**15.How to do shallow copy and deep copy in python?**

**Objective:**

* To see how to copy a elements from one list to another list using python3.

**Process:**

* **Shallow copy:**

A shallow copy creates a new object which stores the reference of the original elements.

Shallow copy doesn't create a copy of nested objects, instead it just copies the reference of nested objects.

* **Deep copy:**

A deep copy creates a new object and recursively adds the copies of nested objects present in the original elements.

**Input:**

* List.

**Output:**

* New list.(After done shallow and deep copy).

**Source code:**

#copy a list using = operator

print("\*\*\*\*Copy using assignment operator\*\*\*\*")

list1=[[15,19,20],[25,24,26],[11,10,12]]

#copying the list1 using = operator

newlist=list1

print("original list is\n",list1)

list1[1][1]='s'

print("new list is\n",newlist)

#shallow copy

print("\*\*\*\*\*\*\*Shallow copy\*\*\*\*\*\*\*")

import copy

list1=[[15,19,20],[25,24,26],[11,10,12]]

#copy the list1 using copy()

newlist=copy.copy(list1)

list1[1][1]='a'

print("original list is\n",list1)

print("new list is\n",newlist)

#deep copy

import copy

print("\*\*\*\*\*\*\*Deep copy\*\*\*\*\*\*\*")

list1=[[15,19,20],[25,24,26],[11,10,12]]

#copy the list1 using deepcopy()

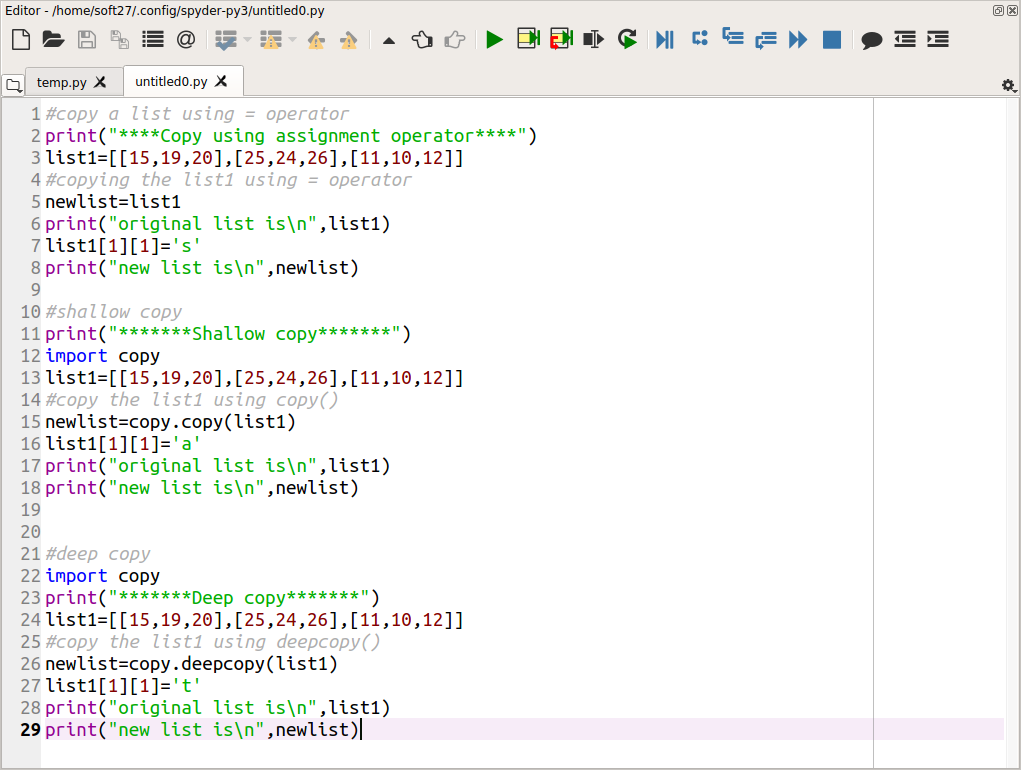
newlist=copy.deepcopy(list1)

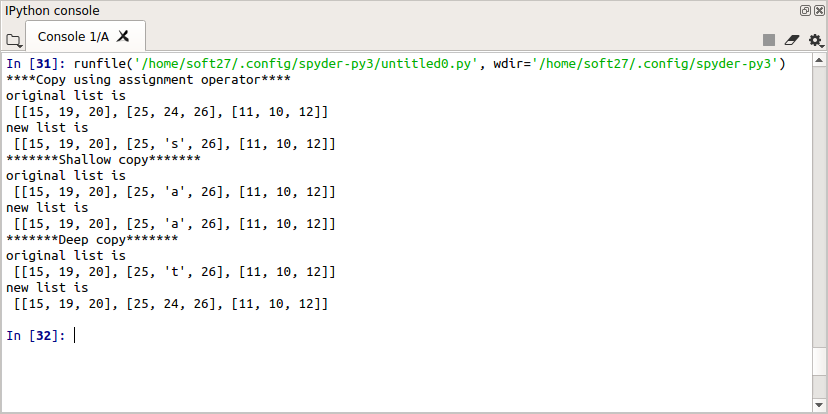
list1[1][1]='t'

print("original list is\n",list1)

print("new list is\n",newlist)

**Screen shot:**

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