# LISTS

**#Author - Soumitra Das** **Date - 15/12/2022**

**#(a) Create a list**

```
list1 = [1,2,5,'hello',41,'world'] print(list1)
```

**OUTPUT:**

```
PS D:\Python> python -u "d:\Python\Assignment List\create.py"
[1, 2, 5, 'hello', 41, 'world']
```

**#Author - Soumitra Das** **Date - 05/01/2023**

**#(b) Concatenate two lists**

```
li1 = ['Soumitra']
li2 = ['Das']
print(li1)
print(li2)
print(li1 + li2)
```

**OUTPUT:**

```
PS D:\Python> python -u "d:\Python\Assignment List\concatenate.py"
['Soumitra']
['Das']
['Soumitra', 'Das']
```

**#Author - Soumitra Das** **Date - 05/01/2023**

**#(c) Extend another list in a list**

```
a = [1,2,3,4] b =
[5,6,7,8] print("Tuple
'a' is =",a)
```

```
print("Tuple 'b' is
=",b)
a.extend(b)
print("Extend tuple is =",a)
```

**OUTPUT:**

```
PS D:\Python> python -u "d:\Python\Assignment List\extend.py"
Tuple 'a' is = [1, 2, 3, 4]
Tuple 'b' is = [5, 6, 7, 8]
Extend tuple is = [1, 2, 3, 4, 5, 6, 7, 8]
```

**#Author - Soumitra Das                              Date - 05/01/2023**

## #(d) Append an item in a list

```
a = [1,2,4,57,6]
print("Before Append List is : ",a)
n=int(input("Enter the number which can be append : "))
a.append(n)
print("After append() tuple is : ",a)
```

**OUTPUT:**

```
PS D:\Python> python -u "d:\Python\Assignment List\append.py"
Before Append List is :  [1, 2, 4, 57, 6]
Enter the number which can be append : 99
After append() tuple is :  [1, 2, 4, 57, 6, 99]
```

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## #(e) Insert an item in the 3rd position of a list.

```
li = ['python','is','a','language'] print("Before
insert an item the list is : ",li)
pos=int(input("Enter the position where
can be insert : ")) ele=input("Enter the
element : ") li.insert(pos-1,ele)
print("After insert an item the  list is : ",li)
```

**OUTPUT:**

```
PS D:\Python> python -u "d:\Python\Assignment List\insert.py"
Before insert an item the list is :  ['python', 'is', 'a', 'language']
Enter the position where can be insert : 4
Enter the element : scripting
After insert an item the  list is :  ['python', 'is', 'a', 'scripting', 'language']
```

**#Author - Soumitra Das                    Date - 05/01/2023 #(f)**

### Pop an item.

```
a = [1,2,4,7,5,4] print("Before
pop , list is : ") print(a)
a.pop(3)
print("After pop , list is : ")
print(a)
```

**OUTPUT:**

```
PS D:\Python> python -u "d:\Python\Assignment List\pop.py"
Before pop , list is :
[1, 2, 4, 7, 5, 4]
After pop , list is :
```

```
[1, 2, 4, 5, 4]
```

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**#(g) Find the index of a given item by using index() method.**

```
a = [5,8,4,2,1]
print("List is : ")
print(a)
ele=int(input("Enter the element from above list : "))
ind=a.index(ele)
print("Index of {} is : {}".format(ele,ind))
```

OUTPUT:

```
PS D:\Python> python -u "d:\Python\Assignment List\index.py"
List is :
[5, 8, 4, 2, 1]
Enter the element from above list : 8
Index of 8 is : 1
```

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**#(h) Count number of items in the list.**

```
a = [1,2,5,7,5,8,4,1,4,5] print("Before
count the list : ",a)
ele=int(input("Enter the element :
")) co=a.count(4)
print("After count,an item of {} is = {} times".format(ele,co))
```

**OUPUT:**

```
PS D:\Python> python -u "d:\Python\Assignment List\count.py"
Before count the list :  [1, 2, 5, 7, 5, 8, 4, 1, 4, 5]
Enter the element : 4
After count,an item of 4 is = 2 times
PS D:\Python> python -u "d:\Python\Assignment List\count.py"
Before count the list :  [1, 2, 5, 7, 5, 8, 4, 1, 4, 5]
Enter the element : 5
After count,an item of 5 is = 2 times
```

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**#(i) Sort the list.**

```
a = [6,5,4,3,2,1]
print("Before sort , list is : ",a)
a.sort()
print("After sort , list is : ",a)
```

**OUTPUT:**

```
PS D:\Python> python -u "d:\Python\Assignment List\sort.py"
Before sort , list is :  [6, 5, 4, 3, 2, 1]
After sort , list is :  [1, 2, 3, 4, 5, 6]
```

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**#(j) Reverse the list using reverse() function.**

```
a = [5,4,1,9,4,2,4]
```

```
print("Before reverse , the list is : ",a)
a.reverse()
print("After reverse , the list is : ",a)
```

