filter, map, reduce

In [1]:
```
# write a function to generate random number of selected range and length
def rand_num(a, b,length):
    import random
    rand = []
    if a > b:
        return print('{} > {} please select number a < b'.format(a,b))
    for i in range(length):
        num = random.randint(a,b)
        rand.append(num)
    return rand
```

Generate 50 random number in range of 1 - 100 using your own function

- in that extract even numbers in the list of random number
- in that extract odd numbers in the list of random number

In [2]:
```
rand = rand_num(1,100,50)
print(rand)
```

```
[84, 19, 3, 60, 37, 23, 85, 32, 2, 84, 24, 16, 67, 62, 63, 35, 61, 58, 6, 81, 9
8, 92, 36, 28, 80, 87, 53, 56, 29, 48, 9, 78, 41, 92, 11, 50, 74, 8, 47, 22, 4
6, 59, 79, 77, 62, 71, 24, 81, 100, 92]
```

In [3]:
```
even = []
odd = []
for i in rand:
    if i %2 == 0:
        even.append(i)
    else:
        odd.append(i)

print(even)
print('\n\n')
print(odd)
```

```
[98, 42, 20, 32, 52, 34, 96, 32, 62, 22, 18, 40, 94, 58, 92, 70, 64, 28, 18, 9
6, 32, 68, 42, 84]



[91, 35, 37, 21, 83, 1, 59, 87, 19, 47, 51, 67, 9, 63, 97, 33, 93, 43, 93, 27,
55, 73, 7, 71, 1, 9]
```

filter

In [4]:
```
def iseven(x):
    return x %2 == 0

iseven_lam = lambda x: x%2 == 0
```

In [8]:
```
even = list(filter(iseven,rand))
print(even)
```

```
[98, 42, 20, 32, 52, 34, 96, 32, 62, 22, 18, 40, 94, 58, 92, 70, 64, 28, 18, 9
6, 32, 68, 42, 84]
```

write a program to filter the values divible by 5 in rand numbers

In [ ]:
```

```

map

In [4]:
```
rand = rand_num(1,100,10)
print(rand)
```

```
[63, 35, 62, 96, 56, 26, 50, 44, 75, 4]
```

In [6]:
```
x = []
for i in rand:
    x.append(i+3)

print(x)
```

```
[66, 38, 65, 99, 59, 29, 53, 47, 78, 7]
```

In [8]:
```
def plus3(num):
    return num+ 3
```

In [9]:
```
list(map(plus3, rand))
```

Out[9]:
```
[66, 38, 65, 99, 59, 29, 53, 47, 78, 7]
```

write a program to generate 10 random number in the range 0 - 50 asume that they centigrade .. convert them in farhnheit

In [10]:
```
C = rand_num(0,50,10)
farhenheit = list(map(lambda x : (9/5)*x + 32,C))
print(farhenheit)
```

```
[111.2, 32.0, 48.2, 113.0, 114.8, 109.4, 107.60000000000001, 87.80000000000001,
42.8, 66.2]
```

reduce

In [11]:
```
C
```

Out[11]:
```
[44, 0, 9, 45, 46, 43, 42, 31, 6, 19]
```

In [12]:
```
add = lambda x,y :  x+y
```

In [13]:
```
from functools import reduce
```

In [14]:
```
reduce(add,C)
```

Out[14]:
```
285
```

In [19]:
```
a = 0
for i in C:
    a = add(a,i)
print(a)
```

```
285
```

In [17]:
```
C
```

Out[17]:
```
[44, 0, 9, 45, 46, 43, 42, 31, 6, 19]
```

- Write a program to length of given list

In [20]:
```
text = """
Over six years ago, in December 1989, I was looking for a "hobby" programming pro
"""
```

- write a program to filter words starting with vowels characters

> a , e, i , o ,u

- Write a program to generate 50 random number in the range of 0 - 20 assume that they are centigrade values,

> - In that extract odd temperature and convert them in fahrenheit.
> - Also calculate multiplication of fahrenheit values

In [ ]:
```

```