# Practical 2

A) Create a list and apply methods (append, extend, remove, reverse), arrange the created list in ascending and descending order.

Code:-

```
# Create an empty list
my_list = []

# Append elements to the list
my_list.append(10)
my_list.append(20)
my_list.append(30)

print("Initial List:", my_list)

# Extend the list with another list
my_list.extend([40, 50, 60])

print("List After Extending:", my_list)

# Remove an element from the list
my_list.remove(20)

print("List After Removing Element:", my_list)

# Reverse the list
my_list.reverse()

print("List After Reversing:", my_list)

# Sort the list in ascending order
my_list.sort()

print("List In Ascending Order:", my_list)

# Sort the list in descending order
my_list.sort(reverse=True)

print("List In Descending Order:", my_list)
```

output:

```
Initial List: [10, 20, 30]
List After Extending: [10, 20, 30, 40, 50, 60]
List After Removing Element: [10, 30, 40, 50, 60]
List After Reversing: [60, 50, 40, 30, 10]
List In Ascending Order: [10, 30, 40, 50, 60]
List In Descending Order: [60, 50, 40, 30, 10]
>
```

**b) List1 = [1, 2, 3, 4, ["python", "java", "c++", [10,20,30]], 5, 6, 7, ["apple", "banana","orange"]] From above list get word “orange” and “Python” & repeat this list five times without using loops.**

**Code:-**

```
# Given list
List1 = [1, 2, 3, 4, ["python", "java", "c++", [10, 20, 30]], 5, 6, 7, ["apple", "banana", "orange"]]

# Get the word "orange" from the list
orange_word = List1[-1][-1]

# Get the word "Python" from the list
python_word = List1[4][0].capitalize()

# Repeat the list five times
RepeatedList = [List1] * 5

# Output the words and the repeated list
print("Word 'orange':", orange_word)
print("Word 'Python':", python_word)
print("Repeated List:")
print(RepeatedList)
```

Output:-

```
Word 'orange': orange
Word 'Python': Python
Repeated List:
[[1, 2, 3, 4, ['python', 'java', 'c++', [10, 20, 30]], 5, 6, 7, ['apple', 'banana',
    'orange']], [1, 2, 3, 4, ['python', 'java', 'c++', [10, 20, 30]], 5, 6, 7,
    ['apple', 'banana', 'orange']], [1, 2, 3, 4, ['python', 'java', 'c++', [10, 20,
    30]], 5, 6, 7, ['apple', 'banana', 'orange']], [1, 2, 3, 4, ['python', 'java', 'c
    ++', [10, 20, 30]], 5, 6, 7, ['apple', 'banana', 'orange']], [1, 2, 3, 4,
    ['python', 'java', 'c++', [10, 20, 30]], 5, 6, 7, ['apple', 'banana', 'orange']]]
>
```

**c) Create a list and copy it using slice function**

Code:-

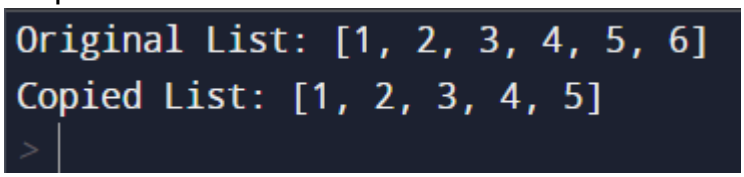
```
# Create a list
original_list = [1, 2, 3, 4, 5]

# Copy the list using slice function
copied_list = original_list[:]

# Modify the original list
original_list.append(6)

# Output the original and copied lists
print("Original List:", original_list)
print("Copied List:", copied_list)
```

output:-



**D) Create a tuple and apply different types of mathematical operation on it (Sum, Maximum, minimum etc.).**

Code:-

```
# Create a tuple
my_tuple = (1, 3, 5, 7, 9)

# Sum of all elements in the tuple
sum_of_elements = sum(my_tuple)

# Maximum value in the tuple
max_value = max(my_tuple)

# Minimum value in the tuple
min_value = min(my_tuple)

# Length of the tuple
length_of_tuple = len(my_tuple)

# Output the results
print("Tuple:", my_tuple)
print("Sum of elements:", sum_of_elements)
print("Maximum value:", max_value)
print("Minimum value:", min_value)
print("Length of tuple:", length_of_tuple)
```

output:-