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Problem Solving Using Python and R Lab

Lab10. Implementation of Map, Filter and Reduce Functions

Question1. Write a program to implement MAP function. Find the square root of a list of numbers [1, 2, 4, 6] using map and sqrt functions. Check the answer against your user defined function mymap().

In [5]:
```
from math import sqrt
lst=[1,2,4,6]
def mymap(s,l):
    lt=[]
    for i in l:
        lt.append(s(i))
    print(lt)
#main :
mymap(sqrt,lst)
```

```
[1.0, 1.4142135623730951, 2.0, 2.449489742783178]
```

Question2. Write a program to implement FILTER function. Filter all upper case letters in a list ['x', 'Y', '2', '3', 'Z', 'b'] using filter function. Check the answer against your user define function myfilter().

In [11]:
```
def myfilter(x,y):
    b=[]
    for i in y:
            if x(i):
                b.append(i)
    print(b)

#Main:
myfilter(str.isupper,['x', 'Y', '2', '3', 'Z', 'b'])
```

```
['Y', 'Z']
```

Question3. Write a program to create a lambda function that takes two characters and concatenates them. Now, apply this function inside REDUCE function that will reduce the list of characters [‘a’, ‘b’, ‘c’, d’] with the intial value ‘x’.

In [12]:
```
from functools import reduce
re=reduce(lambda x,y:x+y,['a', 'b', 'c', 'd'],'x')
print(re)
```

```
xabcd
```

Question4. Imagine an accounting routine used in a book shop. It works on a list with sublists, which look like this:

In [2]:
```
ython,Mark Lutz',4,40.95],['98762','Programming Python, Mark Lutz',5,56.80],['

if x[1] >= m_order else (x[0], x[1] - 10),
x[3]), orders)))
```

```
[('34587', 163.8), ('98762', 284.0), ('77226', 88.85000000000001), ('8811
2', 64.97)]
```

In [ ]:
```

```