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

<table>
<thead>
<tr>
<th>Unix, linux, osx</th>
<th>Windows</th>
</tr>
</thead>
<tbody>
<tr>
<td>pwd</td>
<td>echo %cd%</td>
</tr>
</tbody>
</table>

• List contents in the current directory/folder

<table>
<thead>
<tr>
<th>Unix, linux, osx</th>
<th>Windows</th>
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</thead>
<tbody>
<tr>
<td>ls</td>
<td>dir</td>
</tr>
</tbody>
</table>

• Directory separator

<table>
<thead>
<tr>
<th>Unix, linux, osx</th>
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<tbody>
<tr>
<td>/</td>
<td>\</td>
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</table>
Basics continued

• Change directory

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>cd</td>
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</table>

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

• Make directory

<table>
<thead>
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</thead>
<tbody>
<tr>
<td>mkdir</td>
<td>md</td>
</tr>
</tbody>
</table>

More info here:
Mac/Linux

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

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:

  ```python
  for iterating_var in sequence:
      statements(s)
  ```

• Example:

  ```python
  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

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

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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!