FASTA sniffer

import makes special variables and functions available

- The `sys` module describes your system.
  - `sys.version`
    What version of Python are you using?
  - `sys.argv`
    A list of script arguments
  - `sys.exit()`
    A function to call everything to a halt.

For Loops:
do this code *n* times

```python
# For loop through a list of items
Colors = ["red", "orange", "yellow", "green"]
for ThisColor in Colors:
    print(ThisColor + " " + str(len(ThisColor)))

# range returns a series of numbers
print("First ten")
for ThisNumber in range(10):
    print(ThisNumber)

# range returns numbers from x to y in steps of z
print("Counting by twos")
for ThisNumber in range(4, 20, 2):
    print(ThisNumber)
```

What is the highest number printed?

Lists appear in many places!

```
# A string lists characters
MyWord = "abacus"
for ThisLetter in MyWord:
    print(ThisLetter)



# Command line arguments
import sys
for arg in sys.argv:
    print(arg)
```

While Loops: do this code until *x* isn't true

```python
# while loops don't have fixed iteration count
import random
print("Random p-values below 0.05")
CountOfHits = 0
CountOfTries = 0
while (CountOfHits < 5):
    CountOfTries +=1
    ThisRandom = random.random()
    if ThisRandom < 0.05:
        CountOfHits +=1
        print(ThisRandom)
print("We generated " + str(CountOfTries))
```

random.random ranges from zero to one.