FOR LOOPS (Lists, Tuples and Dictionaries)

- **for** loops iterate over elements from a sequence (list, tuple or dictionary).
- Outputs all the elements from the sequence.

In [82]:

```
for greeting in range(2):
    print("Hello World!")
```

```
Hello World!
Hello World!
```

In [83]:

```
cats = ["tiger", "lion", "jaguar", "leopard"]
for cat in cats:
    print(cat)
```

```
tiger
lion
jaguar
leopard
```

In [85]:

```
for num in range(4):
    print(num, num + 30, num*num)
```

```
0 30 0
1 31 1
2 32 4
3 33 9
```

In [86]:

```
nest1 = [[10, 20, 30], [3.5, 4.5, 5.5],
         ["sword", "hammer", "shield"]]

for i in range(3):
    print(nest1[i])
```

```
[10, 20, 30]
[3.5, 4.5, 5.5]
['sword', 'hammer', 'shield']
```

In [91]:

```
weapons = []
for i in range(3):
    s = nest1[2][i].capitalize() + ": Power Level = " + str(nest1[0][i] + ne
st1[1][i])
    weapons.append(s)
weapons[2]
```

Out[91]:

Out[91]:

```
'Shield: Power Level = 35.5'
```

In [93]:

```
for i in range(1, 8):
    print("{} * {} = {}".format(i, i, (i*i)))
```

```
1 * 1 = 1
2 * 2 = 4
3 * 3 = 9
4 * 4 = 16
5 * 5 = 25
6 * 6 = 36
7 * 7 = 49
```

In [97]:

```
for k in range(1, 8):
    print("%f * %f = %f" % (k, k, (k*k)))
```

```
1.000000 * 1.000000 = 1.000000
2.000000 * 2.000000 = 4.000000
3.000000 * 3.000000 = 9.000000
4.000000 * 4.000000 = 16.000000
5.000000 * 5.000000 = 25.000000
6.000000 * 6.000000 = 36.000000
7.000000 * 7.000000 = 49.000000
```

In [104]:

```
tup1 = ((10, 20, 30), ("a", "b", "c"), (200, 400, 800))
# TUPLE UNPACKING!
for i in range(3):
    for x, y, z in tup1:
        print(x, y, z)
```

```
10 20 30
a b c
200 400 800
10 20 30
a b c
200 400 800
10 20 30
a b c
200 400 800
```

In [107]:

```
cakes = ["chocolate", "lemon", "carrot", "vanilla"]

d1 = {"k1": tuple(cakes), "k2": [10, 20, 30, 40]}
d1["k2"]
```

Out[107]:

```
[10, 20, 30, 40]
```

In [109]:

```
for d in d1["k2"]:
    print(d)
```

```
10
20
30
40
```

In [110]:

```
for x in d1:
    for i in range(4):
        print(x, ":", d1[x][i])
```

```
k1 : chocolate
k1 : lemon
k1 : carrot
k1 : vanilla
k2 : 10
k2 : 20
k2 : 30
k2 : 40
```

In [112]:

```
cats
endangered = ["series", "critical",
              "very critical", "stable"]

for c in range(4):
    print(cats[c].capitalize(), "\n Level: \n", endangered[c].upper())
```

```
Tiger
 Level:
 SERIES
Lion
 Level:
 CRITICAL
Jaguar
 Level:
 VERY CRITICAL
Leopard
 Level:
 STABLE
```