

Assignment No.11

#Write a program to create three lists of numbers, their squares and cubes

```
def lists(n):  
    numbers = []  
    squares = []  
    cubes = []  
    for i in range(1, n + 1):  
        numbers.append(i)  
        squares.append(i * i)  
        cubes.append(i * i * i)  
    return numbers, squares, cubes  
  
n = 5  
numbers, squares, cubes = lists(n)  
print("Numbers:", numbers)  
print("Squares:", squares)  
print("Cubes:", cubes)
```

#Write a program to print list after removing even numbers.

```
def even_num(list):  
    for i in list:  
        if(i % 2 == 0):  
            list.remove(i)  
    return list  
  
list=[1, 2, 3, 4, 5,6, 7, 8, 9, 10]  
print("List after removing even numbers:",even_num(list))
```

#Python Program to Put Even and Odd elements of a List into two Different Lists

```
def even_odd(list):  
    even_list=[]  
    odd_list=[]
```

```

for element in list:
    if(element % 2 == 0):
        even_list.append(element)
    else:
        odd_list.append(element)
return even_list , odd_list
list=[1, 2, 3, 4, 5,6, 7, 8, 9, 10]
even, odd =even_odd(list)
print("Even numbers list:",even)
print("Odd numbers list:",odd)

```

#Python Program to Merge Two Lists and Sort it

```

def merge(li1,li2):
    merge_list=li1+li2
    return sorted(merge_list)
li1=[10,20,50,30,40]
li2=[60,80,100,90,70]
print("Merge and sorted list are:",merge(li1,li2))

```

#Python Program to Sort the List According to the Second Element in Sublist.

```

def sort_element_by_second(li):
    n = len(li)
    for i in range(n):
        ind = i
        for j in range(i + 1, n):
            if(li[j][1]< li[ind][1]):
                ind = j
        li[i], li[ind] = li[ind], li[i]
    print(li)
return li

```

```
li = [[20, 10], [90, 30], [60, 50]]
```

```
print("Sorted list:", sort_element_by_second(li))
```

#Python Program to Find the Second Largest Number in a List Using Bubble Sort.

```
def bubblesort(li):
```

```
    size=len(li)
```

```
    for i in range(1,size):
```

```
        for j in range(0,size-1):
```

```
            if(li[j]>li[j+1]):
```

```
                li[j],li[j+1]=li[j+1],li[j]
```

```
            print(li)
```

```
    return li
```

```
def find_second_large(li):
```

```
    sortedlist=bubblesort(li.copy())
```

```
    return sortedlist[-2]
```

```
li=[60,50,40,30,20,10]
```

```
print("Before sorting:",li)
```

```
second_largest=find_second_large(li)
```

```
print("Second largest number is :",second_largest)
```

#Python Program to Sort a List According to the Length of the Elements within the list.

```
def Sort_element_by_length(li):
```

```
    for i in range(0, len(li) - 1):
```

```
        ind = i
```

```
        for j in range(i + 1, len(li)):
```

```
            if(li[ind] > li[j]):
```

```
                ind = j
```

```
        li[i], li[ind] = li[ind], li[i]
```

```
    print(li)
```

```
        return li
li = [60, 50, 40, 30, 20, 10]
print("Sorted list:", Sort_element_by_length(li))
```

#Python Program to Find the Union of two Lists

```
def unionOfList(li2 , li1):
```

```
    li = li2
```

```
    for ele in li1:
```

```
        if(ele not in li2):
```

```
            li.append(ele)
```

```
    return li
```

```
li1=[10,20,30,40,50]
```

```
li2=[60,70,80,40]
```

```
res=unionOfList(li1 , li2)
```

```
print("Union of list is:",res)
```

#Python Program to Find the Intersection of Two Lists.

```
def intersectionOfList(li1 , li2):
```

```
    li = []
```

```
    for ele in li1:
```

```
        if(ele in li2):
```

```
            li.append(ele)
```

```
    return li
```

```
li1=[10,20,30,40,50]
```

```
li2=[10,20,80,90,100,30]
```

```
res=intersectionOfList(li1,li2)
```

```
print("Intersection of list is:",res)
```

#Print 1 to 100 in snakes and ladder pattern.

```
def snakeLadderBoard():
```

```
    board = []
```

```
for i in range(9, -1, -1):
    row = []
    for j in range((i * 10) + 1, (i * 10) + 11):
        row.append(j)
    if(i % 2 != 0):
        row = row[::-1]
    board.append(row)
return board

board = snakeLadderBoard()
for i in range(0, len(board)):
    for j in range(0, len(board[i])):
        print(board[i][j], end = ' ')
    print()
```