Computer Village-St. Louis: Introduction into Python

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Summary: As the world of technology continues to progress, programmable computers are becoming more and more integrated into our everyday lives, otherwise known as the "internet of things". This courses intention is to introduce students into this phenomenon through the use of one of the simplest computer languages to learn, Python. Be prepared to learn the difference between both versions of Python and one of it's

Materials:

- A laptop with the following programs
  - Python 3.x
  - Scratch (downloading this program is optional)

Course Syllabus:

DATE	CLASSWORK	HOMEWORK
7/1	-Introductions -Introduction into Scratch, Python 2.x, and Python 3.x -Differences and similarities to other computer languages -Vocabulary: variables, data types, Boolean, strings, integers, float -Go over the "print()" and the proper string substitution syntax	-Using what you've learned in class, create a script that demonstrates how to properly substitute in a integer, a float, and a string variable → Use both of the ways that were taught in class
7/8	-Review last week's class -Vocabulary: functions, modules, import -Learn how to read and set up your own functions -Proper whitespace management -Commenting out your script -Create a simple reaction game	-Go to this page and become familiar with this built-in functions, as we will be using some of them for our next class - Create a simple function called "Test_(YourName)" that imports the time module and uses it in some sort of way
7/15	-Vocabulary: class, dot notation, concatenation -Basic math functions (+,-	-Create a script that does the following: → Uses the main three data

	,/,*,**,%) -Go over Boolean operators -Index and string numbering	types (a string, a Boolean, a number) → takes in a random string input → checks to see if the input is a string, and declares whether or not it is ➔ If not, turn the input into one → does a math calculation (of your choice) using the length of the string → prints out the length and the calculation and the reversed string
7/22	-Vocabulary: conditionals, functions, parameters, modules, import	Check out this page on modules in Python 3.x **OR** Create your own function! It should: → have at least one parameter → use conditionals to do a simple comparison using the parameter(s) → can use built-in functions and/or an imported modules functions
7/29	-Introduction into Scratch -Learning basic sections of it as well as exploring projects	-Open Scratch (either online or offline) and go through the "Getting Started with Scratch" tutorial and one other tutorial of your own choice for the next class
8/5	-Run this project in Scratch -Present your tutorial project	-Go through the community page and explore the scripts of several user-submitted projects
8/12	-Final lesson: • Using all of the tools, vocabulary, functions, and data types that we've learned, create a function that utilizes everything that you've learned	-Finish working on your code for as long as you need. And if you feel up to it, share it via email with the rest of the class

Additional Resources

- Here: if you are more interested in seeing the changes between Python 2.7.x and Python 3.x, I suggest checking out the webpage which not only list out some of the major changes and the problems it can cause, but gives comparative examples between both versions
- Here: Codecademy has a very decent Python tutorial that I would suggest following along with. My goal is to give an extended explanation on a lot of the concepts covered in it
    - Note: this teaches mainly Python 2.x syntax, so if you use this as a resource have the Python 3.x manual open too!