In [1]:
```
1.

list1=[1,2,3,4,[44,55,66,True],False,(34,56,78,89,34),{1,2,3,3,2,1},{1:34,"key2":[5
flatlist=[]
for i in list1:
    if type(i)== int:
        flatlist.append(i)
    elif type(i)== list or type(i)== tuple or type(i)== set :
        for j in i:
            if type(j)== int:
                flatlist.append(j)
    elif type(i)== dict :
        for x in i.keys() :
            if type(x)==int :
                flatlist.append(x)


            elif type(x)== list or type(x)== tuple:
                for k in x:
                    if type(k)==int:
                        flatlist.append(k)
        for y in i.values():
             if type(y)==int:
                flatlist.append(y)
             elif type(y)==list or type(y)==tuple:
                for v in y:
                    if type(v)==int:
                        flatlist.append(v)

from functools import reduce
mul=reduce(lambda x,y:x*y,flatlist)
print(mul)
print(flatlist)
```

```
413471183898708547883384124211200 0
[1, 2, 3, 4, 44, 55, 66, 34, 56, 78, 89, 34, 1, 2, 3, 1, 4, 34, 55, 67, 78, 89, 45,
22, 61, 34, 56]
```

In [9]:
```
2
s=("I want to become a Data Scientist ")
s= s.lower()

dict={"a":"z","b":"y","c":"x"," ":"$"}
for i in dict:
    s=s.replace(i,dict[i])
print(s)
```

```
i$wznt$to$yexome$z$dztz$sxientist$
```

In [ ]: