# Assignment 6

In [ ]:
```
def is_sublist(sublist, main_list):
    if not sublist:
        return True  # An empty sublist is always a sublist

    sublist_len = len(sublist)
    for i in range(len(main_list) - sublist_len + 1):
        if main_list[i:i + sublist_len] == sublist:
            return True

    return False
```

In [8]:
```
a = [2,4,3,5,7]
b = [4,3]
c = [3,7]
print(is_sublist(b, a))
print(is_sublist(a, c))
```

```
True
False
```

In [9]:
```
def find_common_items(list1, list2):
    common_items = []
    for item in list1:
        if item in list2:
            common_items.append(item)
    return common_items
```

In [10]:
```
color1 = "Red", "Green", "Orange", "White"
color2 = "Black", "Green", "White", "Pink"

common_items = find_common_items(color1, color2)

print("Common items:", common_items)
```

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

In [12]:
```
def find_list_difference(list1, list2):
    difference = [item for item in list1 if item not in list2]
    return difference
```

In [13]:
```
list1 = [1, 2, 3, 4]
list2 = [1, 2]
difference = find_list_difference(list1, list2)
print("Difference:", difference)
```

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

In [14]:
```
from itertools import permutations

def generate_permutations(input_list):
    all_permutations = list(permutations(input_list))
    return all_permutations
```

In [15]:
```
# Example usage
input_list =[1,2,3]
all_permutations = generate_permutations(input_list)

print("All permutations:")
for perm in all_permutations:
    print(perm)
```

```
All permutations:
(1, 2, 3)
(1, 3, 2)
(2, 1, 3)
(2, 3, 1)
(3, 1, 2)
(3, 2, 1)
```

In [18]:
```
def remove_duplicates(input_list):
    unique_list = []
    for item in input_list:
        if item not in unique_list:
            unique_list.append(item)
    return unique_list
```

In [19]:
```
# Example usage
a = [10,20,30,20,10,50,60,40,80,50,40]
unique_list = remove_duplicates(input_list)

print("Original list:", input_list)
print("List with duplicates removed:", unique_list)
```

```
Original list: [1, 2, 3]
List with duplicates removed: [1, 2, 3]
```

In [ ]:
```

```