

- how to get range in python list ([0 : length -1]) starts as inclusive up to exclusive
- how to multiply list (* list)
- insert and delete in lists
- construct lists

```
l = [1, 3, 'oklahoma', 3]
print(l[1:3])
# prints [3, 'oklahoma']

(l*3)[2:-3]
# ['oklahoma', 3, 1, 3, 'oklahoma', 3, 1]

[i for i in range(100)]
# creates a list of elements 0 - 99

[c for c in 'oklahoma' * 3]
# creates a list. Each element is a character in 'oklahoma' and is added 3 times
# ['o', 'k', etc... 'o', 'k', etc]

print([[i for i in range(j)] for j in range(10)])
# prints [[], [0], [0, 1], [0, 1, 2], [0, 1, 2, 3], [0, 1, 2, 3, 4], [0, 1, 2, 3, 4, 5], [0, 1, 2, 3, 4, 5, 6], [0, 1, 2, 3, 4, 5, 6, 7], [0, 1, 2, 3, 4, 5, 6, 7, 8]]

l = ["ohio", 8, "dallas", 0, 0, 0]
while l[-1] == 0:
    del l[-1]

print(l)
# prints ['ohio', 8, 'dallas']
```

Unbound local error

```
x = 3
def f():
    # print(x) taking this out of comment will generate unboundlocalerror (cannot
    access local variable 'x' where it is not associated with a value)
    x = 'houston'
    print(x)
```

```
f()  
# prints houston
```

Tuples

```
# -----  
x = (1, 3, "littlerock")  
print (x)  
  
# cannot add anything to a 'tuple' because tuples are immutable  
# just prints (1, 3, 'littlerock')
```