**PYTHON QUICK GUIDE: INPUT/OUTPUT, LOOPS**

Output text that is not stored in a variable:

There seems to be several ways to output to the screen.
I have yet to find a list of the pros and cons of each method.

**print (‘Hello there, how are you?’)
print (‘Hello there, how are you?’)
print ‘Hello there, how are you?’
print “Hello there, how are you?”**

Output text that is not stored in a variable, as well as variable values:

**print (‘Hello there’, name, ‘you are’, age, ‘years old’)**

Print out a blank line:

**print**

Receive input from the user:

**print ‘How old are you?’
age = int (raw\_input())
print ‘What is your name?’
name = str(raw\_input())
print ‘How much do you weigh?’
weight = float (raw\_input())**

Output a decimal number to a given number of decimal values:

**num = 34.6565332
num = round(num, 2)
print num**

Generating a random number:

**import random
import randint #this usually goes at the top of program
num = randint (0,9)**

Creating a for loop from 1 to 10:

**for i in range (1, 11, 2): #note: the loop will not continue when i = 11
 print i #indenting is SUPER IMPORTANT!**

Creating a while loop:

**count = 3**

**while (count <= 7):**

 **print ‘Hello’**

 **count = count + 1;**

 **#you can use *break* to exit a loop as well**

**PYTHON QUICK GUIDE: STRINGS**

**STRINGS: Note, the first letter in a string is located at spot 0**

**word = “elephant”**

**print len(word) #8**

**print word[1] #l**

**print word [2:5] #eph \*notice the end range is non-inclusive**

**print word [6:len(word)) #nt**

**print word.capitalize() #Elephant**

**print word.count(“e”) #2**

**print word.endswith (“ha”, 1, 6) #true
#determines if the string indicated by the
#subscripts ends with the substring indicated.
#there is also a function called .startswith**

**print word.find (“ph”, 0, 8) #3**

**print word.find (“e”) #0**

**print word.rfind (“e”) #2 \*finds last occurrence of the string**

**print word.find (“k”) #-1 \*if string isn’t found value is -1**

**print word.isdigit () #false**

**print word.isalpha() #true**

**print word.islower() #true**

**print word.isupper() #false**

**print word.isspace() #false \*\*true if string is all spaces**

**print word.lower() #elephant**

**print word.upper() #ELEPHANT**

**print word.lstrip() #removes any leading spaces**

**print word.rstrip() #removes any trailing spaces**

**print word.strip() #removes leading and trailing spaces**

**print max(word) #t**

**print min(word) #a**

**print word.replace (“e”, “x”) #xlxphant**

**print word.replace (“e”, “x”, 1) #xlephant**

**print word.swapcase() #ELEPHANT**

**if you have a string with several spaces then you can use word.split()**

**if you have a string with several newlines then you can use word.splitlines()**

**PYTHON QUICK GUIDE: SELECTION AND ARRAYS**

Selection:

**if (testscore >= 90):**

 **grade = 'A'**

|  |  |
| --- | --- |
| Not equal | t = |
| Less than | < |
| Less than or equal to | <= |
| Greater than | > |
| Greater than or equal to | >= |
| Equal to | == |
|  |  |
| AND | and |
| OR | or |
| NOT | not |

**elif (testscore >= 80)**

 **grade = 'B'**

 **elif (testscore >= 70):
 grade = 'C'**

 **elif (testscore >= 60):**

 **grade = 'D'**

 **else:
 grade = 'F'**

 **EX: if (roll == 7) and (roll == 11):**

 **STUFF GOES HERE**

Arrays in Python are actually called **LISTS**:

**names = [“Bill”, “Jenny”, “Eric”]
ages = [23, 44, 65]**

**print names[1] #Jenny notice that lists start at 0
names[1] = “Brenda” #This changes the name Jenny to Brenda**

**names.append(“Robert”) #adds Robert to spot 3 in the list
names.remove (“Bill”) #removes Bill from list, shifts remaining items by 1**

**print len(names) #prints number of items in list**

**print max(ages) #65
print min(ages) #23 min/max can be used for strings as well**

**print ages.count (44) #number of times 44 is in list**

**names.insert(2,”Sam”) #insert Sam to list in spot 2, shift ending items by 1**

**print names.pop() #remove list item that was inserted last**

**print names.index(“Brenda”) #1**

**names.sort() #sorts the list alpha or numerically**

**names.reverse() #reverses the order of list items**

**PYTHON QUICK GUIDE: I/O FILES, RESOURCES**

Create the datafile using notepad and save it as a .txt file
Ensure that the file is stored in the same folder as the python program.

**inFile = open (‘inputData.txt’, ‘r’) # the r indicates read**

**name1 = str(inFile.readline())
age1 = int (inFile.readline())**

**inFile.close()**

**outFile = open (‘outputData.txt’, ‘w’)**

**outFile.write(name1, age1)**

**outFile.close()**

**Great Resources…**

[**http://www.codecademy.com/tracks/python**](http://www.codecademy.com/tracks/python)

[**https://docs.python.org/2/tutorial/**](https://docs.python.org/2/tutorial/)

[**http://www.learnpython.org/**](http://www.learnpython.org/)

[**http://www.tutorialspoint.com/python/**](http://www.tutorialspoint.com/python/)