

python-programming-lab-5

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Python Programming - 2101CS405

Lab - 5

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1 list

1.0.1 01) WAP to find sum of all the elements in List.

```
[11]: my_list = []
print("Enter -1 To Stop.....")
sum = 0

while True:
    num = int(input("Enter a number (enter -1 to stop): "))

    if num == -1:
        break
    else:
        my_list.append(num)
        sum += num

print("List of numbers:", my_list)
print("Sum of the numbers:", sum)
```

Enter -1 To Stop...

List of numbers: [5, 6, 3]

Sum of the numbers: 14

1.0.2 02) WAP to find largest element in a List.

```
[13]: my_list = []
print("Enter -1 to Stop.....")

while True:
```

```

num = int(input("Enter List Element:"))

if num == -1:
    break
else:
    my_list.append(num)

max_value = max(my_list)

print("List of numbers:", my_list)
print("Max of the numbers:", max_value)

```

Enter -1 to Stop...
List of numbers: [1, 56, 98, 67, 54, 21, 26, 34]
Max of the numbers: 98

1.0.3 03) WAP to split the List into two and append the first part to the end.

```

[16]: my_list = []
print("Enter -1 to Stop....")

while True:
    num = int(input("Enter List Element:"))

    if num == -1:
        break
    else:
        my_list.append(num)

midpoint = len(my_list) // 2

sublist1 = my_list[:midpoint]
sublist2 = my_list[midpoint:]

print(f"List is :{my_list}")
print(f"Sublist is :{sublist1}")
print(f"Sublist is :{sublist2}")

result_list = sublist2 + sublist1

print(f"List after appending Sublist 1 to Sublist 2: {result_list}")

```

Enter -1 to Stop...
List is :[10, 20, 30, 40, 50]
Sublist is :[10, 20]
Sublist is :[30, 40, 50]
List after appending Sublist 1 to Sublist 2: [30, 40, 50, 10, 20]

1.0.4 04) WAP to interchange first and last elements in list entered by a user.

```
[17]: my_list = []
print("Enter -1 to Stop....")

while True:
    num = int(input("Enter List Element:"))

    if num == -1:
        break
    else:
        my_list.append(int(num))

print(f"List is :{my_list}")

if len(my_list)>=2:
    my_list[0],my_list[-1] = my_list[-1],my_list[0]
    print('List after Changing:',my_list)
else:
    print("List should have at least 2 elements")
```

Enter -1 to Stop...

List is :[1, 2, 3, 4, 5, 6, 7, 8, 9]

List after Changing: [9, 2, 3, 4, 5, 6, 7, 8, 1]

1.0.5 05) WAP to interchange the elements on two positions entered by a user.

```
[21]: my_list = []
print("Enter -1 to Stop....")

while True:
    num = int(input("Enter List Element:"))

    if num == -1:
        break
    else:
        my_list.append(int(num))

print(f"List is :{my_list}")

a = int(input("Enter First Position:"));
b = int(input("Enter Second Position:"));

if a >= len(my_list) or b >= len(my_list):
    print("Index Out of Bound")
else:
    my_list[a],my_list[b] = my_list[b],my_list[a]
```

```
print('List after Changing:',my_list)
```

Enter -1 to Stop...
List is :[10, 20, 30]
Index Out of Bound

1.0.6 06) WAP to reverses the list entered by user.

```
[22]: my_list = []  
print("Enter -1 to Stop....")  
  
while True:  
    num = int(input("Enter List Element:"))  
  
    if num == -1:  
        break  
    else:  
        my_list.append(int(num))  
  
print(f"List is :{my_list}")  
  
my_list.reverse();  
  
print("Reversed List: ",my_list);
```

Enter -1 to Stop...
List is :[10, 20, 30]
Reversed List: [30, 20, 10]

1.0.7 07) Python program to remove multiple elements from a list using list comprehension

```
[29]: mylist = []  
print("Enter List\n")  
print("Enter -1 to stop\n")  
while 1 :  
    c = int(input("Enter a number : "))  
    if c == -1 :  
        break  
    mylist.append(c)  
c = 0  
elements_to_remove = []  
print(f"mylist : {mylist}")  
print("Enter elements to remove \n")  
print("Enter -1 to stop\n")  
while 1 :  
    c = int(input("Enter a number : "))
```

```

    if c == -1 :
        break
    elements_to_remove.append(c)
print(f"removing list : {elements_to_remove}")
filtered_list = [element for element in mylist if element not in_
↪elements_to_remove]
print(filtered_list)

```

Enter List

Enter -1 to stop

mylist : [10, 20, 30, 40, 50]

Enter elements to remove

Enter -1 to stop

removing list : [20, 30, 60]

[10, 40, 50]

1.0.8 08) Create a list from the specified start to end index of another list.

```

[15]: mylist = []
print("Enter -1 to stop\n")
while 1 :
    c = int(input("Enter a number : "))
    if c == -1 :
        break
    mylist.append(c)
print(f"List is : {mylist}")
n1 = int(input("Enter first position : "))
n2 = int(input("Enter second position : "))
if n1 >= len(mylist) or n2 >= len(mylist) :
    print("List index out of bound")
else :
    newlist = mylist[n1:n2]
    print(f"New List is : {newlist}")

```

Enter -1 to stop

List is : [1, 2, 3, 4, 5, 6, 7, 8, 9]

New List is : [2, 3, 4, 5, 6, 7]

1.0.9 09) Input comma separated elements, convert into list and print.

```
[3]: s = input("Enter comma separated string :")
a = s.split(',')
print(a)
```

['Hii']

1.0.10 01) WAP to count Even and Odd numbers in a List.

```
[5]: my_list = [];
odd_count = 0
even_count = 0

print("Enter -1 to Stop..")

while 1:
    n = int(input("Enter List Element:"))

    if n == -1:
        break;
    else:
        my_list.append(n);
        if n % 2 == 0:
            even_count = even_count + 1;
        else:
            odd_count = odd_count + 1;

print("List is :",my_list)
print("Odd No Count:- ",odd_count);
print("Even No Count:- ",even_count);
```

Enter -1 to Stop..

List is : [10, 20, 30, 40, 59, 53, 89]

Odd No Count:- 3

Even No Count:- 4

1.0.11 02) Python program to find N largest and smallest elements from the list

```
[11]: my_list = []
print("Enter -1 to stop\n")

while True:
    num = input("Enter a number (or -1 to stop): ")

    if num == '-1':
        break
```

```

        my_list.append(int(num))

print("List is: ",my_list)

# smallest element
min_num = my_list[0]
for num in my_list[1:]:
    if num < min_num:
        min_num = num

# largest element
max_num = my_list[0]
for num in my_list[1:]:
    if num > max_num:
        max_num = num

print("Smallest element:", min_num)
print("Largest element:", max_num)

```

Enter -1 to stop

List is: [10, 50, 56, 89, 70, 1000]

Smallest element: 10

Largest element: 1000

1.0.12 03) WAP to print duplicates from a list of integers

```

[9]: my_list = []
print("Enter -1 to stop\n")

while True:
    num = int(input("Enter a number: "))

    if num == -1:
        break

    my_list.append(num)

print("My list is: ",my_list)

duplicates = []
seen = []

for number in my_list:
    if number in seen:
        if number not in duplicates:
            duplicates.append(number)

```

```
    else:
        seen.append(number)

if duplicates:
    print("Duplicate elements:", duplicates)
else:
    print("No duplicate elements found.")
```

Enter -1 to stop

My list is: [10, 10, 50, 50, 60, 60, 70, 70, 80, 90, 100]

Duplicate elements: [10, 50, 60, 70]