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Lesson 7a: While

The While loop looks like this...

```
while (something is true):
```

```
    do something
```

```
    do something else
```

Example:

```
n=10
```

```
while (n>0):
```

```
    print(n)
```

```
    n=n-1
```

```
print("Blastoff!")
```

ERROR in video: When talking about the factorial function I mistakenly called it exponentiation the first time. I later correctly gave the right name. Sorry about that.

Lesson 7b: Try/Except

Here is an example try/except block.

try:

```
num=int(input("Enter an integer"))
```

except:

```
print("You did not enter an integer.")
```

That is the standard try/except block. Later we will learn how to do different types of except errors. But basically you start with try: before you do something that has ANY possibility of failing. Then if it fails it will go to the except block. This will prevent any ugly errors from the computer.

Homework for Lesson 7

Do the following using Python 3

- 1) Use the Try/Except block and while to ask for an integer and a float and make sure you got both. If not then ask again.
- 2) Use the while block to enter an age between 10 and 100 (inclusive).
- 3) Now repeat the above but do them inside functions.
- 4) Using only North, South, West and East. Ask user to enter coordinates for current location. Example: (-5, 3) (Think Math – Coordinate system). Then ask user for destination. Example: (4, -8). Then using function(s) and while loop(s) – go one position at a time (ie – no diagonal travel) until you get to destination. Make sure you print out something like “Move #2, I travelled north – now at position (-3,3).” When you reach destination print out “I got to the destination in only # moves”.
- 5) Ask for number of students. Ask for number of grades per student. Then ask for names of students, their grades then print out average, letter grade (ie 70-79 is a C), then overall class average.

Example: 2 students

3 grades

John

50 60 70

John – average: 60 – D

Kevin

40 70 100

Kevin – average 70 – C

Overall Class Average – 65 - D

- 6) Print the following using a while loop and number entered from user....

*

**

*** (if user entered 3)

- 7) Print the following using a while loop and number entered from user...

* *

(if user entered 3)

* *

* *

(if user entered 4)