Python SSC Short Course

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Introduction

- This powerpoint is just an outline
  - Contains links to more resources and practice
- https://gist.github.com/wrightaprilm/6858471/
- Stop me if you are lost!

Python!

- A good trade-off between human and computer time
- Open source
- Well-documented
- Active user community

Goals

- Assign a variable
- Use a loop
- Understand when and why you might use certain data structures
- Read in a file

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Google intelligently when you are stuck!

To the pythons!

Open the terminal

Type python

Variables

- Python Variable Documentation
- SWC lesson on basics

Strings and integers

Exercise one

- Assign a few numbers to variables
- Do a mathematical operation with them
- Test if the result is less than ten
- Print the answer to the screen in a complete sentence

Answer One

```
a = 4
b = 5
c = a + b
d = c<10
print("The sum of %i and %i is %i. It is %s that this value is less than 10" %(a,b,c,d))
```

Control flow

How often do you want to do an operation to just one number?

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For Loop

Tutorial

SWC

Exercise 2

- Iterate over your list and print to screen if each letter is a vowel or not

(Hint: Two lists might be helpful!)

Possible solution

```
letters=['a','b','c','d','e','f','g']! vowels=
['a','e','i','o','u']

for letter in letters:
    if letter in vowels:
        print('%s is a vowel' %letter)!
    else:
        print('%s is not a vowel' %letter)!
```

But wait…

- More often than not, we want to utilize data that's stored in files
- In the file that you downloaded previously, you will find a .txt file

IO

- Open a file
- Read in
  - Iterables:
    - Lists
    - Dictionaries

Exercise

- Open the lizards file and read it in
- Choose a column and calculate its average
- Output the average, in a full sentence, to a file

Wrap-up

- You need to practice!
- CodeAcademy
- Software Carpentry
- Learning Python the Hard Way

Evaluations

http://tinyurl.com/SSC-shortcoursesurvey