Documents/cse160
Sonjas-MacBook-Pro:cse160 sonjakhans$ mkdir test
Sonjas-MacBook-Pro:cse160 sonjakhans$ ls
hw                sections          test
Sonjas-MacBook-Pro:cse160 sonjakhans$ █
```

Use ls to list all files/folders in current directory

Hit the “tab” key to list all files/folders starting with what you already typed

Use cd to change the directory

pwd shows the path to the current directory

mkdir creates a new directory (folder) in the current directory

Windows

```
Administrator: Command Prompt
C:\>dir
Volume in drive C has no label.
Volume Serial Number is A433-661C

Directory of C:\

2013-05-17  09:31 PM          1,024 .rnd
2014-02-23  06:43 PM          <DIR>   Android
2015-03-20  06:28 PM             61 COLLECTOR.txt
2013-09-17  03:25 PM          <DIR>   Cygwin
2012-09-19  05:28 PM          200 dns.cmd
2013-01-25  01:41 PM             0 end
2014-01-10  03:51 PM          932 ndsvc.log
2009-07-13  08:20 PM          <DIR>   PerfLogs
2012-09-18  02:13 PM          <DIR>   Perl64
2014-09-17  04:29 PM          <DIR>   Program Files
2015-03-07  03:48 PM          <DIR>   Program Files (x86)
2014-03-02  07:26 PM          <DIR>   Python27
2013-05-02  10:43 AM          <DIR>   Python33
2013-05-27  10:48 PM          <DIR>   Samsung Galaxy S3 Toolkit
2012-09-24  01:21 AM          850 sophosrestore.cmd
2015-01-07  11:33 AM          <DIR>   temp
2012-07-02  03:24 PM          1,161 uptodate.cmd
2015-03-23  10:21 AM          <DIR>   Users
2015-03-09  04:58 PM          <DIR>   Windows
           7 File(s)          4,228 bytes
          12 Dir(s)  752,650,227,712 bytes free

C:\>cd Users\tperrier
C:\Users\tperrier>dir
Volume in drive C has no label.
Volume Serial Number is A433-661C

Directory of C:\Users\tperrier
```

Use dir to list all files/folders in current directory

Use cd to change the directory

\ (backslash) separates directories

Python with command line

- Starting the Python interpreter (REPL):
 - python
 - How to exit the interpreter: `exit()` `ctr-D`
- Running a python program:
 - `python myprogram.py`
 - `python myprogram.py argument1 argument2`
- The operating system command shell/prompt is *not* the same as the Python interpreter

Python Tips: Be Careful!

- Don't forget the colon
- Indentation matters!

Loop Basics

- Use loops to reduce code repetition!
- For loop:
 for `iterating_var` in `sequence`:
 `statements(s)`
- Example:
 for `x` in `[0, 1, 2, 3, 4, 5]`:
 `print x * 2`

Range Basics

- The built-in `range()` function can be used to quickly create sequential lists.

`range(stop)`

`range(start, stop)`

`range(start, stop, step)`

- `range(10)`
 - `[0, 1, 2, 3, 4, 5, 6, 7, 8, 9]`
- `range(0, 10, 2)`
 - `[0, 2, 4, 6, 8]`
- `range(10, 0, -2)`
 - `[10, 8, 6, 4, 2]`

Now it's time to team up!

- Find partners! Group can be 2-4 people.
- Try to share as much as possible about what you are thinking with your teammates!

Exercise: Handout

Exercise: Sum consecutive numbers

Format:

1

2

...

10

sum: 55

Requirements

Use a for loop, range, and only one print statement outside the loop

Hints:

- Careful about the conversion between number and string
- Use `str(some number)`

Solution: Sum consecutive numbers

```
sum = 0
for i in range(1, 11):
    print i
    sum = sum + i
print "sum: " + str(sum)
```

Today's takeaway

- Installing and Using Python
- Command line environment
- Expressions, Variables and Print
- Loops and Range

**GO TO OFFICE HOURS IF YOU NEED MORE HELP
GETTING UP AND RUNNING OR WITH HW #1!**