Assignment 6 - Renduchintala Navya - 2306AML112

1. Write a Python program to check whether a list contains a sublist.

In [1]:
```
def is_Sublist(a, b):
    if len(b) > len(a):
        return False

    for i in range(len(a)):
        if a[i] == b[0]:
            if a[i:i+len(b)] == b:
                return True
    return False
```

In [2]:
```
a = [2, 4, 3, 5, 7]
b = [4, 3]
c = [3, 7]

print(is_Sublist(a, b))
print(is_Sublist(a, c))
```

```
True
False
```

2. Write a Python program to find common items from two lists.

In [3]:
```
def find_common_items(list1, list2):
    set1 = set(list1)
    set2 = set(list2)
    common_items = set1.intersection(set2)
    return common_items
```

In [12]:
```
color1 = ["Red", "Green", "Orange", "White"]
color2 = ["Black", "Green", "White", "Pink"]

common_colors = find_common_items(color1, color2)
print(common_colors)
```

```
{'White', 'Green'}
```

3. Write a Python program to get the difference between the two lists

In [5]:
```
def find_list_difference(list1, list2):
    difference = list(set(list1) - set(list2))
    return difference
```

In [6]:
```
list1 = [1, 2, 3, 4]
list2 = [1, 2]

list_difference = find_list_difference(list1, list2)
print(list_difference)
```

```
[3, 4]
```

4. Write a Python program to generate all permutations of a list in Python

In [8]:
```
from itertools import permutations

def generate_permutations(lst):
    permutations_list = list(permutations(lst))
    return permutations_list
```

In [9]:
```
input_list = [1, 2, 3]

permutations_result = generate_permutations(input_list)
print(permutations_result)
```

```
[(1, 2, 3), (1, 3, 2), (2, 1, 3), (2, 3, 1), (3, 1, 2), (3, 2, 1)]
```

5. Write a Python program to remove duplicates from a list.

In [10]:
```
def remove_duplicates(a):
    unique_list = list(set(a))
    return unique_list
```

In [11]:
```
a = [10, 20, 30, 20, 10, 50, 60, 40, 80, 50, 40]
```

```
unique_elements = remove_duplicates(a)
print(unique_elements)
```

```
[40, 10, 80, 50, 20, 60, 30]
```