Python Basic Programming Assignment 10

1. Write a Python program to find sum of elements in list?

In [16]:
```python
array1 = [10,20,30]
print(sum(array1))
```

60

2. Write a Python program to Multiply all numbers in the list?

In [17]:
```python
mul = 1
for i in range(len(array1)):
    mul = mul * array1[i]
print(mul)
```

6000

3. Write a Python program to find smallest number in a list?

In [18]:
```python
print(min(array1))
```

10

4. Write a Python program to find largest number in a list?

In [19]:
```python
print(max(array1))
```

30

5. Write a Python program to find second largest number in a list?

In [23]:
```python
def second_largest(numbers):
    # Sort the list in descending order
    sorted_numbers = sorted(numbers, reverse=True)
    # Return the second element in the sorted list
    return sorted_numbers[1]
print(second_largest([1, 2, 3, 4, 5])) # 4
print(second_largest([5, 4, 3, 2, 1])) # 4
print(second_largest([1, 5, 2, 4, 3])) # 4
print(second_largest([5, 1, 3, 4, 2])) # 4
print(second_largest([1, 2, 2, 4, 3])) # 3
```

4
4
4
4
3

In [ ]:

6. Write a Python program to find N largest elements from a list?

```
In [24]:  def n_largest(numbers, n):
              # Sort the list in descending order
              sorted_numbers = sorted(numbers, reverse=True)
              # Return the first n elements of the sorted list
              return sorted_numbers[:n]
          print(n_largest([1, 2, 3, 4, 5], 2)) # [5, 4]
          print(n_largest([5, 4, 3, 2, 1], 3)) # [5, 4, 3]
          print(n_largest([1, 5, 2, 4, 3], 4)) # [5, 4, 3, 2]
          print(n_largest([5, 1, 3, 4, 2], 1)) # [5]
          print(n_largest([1, 2, 2, 3, 3], 3)) # [3, 3, 2]
```

```
[5, 4]
[5, 4, 3]
[5, 4, 3, 2]
[5]
[3, 3, 2]
```

7. Write a Python program to print even numbers in a list?

```
In [25]:  array2 = [10,11,12,13,14,15,16]
          evenelements = []
          for i in range(0, len(array2)):
              if array2[i] % 2 == 0:
                  evenelements.append(array2[i])
          print(evenelements)
```

```
[10, 12, 14, 16]
```

8. Write a Python program to print odd numbers in a List?

```
In [26]:  array2 = [10,11,12,13,14,15,16]
          oddelements = []
          for i in range(0, len(array2)):
              if array2[i] % 2 != 0:
                  oddelements.append(array2[i])
          print(oddelements)
```

```
[11, 13, 15]
```

9. Write a Python program to Remove empty List from List?

```
In [27]:  def remove_empty_lists(lst):
              # Use a list comprehension with a conditional statement to remove empty lists
              return [elem for elem in lst if elem != []]
          # Test the function
          print(remove_empty_lists([[1, 2, 3], [], [4, 5, 6], [], [], [7, 8, 9]])) # [[1, 2, 3],
          print(remove_empty_lists([[], [1, 2, 3], [], [4, 5, 6], [7, 8, 9]])) # [[1, 2, 3], [4,
          print(remove_empty_lists([[1, 2, 3], [4, 5, 6], [7, 8, 9]])) # [[1, 2, 3], [4, 5, 6],
          print(remove_empty_lists([[], [], []])) # []
          print(remove_empty_lists([])) # []
```

```
[[1, 2, 3], [4, 5, 6], [7, 8, 9]]
[[1, 2, 3], [4, 5, 6], [7, 8, 9]]
[[1, 2, 3], [4, 5, 6], [7, 8, 9]]
[]
[]
```

10. Write a Python program to Cloning or Copying a list?

In [28]:
```python
def clone_list(lst):
    # Create a new list and copy the elements from the original list
    new_list = list(lst)
    return new_list
# Test the function
original_list = [1, 2, 3, 4, 5]
cloned_list = clone_list(original_list)
# Modify the original list
original_list[0] = 10
# Print the original and cloned lists
print(original_list) # [10, 2, 3, 4, 5]
print(cloned_list) # [1, 2, 3, 4, 5]
```

```
[10, 2, 3, 4, 5]
[1, 2, 3, 4, 5]
```

11. Write a Python program to Count occurrences of an element in a list?

In [29]:
```python
def count_occurrences(lst, elem):
    # Use the count method of the list to count the occurrences of the element
    return lst.count(elem)
# Test the function
print(count_occurrences([1, 2, 3, 1, 2, 3, 1, 2, 3], 1)) # 3
print(count_occurrences([1, 2, 3, 1, 2, 3, 1, 2, 3], 2)) # 3
print(count_occurrences([1, 2, 3, 1, 2, 3, 1, 2, 3], 3)) # 3
print(count_occurrences([1, 2, 3, 1, 2, 3, 1, 2, 3], 4)) # 0
```

```
3
3
3
0
```

In [ ]: