# Python Looping HW Assignment

## Part 1: for loops with lists and range()

### 1. Lists

```
In [4]:   #a:
          numslist = [2, 4, 6, 8]
          for num in numslist:
              print(num * 2)
```

```
4
8
12
16
```

```
In [1]:   #b
          strings = ["apple", "pear", "kiwi", "grape"]
          n = len(strings)
          for i in range(n):
              print(strings[-1-i])
```

```
grape
kiwi
pear
apple
```

### 2. Range()

```
In [36]:  #a:
          for i in range(0,10):
              print(i)
```

```
0
1
2
3
4
5
6
7
8
9
```

```
In [38]:  #b:
          for i in range(5,16):
              print(i)
```

```
5
6
7
8
9
10
11
12
13
14
15
```

In [44]:
```python
#c:
for i in range(2,21,2):
    print(i)
```

```
2
4
6
8
10
12
14
16
18
20
```

## Part 2: Dictionaries and Loops

In [55]:
```python
#a
dict = {"Alex":"Blue", "Jordan":"Green", "Taylor":"Red"}
for name in dict:
    print(name, "'s favorite color is", dict[name],".")
```

```
Alex 's favorite color is Blue .
Jordan 's favorite color is Green .
Taylor 's favorite color is Red .
```

In [60]:
```python
#b
fruits={"apple": 5, "banana": 3, "cherry": 10}
for fruit in fruits:
    quantity = fruits[fruit]*2
    print(fruit, "now has", quantity, ".")
```

```
apple now has 10 .
banana now has 6 .
cherry now has 20 .
```

## Part 3: Storing Results of a For Loop in a New List and List Comprehensions

### 1. not using list comprehension

```
#a
empty = []
lst = [1, 3, 5, 7]
for i in lst:
    empty.append(i * 2)
print(empty)
```

```
[2, 6, 10, 14]
```

```
#b
fruitss = ["Apple", "Banana", "Cherry", "Date"]
emp = []
for fruit in fruitss:
    emp.append(fruit[0])
print(emp)
```

```
['A', 'B', 'C', 'D']
```

## 2. using list comprehension

```
#c
new=[1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
sqrt = [i**(1/2) for i in new]
print(sqrt)
```

```
[1.0, 1.4142135623730951, 1.7320508075688772, 2.0, 2.23606797749979, 2.4494897
42783178, 2.6457513110645907, 2.8284271247461903, 3.0, 3.1622776601683795]
```

```
#d
yum = ["apple", "pear", "kiwi", "grape"]
last = [i[-1] for i in yum]
print(last)
```

```
['e', 'r', 'i', 'e']
```

## Part 4: nested loops

```
#a
deep_list = [[[1, 2, 3, 4], [5, 6, 7, 8]],
             [[9, 10, 11, 12], [13, 14, 15, 16]],
             [[17, 18, 19, 20], [21, 22, 23, 42]]]
flat = []
for i in range(3) :
    for j in range(2) :
        for k in range(4):
            number = deep_list[i][j][k]
            flat.append(number)

print(flat)
```

```
[1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 2
2, 23, 42]
```

```
#b
myStrLst = ["able", "was", "I", "ere", "I", "saw", "elba"]
new= []
```

```
for j in myStrLst:
    new.append((j[::-1]))
print(new[::-1])
```

['able', 'was', 'I', 'ere', 'I', 'saw', 'elba']