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'

elif (testscore >= 80)
        grade = 'B'

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

elif (testscore >= 60):
        grade = 'D'

else:
        grade = 'F'
```

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

```
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

https://docs.python.org/2/tutorial/

http://www.learnpython.org/

http://www.tutorialspoint.com/python/
