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#Exercise Question 1: Given a two list. Create a third list by picking an odd-index ele
#elements from the second. For Example:listOne = [3, 6, 9, 12, 15, 18, 21] listTwo = [4
#Expected Output:
#Element at odd-index positions from list one
#[6, 12, 18]
#Element at even-index positions from list two
#[4, 12, 20, 28]
#Printing Final third list
#[6, 12, 18, 4, 12, 20, 28]

list1=[3,6,9,12,15,18,21]
list2=[4,8,12,16,20,24,28]
a=list1[1::2]
print("odd index position for list1",a)
b=list2[0::2]
print("even index podition for list2",b)
a.extend(b)
print("final third list",a)
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odd index position for list1 [6, 12, 18]
even index podition for list2 [4, 12, 20, 28]
final third list [6, 12, 18, 4, 12, 20, 28]
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#2 Given a number count the total number of digits in a number

a=(input("enter numbers here:"))
print(len(a))
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```
enter numbers here:123654
6
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#3 Write a Python program to print the numbers of a specified list after removing even

list1=[1,2,3,4,5,6,7,8,9]
for i in list1:
    if(i%2==0):
        list1.remove(i)
print("list after removing even numbers from it:",list1)
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list after removing even numbers from it: [1, 3, 5, 7, 9]
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#4 -both included).

list=[1,2,3,4,5,6,7,8,9,10,11]
for i in range(1,10):
    list.append(i**2)
print("first five elements",list[:5])
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print("last five elements",list[5:10])
print("list of squares less than 30",list[:5])
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first five elements [1, 2, 3, 4, 5]
last five elements [6, 7, 8, 9, 10]
list of squares less than 30 [1, 2, 3, 4, 5]
```

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#5 Write a Python program to generate all permutations of a list in Python.
list1=[1,2,3]
def permutations(start,end=[]):
    if len(start)==0:
        print(end)
    else:
        for i in range(len(start)):
                permutations(start[:i]+start[i+1:],end+start[i:i+1])
permutations(list1)
```

```
[1, 2, 3]
[1, 3, 2]
[2, 1, 3]
[2, 3, 1]
[3, 1, 2]
[3, 2, 1]
```

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#6 Write a python program to check whether two lists are circularly identical.
a=[3,4,5,0,1,2]
b=[0,1,2,3,4,5]
c=0
d=0
while True:
    e=a[0]
    a.pop(0)
    a.append(e)
    d=len(b)
    c+=1
    if a==b:
        print("a and b are circularly identical")
        break
    if c==d:
        print("c and d are not circularly identical")
        break
```

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a and b are circularly identical
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#7 Write a Python program to change the position of every n-th value with the (n+1)th i
#list. Sample list: [0,1,2,3,4,5] Expected Output: [1, 0, 3, 2, 5, 4]

list=[0,1,2,3,4,5]
pos0,pos1=1,0
list[pos0],list[pos1]=list[pos1],list[pos0]
pos2,pos3=3,2
list[pos2],list[pos3]=list[pos3],list[pos2]
pos4,pos5=5,4
list[pos4],list[pos5]=list[pos5],list[pos4]
print("the changed position is:",list)
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the changed position is: [1, 0, 3, 2, 5, 4]
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#8 Write a Python program to iterate over two lists simultaneously.

list1=[1,2,3,4,5]
list2=["sun","mon","tue","fri","sat","sun"]
for a,b in zip(list1,list2):
    print(a,b)
```

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1 sun
2 mon
3 tue
4 fri
5 sat
```

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#9 Write a Python program to generate the combinations of n distinct objects taken from
#distinct objects: [1, 2] [1, 3] [1, 4] [1, 5] .... [7, 8] [7, 9] [8, 9]

list1=[1,2,3,4,5,6,7,8,9]
list2=[]
for i in list1:
    for j in (list1[i:]):
                a=[]
                if i==j:
                    continue
                a.append(i)
                a.append(j)
                list2.append(a)
print("original list",list)
print("combination are:\n",list2)
```

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original list [1, 0, 3, 2, 5, 4]
combination are:
 [[1, 2], [1, 3], [1, 4], [1, 5], [1, 6], [1, 7], [1, 8], [1, 9], [2, 3], [2, 4], [2, 5], [2, 6], [2, 7], [2, 8], [2, 9], [3, 4], [3, 5], [3, 6], [3, 7], [3, 8], [3, 9], [4, 5], [4, 6], [4, 7], [4, 8], [4, 9], [5, 6], [5, 7], [5, 8], [5, 9], [6, 7], [6, 8], [6, 9], [7, 8], [7, 9], [8, 9]]
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```python
#10 Write a Python program to remove duplicates from a list of lists.
#Sample list : [[10, 20], [40], [30, 56, 25], [10, 20], [33],[40]]
#New List : [[10, 20], [30, 56, 25], [33], [40]]

list1=[[10, 20], [40], [30, 56, 25], [10, 20], [33],[40]]
newlist=[]
for i in list1:
        if i not in newlist:
            newlist.append(i)
print("newlist is:",newlist)
```

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newlist is: [[10, 20], [40], [30, 56, 25], [33]]
```