06-12-23

Day 61

MAP, FILTER AND REDUCE

a) MAP

- map function applied onto each of the elements in a sequence and creates another sequence.

Q1.
```
old_list = "Welcome"
newlist = []
for ch in old_list:
    newlist.append(ch.capitalize())
print("oldlist :", old_list)
print("newlist :", newlist)
```

b) FILTER

Filter operation is to select some of the elements from a list and return a sublist.

Q2.
```
A = [33, 44, 55, 66, 77, 88]
evenlist = []
for n in range(len(A)):
    if(A[n] % 2 == 0):
        evenlist.append(A[n])
Print("Given list :", A)
Print("evenlist :", evenlist)
```

Q3.
```
S = "Welcome to Python"
yes = []
for ch in S:
    if(ch.isupper()):
        yes.appen(ch)
print(S)
print(yes)
```

9 · REDUCE

An operation that combine a sequence of elements into a single value is called reduce.

```
def sum_all (t):
    total = 0
    for x in t:
        total += x
    return (total)
list1 = [1,2,3]
print ("Total : ", sum_all (list1))
```

Deleting elements

a) pop() Syntax : Listname . pop (index)

→ works on the object

```
A = [1,2,3,4,5]
x = A.pop(2)    # 2
```

b) del

Syntax : del Listname [index]

```
t = ['a', 'b', 'c', 'd']
del t[1]    # ['a', 'c', 'd']
```

c) remove ()

Syntax : listname . remove ('element')

```
t = ['a', 'b', 'c']
t.remove ('b')    # ['a', 'c']
```

d) del with slice

```
t = ['a', 'b', 'c', 'd', 'e', 'f']
del t[4:5]  # ['a', 'b', 'c', 'd', 'f']
```

Matrix using list

```
A = [[1,2], [3,4]] , B = [[1,1], [1,1]]
for i in range(0,2):
    for j in range(0, 2):
        c[i][j] = A[i][j] + B[i][j]
print("The result")
for i in range(0,2):
    for j in range(0,2):
        print(c[i][j]),
    print()
```