

Assignment



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.

Ans.

```
def func(l):
```

```
    k=[]
```

```
    for i in l:
```

```
        if type(i)==list or type(i) == tuple or type(i) == set:
```

```
            for n in i:
```

```
                k.append(n)
```

```
        elif type(i) == dict:
```

```
            temp_list=list(i.items())
```

```
            for j in temp_list:
```

```
                for m in j:
```

```
                    if type(m) == list or type(m) == tuple:
```

```
                        for p in m:
```

```
                            k.append(p)
```

```
                    else:
```

```
                        k.append(m)
```

```
        else:
```

```
            k.append(i)
```

```
    return k
```

```
list1=func(list1)
```

```
print(f"Flat list is: {list1}")
```

```
a=1
```

```
for i in list1:
```

```
    if type(i)== int:
```

```
        a=a*i
```

```
print(a)
```

Output:

Flat list is: [1, 2, 3, 4, 44, 55, 66, True, False, 34, 56, 78, 89, 34, 1, 2, 3, 1, 34, 'key2', 55, 67, 78, 89, 4, 45, 22, 61, 34, 56, 'data science', 'Machine Learning']

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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.

Ans. `def mssge_encrypt(value):`

```
    d={" ": "$", "a": "z", "b": "y", "c": "x", "d": "w", "e": "v", "f": "u", "g": "t", "h": "s", "i": "r", "j": "q", "k": "p", "l": "o", "m": "n", "n": "m", "o": "l", "p": "k", "q": "j", "r": "i", "s": "h", "t": "g", "u": "f", "v": "e", "w": "d", "x": "c", "y": "b", "z": "a"}
    l=[]
    for i in value:
        for j,k in d.items():
            if i==j:
                l.append(k)
    output=''.join(l)
    return(output)
```

```
mssge=input("Enter the Message: ")
mssge_encrypt(list(mssge.lower()))
```

OUTPUT:

Enter the Message: I want to become a Data Scientist

'r\$dzmg\$gl\$yvxlnv\$z\$wzgz\$hxrvmgrhg'