

Day_10_Map_Reduce_&Filter_Functions(DATA_MINDS)

September 13, 2023

MAP - THE WORK OF MAPPER IS ONLY TO GIVE THE OUTPUT ON BEHALF OF OUR FUNCTION AND ITERATOR.

IN VERY SIMPLE TERMS IT MAP THE ENTIRE DATA.

```
[1]: l=[2,5,6,4,8,7]
```

```
[5]: def test(l):  
      v=[]  
      for i in l:  
          v.append(i**2)  
      return v
```

```
[6]: test(l)
```

```
[6]: [4, 25, 36, 16, 64, 49]
```

```
[7]: def sq(x):  
      return x**2
```

```
[10]: list(map(sq,l))
```

```
[10]: [4, 25, 36, 16, 64, 49]
```

```
[15]: list(map(lambda x:x**2,l))
```

```
[15]: [4, 25, 36, 16, 64, 49]
```

```
[16]: list(map(lambda x:x**2,l))
```

```
[16]: [4, 25, 36, 16, 64, 49]
```

```
[22]: s={"Virat":22,"Class":"Python","Pc":"HP"}
```

```
[23]: s
```

```
[23]: {'Virat': 22, 'Class': 'Python', 'Pc': 'HP'}
```

```
[24]: dict.keys
```

```
[24]: <method 'keys' of 'dict' objects>
```

```
[30]: s.keys()
```

```
[30]: dict_keys(['Virat', 'Class', 'Pc'])
```

```
[31]: s.values()
```

```
[31]: dict_values([22, 'Python', 'HP'])
```

```
[33]: a=[1,2,5,6,4,5]
      b=[9,25,7,0,6,8]

      list(map(lambda x,y:x+y,a,b))
```

```
[33]: [10, 27, 12, 6, 10, 13]
```

```
[34]: #THIS IS HOW WE ADD LIST WITH THE HELP OF LAMBDA FUNCTION

      a=[1,2,3,6,5,4,7,8,9]
      b=[5,1,9,7,3,0,6,4,1]
      c=[22,44,66,99,44,33,22,77,88]
      d=[10,20,50,40,30,60,80,70,90]
```

```
[40]: list(map(lambda w,x,y,z:w+x+y+z,a,b,c,d))
```

```
[40]: [38, 111, 106, 119, 137, 108, 126, 104, 127]
```

```
[49]: #WE ALSO DONE SAME THING WITH THE HELP OF MAKING ADD() FUNCTION

      def add(a,b,c,d):
          return a+b+c+d
```

```
[50]: list(map(add,a,b,c,d))
```

```
[50]: [38, 111, 106, 119, 137, 108, 126, 104, 127]
```

```
[51]: name="Virat Tiwari"
```

```
[52]: name
```

```
[52]: 'Virat Tiwari'
```

```
[53]: name.upper()
```

```
[53]: 'VIRAT TIWARI'
```

```
[55]: name.lower()
```

```
[55]: 'virat tiwari'
```

```
[56]: name.replace("Virat","Samrat")
```

```
[56]: 'Samrat Tiwari'
```

```
[58]: name="Virat tiwari"  
list(map(lambda name:name.upper(),name))
```

```
[58]: ['V', 'I', 'R', 'A', 'T', ' ', 'T', 'I', 'W', 'A', 'R', 'I']
```

REDUCE - IT REDUCE THE ENTIRE LIST AND GIVE THE SINGLE ENTITY

```
[60]: #This is how we import thr reduce() function  
  
from functools import reduce
```

```
[69]: a=[2,5,6,4,9]
```

```
[70]: reduce(lambda x,y:x+y,a)
```

```
[70]: 26
```

```
[71]: reduce(lambda x,y : x*y,a)
```

```
[71]: 2160
```

```
[72]: reduce(lambda x,y:x if x>y else y,a)
```

```
[72]: 9
```

```
[74]: reduce(lambda x,y:x if x<y else y,a)
```

```
[74]: 2
```

FILTER -

```
[75]: l=[2,5,4,9,0,4,6,3,7,9,4,5,100,9]
```

```
[81]: list(filter(lambda x:x%2!=0,l))
```

```
[81]: [5, 9, 3, 7, 9, 5, 1, 9]
```

```
[82]: a=[2,5,-8,12,-96,-13,4,6,5,-258,-36]
```

```
[83]: list(filter(lambda x:x<0,a))
```

```
[83]: [-8, -96, -13, -258, -36]
```

```
[84]: b=["Virat","Yash","Rohit","Happy"]
```

```
[85]: b
```

```
[85]: ['Virat', 'Yash', 'Rohit', 'Happy']
```

```
[90]: list(filter(lambda x:len(x)<6,b))
```

```
[90]: ['Virat', 'Yash', 'Rohit', 'Happy']
```

```
[91]: list(filter(lambda x:len(x)>6,b))
```

```
[91]: []
```