2306aml109-byogeshwar-assignment-6

July 1, 2023

[1]:
```
##Assignment--6
```

[ ]:
```
##1.  Write a Python program to check whether a list contains a sublist.
```

[3]:
```
def is_sublist(list1, list2):
    if not list2:
        return True
    if not list1:
        return False
    if list2 == list1[:len(list2)]:
        return True
    return is_sublist(list1[1:], list2)
```

[8]:
```
a = [2,4,3,5,7]
b = [4,3]
if is_sublist(a, b):
    print("b is a sublist of a")
else:
    print("b is not a sublist of a")
```

```
b is a sublist of a
```

[9]:
```
a = [2,4,3,5,7]
c = [3,7]
if is_sublist(a, c):
    print("c is a sublist of a")
else:
    print("c is not a sublist of a")
```

```
c is not a sublist of a
```

[ ]:
```
##2. Write a Python program to find common items from two lists.
```

[10]:
```
def find_common_items(list1, list2):
    common_items = []
    for item in list1:
        if item in list2:
            common_items.append(item)
```

```
    return common_items
```

[16]:
```
color1 = ["Red", "Green", "Orange", "White"]
color2 = ["Black", "Green", "White", "Pink"]
common_items = find_common_items(color1, color2)
if len(common_items)==0:
    print("No Common Items found")
else:
    print("Common items:", common_items)
```

```
Common items: ['Green', 'White']
```

[17]:
```
color1 = ["Red", "Green", "Orange", "White"]
color2 = ["Black","Pink"]
common_items = find_common_items(color1, color2)
if len(common_items)==0:
    print("No Common Items found")
else:
    print("Common items:", common_items)
```

```
No Common Items found
```

[ ]:
```
##3. Write a Python program to get the difference between the two lists
```

[19]:
```
def find_list_difference(list1, list2):
    difference = []
    for item in list1:
        if item not in list2:
            difference.append(item)
    return difference
```

[21]:
```
list1 = [1, 2, 3, 4]
list2 = [1,2]
difference = find_list_difference(list1, list2)
print("Difference:", difference)
```

```
Difference: [3, 4]
```

[22]:
```
list1 = [1, 2, 3, 4]
list2 = [5,6,7,8]
difference = find_list_difference(list1, list2)
print("Difference:", difference)
```

```
Difference: [1, 2, 3, 4]
```

[ ]:
```
##4. Write a Python program to generate all permutations of a list in Python
```

[23]:
```
from itertools import permutations

def generate_permutations(lst):
    perm = permutations(lst)
    all_permutations = list(perm)
    return all_permutations
```

[24]:
```
my_list = [1, 2, 3]
permutations_list = generate_permutations(my_list)
print("Permutations:")
for perm in permutations_list:
    print(perm)
```

```
Permutations:
(1, 2, 3)
(1, 3, 2)
(2, 1, 3)
(2, 3, 1)
(3, 1, 2)
(3, 2, 1)
```

[25]:
```
my_list = [1, 2, 3,4]
permutations_list = generate_permutations(my_list)
print("Permutations:")
for perm in permutations_list:
    print(perm)
```

```
Permutations:
(1, 2, 3, 4)
(1, 2, 4, 3)
(1, 3, 2, 4)
(1, 3, 4, 2)
(1, 4, 2, 3)
(1, 4, 3, 2)
(2, 1, 3, 4)
(2, 1, 4, 3)
(2, 3, 1, 4)
(2, 3, 4, 1)
(2, 4, 1, 3)
(2, 4, 3, 1)
(3, 1, 2, 4)
(3, 1, 4, 2)
(3, 2, 1, 4)
(3, 2, 4, 1)
(3, 4, 1, 2)
(3, 4, 2, 1)
(4, 1, 2, 3)
(4, 1, 3, 2)
```

```
(4, 2, 1, 3)
(4, 2, 3, 1)
(4, 3, 1, 2)
(4, 3, 2, 1)
```

[ ]:
```
##5. Write a Python program to remove duplicates from a list.
```

[26]:
```
def remove_duplicates(lst):
    unique_list = []
    for item in lst:
        if item not in unique_list:
            unique_list.append(item)
    return unique_list
```

[30]:
```
a = [10,20,30,20,10,50,60,40,80,50,40]
unique_list = remove_duplicates(a)
print("List with duplicates removed:", unique_list)
```

```
List with duplicates removed: [10, 20, 30, 50, 60, 40, 80]
```

[ ]:
```

```