ET154 Computer Programming Problem Set/Self Test

1. Write the code to perform the following (a few lines at most): - Print Performing Mind Meld to the screen 10 times.

- Create a tuple called *unlikely pets*, initializing it with the strings: "slug", "smilodon", "honey badger" and "tape worm".

- Generate a random integer from 0 through 20.

- Initiate a loop that will cycle through the values 1200, 2400, 3300, 4700.

- Given a list called power that is filled with floating point values, determine the average of the largest value and the smallest value.

- Given the list above, print out the second, third and fourth values.

2. Write the output of the do nothing useful program, below.

	Output
# Skeezix Sneezes!	
x = 3	
y = 1	
$print("\n\tReady!\n")$	
for c in range(3):	
z = x	
while $z < 5$:	
z = z + y	
print(c, z, y)	
<pre>print("Set!")</pre>	
<pre>print("Go!")</pre>	

Answers follow.

- Print Performing Mind Meld to the screen 10 times. # Assuming we want each on their own line, this is quick print("Performing Mind Meld\n"*10) # This will also work for i in range(10): print("Performing Mind Meld") # as will this (least desirable) i=0 while i < 10: print("Performing Mind Meld") i+=1 - Create a tuple called unlikely pets, initializing it with the strings: "slug", "smilodon", "honey badger" and "tape worm". # () yields a tuple, [] yields a list unlikely pets=("slug", "smilodon", "honey badger", "tape worm") - Generate a random integer from 0 through 20. # Make sure you import random first r = random.randrange(20) # This works but its the long way home: r = int(20*random.random())- Initiate a loop that will cycle through the values 1200, 2400, 3300, 4700. for x in 1200,2400,3300,4700: # looped code goes here # If you need to use these values in another context you could # put them in a list and then access the list: y = [1200, 2400, 3300, 4700]for x in y: # looped code goes here

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- Given a list called power that is filled with floating point
values, determine the average of the largest value and the
smallest value.
# There are a few ways to determine the max and min. The most
# straightforward is to sort it. The min will be at the front
# and the max will be at the back end.
power.sort()
pmin=power[0]
pmax=power[len(power)-1] # a shortcut is pmax=power[-1]
pavg=(pmin+pmax)/2
# or you could put it altogether like so
power.sort()
pavg=(power[0]+power[-1])/2
# If we had a tuple, we couldn't use the member function
#.sort(). Instead, we'd make a sorted copy using the sorted()
# function as in powercopy=sorted(power) and use the copy.
# Sorting large sequences can be time consuming so an alternate
# method is to search the list for min and max values, like we
# did in the maximum power theorem lab exercise.
pmin=pmax=power[0] #initialize to first value in list
for p in power:
     if p < pmin:
          pmin=p
     elif p > pmax:
          pmax=p
pavg=(pmin+pmax)/2
- Given the list above, print out the second, third and fourth
values.
# Remember, Python starts counting at 0 not 1
print( power[1:4] )
# If you don't want to print them out as a sub-list but prefer to
# see them individually, loop through them
for i in range (1, 4):
     print( power[i] )
```

2. Write the output of the *do nothing useful* program, below.

```
-----Output-----
# Skeezix Sneezes!
                          x = 3
                          | Ready!
y = 1
                          print("\n\tReady!\n")
                         |0 4 1
                          |0 5 1
for c in range(3):
                          |Set!
                         |1 4 1
    z = x
    while z < 5:
                         |1 5 1
        z = z + y
                          |Set!
       z = z + y |Set!

print(c, z, y) |2 4 1

pt("Set!") |2 5 1
    print("Set!")
                         |2 5 1
print("Go!")
                          |Set!
                          |Go!
```