More with Loops: While-loops
The other kind of loop is an *indefinite loop* or *while-loop*. This has format

```python
while <condition>:
    <body>
```

For example,

```python
x = 0
while x < 10:
    x = x+1
    print(x)
```

When a while-loop is executed, the body is evaluated over and over until the condition is **False**. If the condition never becomes False, the loop never terminates.
Here is a very common programming issue:
Enter data until some condition is met.
To make this simple, we will enter strings until we get the empty string:

done = False
while not done:
    myInput = input( "type something: " )
    if myInput == "":
        done = True
    else:
        print( "Hmmm. How interesting." )
We can determine if number $n$ is prime by trying to divide all of the numbers from 2 up to (but not including) $n$ into it. If any of them divide in evenly then $n$ is not prime; if none of them do it is prime. Here is an easy loop for this:

```python
n = eval(input("Enter n: "))
isPrime = True
for i in range(2,n):
    if n%i == 0:
        isPrime = False
if isPrime:
    print( "%d is prime." % n)
else:
    print( "%d is not prime." %n )
```
Now use this to write a program that has a variable Max and prints all of the primes from 2 to Max.
Note that the for-loop makes this program do a lot of useless checking. For example if \( n \) is 100 it divides 99 numbers into \( n \), although it finds out that 2 divides evenly into \( n \). We can prevent this with a while loop:

```python
isPrime = True
i = 2
while i < n and isPrime:
    if n%i == 0:
        isPrime = False
    i = i+1
```