6th Feb Assignment Amitoj Singh

Q1. Create a function which will take a list as an argument and return the product of all the numbers after creating a flat list.

Use the below-given list as an argument for your function

list1 = [1,2,3,4, [44,55,66, True], False, (34,56,78,89,34), {1,2,3,3,2,1}, {1:34, "key2": [55, 67, 78, 89], 4: (45, 22, 61, 34)}, [56, 'data science'], 'Machine Learning']

Note: you must extract numeric keys and values of the dictionary also.

In [4]:
```
list1 = [1,2,3,4, [44,55,66, True], False, (34,56,78,89,34), {1,2,3,3,2,1}, {1
```

In [126]:
```
def extraction_from_list(lm):
    l1=[] #int
    l2=[] #integers in tuples
    l3=[] #integers in set
    l4=[] #integers in list
    l5=[] #integers in dict
    l6=[] #integers from list and tuples in dict
    for i in lm:
        if type(i)==int:
            l1.append(i)

        if type(i)==tuple:
            for j in i:
                l2.append(j)

        if type(i)==set:
            for j in i:
                l3.append(j)

        if type(i)==list:
            for j in i:
                if type(j)==int:
                    l4.append(j)
        if type(i)==dict:
            for j in i:
                if type(j)==int:
                    l5.append(j)
            for k in i.values():
                if type(k)==int:
                    l6.append(k)
                elif type(k) == list or type(k) == tuple:
                    for m in k:
                        if type(m) == int:
                            l6.append(m)




    return l1+l2+l3+l4+l5+l6
```

In [127]:
```
l2=extraction_from_list(list1)
```

In [129]:
```
print(l2)
```

```
[1, 2, 3, 4, 34, 56, 78, 89, 34, 1, 2, 3, 44, 55, 66, 56, 1, 4, 34, 55, 67, 7
8, 89, 45, 22, 61, 34]
```

In [143]:
```
from functools import reduce
reduce(lambda x,y:x*y,l2)
```

Out[143]: 413471183898708547883384124211200 0

Q2 Write a python program for encrypting a message sent to you by your friend. The logic of encryption should be such that, for a the output should be z. For b, the output should be y. For c, the output should be x respectively. Also, the whitespace should be replaced with a dollar sign. Keep the punctuation marks unchanged.

Input Sentence: I want to become a Data Scientist.

Encrypt the above input sentence using the program you just created.

Note: Convert the given input sentence into lowercase before encrypting. The final output should be lowercase.

In [2]:
```
s=input("Enter your message: ")
s=s.lower()
s=s.replace("a","z")
s=s.replace("b","y")
s=s.replace("c","x")
s=s.replace(" ","$")
print(s)
```

```
Enter your message: I want to become a Data Scientist
i$wznt$to$yexome$z$dztz$sxientist
```

In [ ]:
```
```