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LAB SHEET 10: implementation of Map, Filter and Reduce function

1. Square root of a list :

In [4]:

```
import math
def my_map(n):
    return math.sqrt(n)
num = [1,2,4,6]
print("Original List: ",num)
result = map(my_map,num)
print("Square of numbers list:",list(result))
```

```
Original List:  [1, 2, 4, 6]
Square of numbers list: [1.0, 1.4142135623730951, 2.0, 2.449489742783178]
```

2. Filter upper case in a list:

In [5]:

```
test_list = ['x','Y','2','3','Z','b']

print("The original list is : " + str(test_list))

res_list = []
for sub in test_list:
    res = True
    for ele in sub:

        if ele.isupper():
            res = False
            break
    if res:
        res_list.append(sub)

print("Filter all upper case : " + str(res_list))
```

```
The original list is : ['x', 'Y', '2', '3', 'Z', 'b']
Filter all upper case : ['x', '2', '3', 'b']
```

In [8]:

```
fil=['x','Y','2','3','Z','b']
def my_filter(n):
    if n.islower():
        return n
result=filter(my_filter,fil)
print("lower case in list are:",list(result))
```

```
lower case in list are: ['x', 'b']
```

3. Lambda function:

In [9]:

```
from functools import reduce

l = ['a','b','c','d']
res = reduce(lambda a, b: a + b,l)
print(res)
```

```
abcd
```

4.Program using lambda and map functions:

In [2]:

```
orders = [ ("34587", "Learning Python, Mark Lutz", 4, 40.95),
           ("98762", "Programming Python, Mark Lutz", 5, 56.80),
           ("77226", "Head First Python, Paul Barry", 3,32.95),
           ("88112", "Einführung in Python3, Bernd Klein", 3, 24.99)]

min_order = 100

invoice_totals = list(map(lambda x: x if x[1] >= min_order else (x[0], x[1] + 10),
                  map(lambda x: (x[0],x[2] * x[3]), orders)))

print(list(invoice_totals))
```

```
[('34587', 163.8), ('98762', 284.0), ('77226', 108.85000000000001), ('8811
2', 84.97)]
```