CHEATSHEET PYTHON 2: LOOPS

Function	Description	Example
range()	makes a list of a certain range of numbers	range(0,20) makes a list from 0 to 19, 20 numbers where the first is inclusive and the last is exclusive range(0,20,2) makes the same list but counts by 2
input()	asks the user for input, stores as variable	x=input("Enter a phrase: ") saves what user inputs as variable x

Module	Description	Example
random	random number generator	random.random() picks a value between 0 and 1 random.randint(0,10) randomly picks a value between 0 and 10
time	anything to do with timing	<pre>time.asctime(time.localtime(time.time())) prints current date and time</pre>

FOR is for iterating over values in a list, string, file, range, etc

```
for item in thing: Example: print 20 numbers (actually prints 0 to 19) do this command #return to for statement and #move to next item print i
```

IF is the basic decision making tool

IF ELSE is used for decision making in an either or context

```
if logical condition == True:
    do this command
else:
    do this command

do this command

else:
    do this command

for seq in seqs:
    if 'U' in seq:
        print '%s is RNA' %seq
else:
        print '%s is DNA' %seq
```

IF ELIF is useful when you have more than one condition to check before deciding

```
if logical condition == True:
    do this command
elif other logical condition == True:
    do this command
else:
    do this command
else:
    do this command
else:
    print '%s is RNA' %seq
elif 'T' in seq:
    print '%s is DNA' %seq
else:
    print '%s might be a protein' %seq
```

WHILE is useful for checking input types, and when your value in the conditional might change within the loop

COMPREHENSIONS are faster than for loops and good to use when you're sifting through a long list or range

```
list1=[] #make empty list list1 = [item for item in thing] for item in thing: numbers=range(1000) list1.append(item) l=[x**3 for x in numbers]
```

FOR LOOP IN BASH

```
for x in list; do command to variable x; done
for i in *.fasta; cat $i >> newseqs.fasta; done
```