**OUTPUT:**

```
PS D:\Python> python -u "d:\Python\Assignment List\reverse.py"
Before reverse , the list is :  [5, 4, 1, 9, 4, 2, 4]
After reverse , the list is :  [4, 2, 4, 9, 1, 4, 5]
```

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**#(k) Copy the list into another list.**

```
list1 = [4,7,5,8,7,2,4]
print("Before copy , list1 is : ",list1)
list2 =list1.copy()
print("After copy , list2 is :
",list2) print(id(list1))
print(id(list2))
```

**OUTPUT:**

```
PS D:\Python> python -u "d:\Python\Assignment List\copy.py"
Before copy , list1 is :  [4, 7, 5, 8, 7, 2, 4]
After copy , list2 is :  [4, 7, 5, 8, 7, 2, 4]
2024036710336 2024036964288
```

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**#(l) Create a multi-dimensional list.**

```
a = [1,2,[3,4,5,],[6,7,8,9],10] print("A
multi-dimensional list is :\n ") print(a)
```

**OUTPUT:**

```
PS D:\Python> python -u "d:\Python\Assignment List\multi_list.py" A
multi-dimensional list is :


[1, 2, [3, 4, 5], [6, 7, 8, 9], 10]
```

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**#(m) illustrate join() and split() method.**

```
li = ['python','is','a','object','oriented','language'] stg
= '*'
print("Before join method , list is : ",li)
stg = stg.join(li)
print("After join method , list is : ",stg)


msg = "I Love My Parents"
print("Before split: ",msg)
li = msg.split()
print("After split, list is : ",li)
```

**OUTPUT:**

```
PS D:\Python> python -u "d:\Python\Assignment List\join_split.py"
Before join method , list is :  ['python', 'is', 'a', 'object', 'oriented',
'language']
After join method , list is :  python*is*a*object*oriented*language
Before split:  I Love My Parents
```

```
After split, list is :  ['I', 'Love', 'My', 'Parents']
```

**#Author - Soumitra Das** **Date - 05/01/2023**

### #(n) create list alias.

```
a = [1,4,5,7,3,2] b
= a
print("List 'a' is :",a)
print("List 'b' is :",b) if
(id(a)==id(b)):
print("Alias is
occurred") else:
   print("Not occurred")
```

**OUTPUT:**

```
PS D:\Python> python -u "d:\Python\Assignment List\alias.py"
List 'a' is : [1, 4, 5, 7, 3, 2]
List 'b' is : [1, 4, 5, 7, 3, 2]
Alias is occurred
```

**#Author - Soumitra Das** **Date - 05/01/2023**

### (o) illustrate shallow copy and deep copy

```
import copy
s5= [1,2,[3,4,5],6,[7,8,9,10],11]
print("The original list is :",s5)
s6=copy.copy(s5)
print("The copied list is :",s6)
```

```
s5[4][2]=99#add 99 in inner list s5[4][2]
print("After add item in inner list :: ")
print("The original list is: ",s5)
print("The copied list is :",s6)
```

OUTPUT:

```
The original list is : [1, 2, [3, 4, 5], 6, [7, 8, 9, 10], 11]
The copied list is : [1, 2, [3, 4, 5], 6, [7, 8, 9, 10], 11]
After add item in inner list ::
The original list is:  [1, 2, [3, 4, 5], 6, [7, 8, 99, 10], 11]
The copied list is : [1, 2, [3, 4, 5], 6, [7, 8, 99, 10], 11]
```

```
s5= [1,2,[3,4,5],6,[7,8,9,10],11]
#deepcopy
print("The original list is :",s5)
s6=copy.deepcopy(s5)
print("The copied list is :",s6)
s5[4][2]=99#add 99 in inner list s5[4][2]
print("After add item in inner list s5[4][2]:: ")
print("The original list is: ",s5)
print("The copied list is :",s6)
```

OUTPUT:

```
The original list is : [1, 2, [3, 4, 5], 6, [7, 8, 9, 10], 11]
The copied list is : [1, 2, [3, 4, 5], 6, [7, 8,
9, 10], 11]

After add item in inner list s5[4][2]::

The original list is:  [1, 2, [3, 4, 5], 6, [7, 8,
99, 10], 11]

The copied list is : [1, 2, [3, 4, 5], 6, [7, 8,
9, 10], 11]
```

**#Author - Soumitra Das                    Date - 05/01/2023**

**#(p) unpack list itmes into variables.**

```
li = [4,5,1,2,7,8]

print("Before unpack , list is : ")

print(li)

print("After unpack : ")

a,b,c,d,e,f = li

print(a)

print(b)

print(c)

print(d)

print(e)

print(f)
```

OUTPUT:

```
PS D:\Python> python -u "d:\Python\Assignment List\unpack.py" Before

unpack , list is :

[4, 5, 1, 2, 7, 8] After

unpack :

4
```

5

1

2

7

8