

```
In [47]: # 1.1
def myreduce(add,list_1):
    return a
def add(a,b):
    return a+b
list_1=[10,15,25,40,10]
a=list_1[0]
for i in range(1,len(list_1)):
    b=list_1[i]
    a=add(a,b)
print(myreduce(add,list_1))
```

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In [51]: # 1.2
def myfilter(is_even,list_2):
    return is_even(a)
list_2=[2,3,4,5,6,7,8,9,10]
list_3=[]
def is_even(a):
    for i in list_2:
        if i%2==0:
            list_3.append(i)
    print(list_3)
myfilter(is_even,list_2)
```

[2, 4, 6, 8, 10]

```
In [27]: # 2
L1 = ['x', 'y', 'z']
L2 = [i*j for j in L1 for i in range(1, 5)]
L2
```

Out[27]: ['x', 'xx', 'xxx', 'xxxx', 'y', 'yy', 'yyy', 'yyyy', 'z', 'zz', 'zzz', 'zzzz']

```
In [28]: L3 = ['x', 'y', 'z']
L4 = [i*j for j in range(1, 5) for i in L3]
L4
```

Out[28]: ['x', 'y', 'z', 'xx', 'yy', 'zz', 'xxx', 'yyy', 'zzz', 'xxxx', 'yyyy', 'zzzz']

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In [29]: L5 = [[x + y] for y in range(3) for x in range(2, 5)]
L5
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Out[29]: [[2], [3], [4], [3], [4], [5], [4], [5], [6]]

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In [30]: L6 = [[a + b for b in range(2, 6)] for a in range(4)]
L6
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Out[30]: [[2, 3, 4, 5], [3, 4, 5, 6], [4, 5, 6, 7], [5, 6, 7, 8]]

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In [31]: L7 = [(p, q) for q in range(1, 4) for p in range(1, 4)]
L7
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Out[31]: [(1, 1), (2, 1), (3, 1), (1, 2), (2, 2), (3, 2), (1, 3), (2, 3), (3, 3)]

In []: