1. Write a Python program to sum all the items in a list.

In [18]:
```
def sum_list(lst):
    total = 0
    for num in lst:
        total += num
    return total

# Example usage:
my_list = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
sum_list(my_list)
```

Out[18]: 55

2. Write a Python program to get the largest number from a list.

In [19]:
```
my_list = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]

def largest_num(list):
    lar = list[0]
    for item in list:
        if item > lar:
            lar = item

    return item

largest_num(my_list)
```

Out[19]: 10

3. Write a Python program to count the number of strings from a given list of strings. The string length is 2 or more and the first and last characters are the same

In [20]:
```
strings_list = ['abc','xyz','aba','1221']


def num_of_str(list):
    new_list = 0
    for item in list:
        if len(item) >= 2 and item[0] == item[-1]:
            new_list += 1
    return new_list

num_of_str(strings_list)
```

Out[20]: 2

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

In [21]:
```
duplicate_list_1 = [2, 4, 10, 20, 5, 2, 20, 4]

def remove_duplicates(duplicate_list):
    o_g_list = []
    for item in duplicate_list:
        if item not in o_g_list:
            o_g_list.append(item)
    return o_g_list

remove_duplicates(duplicate_list_1)
```

Out[21]: [2, 4, 10, 20, 5]

5. Write a Python program to check if a list is empty or not.

In [22]:
```
list = [1,2,3,4,5,6,7,8,9,10]
list_2 = []

def check_if_list_is_empty_or_not(list_1):
    if len(list_1) == 0:
        print("empty list")
    else:
        print(list_1)

check_if_list_is_empty_or_not(list)

check_if_list_is_empty_or_not(list_2)
```

```
[1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
empty list
```

6.Write a Python program to filter the list if the length of the character is< 4

In [27]:
```
def len_char_less_4(list):
    return [item for item in list if len(item) < 4]

strings_list = ['abc','xyz','aba','1221']
len_char_less_4(strings_list)
```

Out[27]:
```
['abc', 'xyz', 'aba']
```

7.Write a Python program to find the second largest number in a list

In [31]:
```
list_4 = [1,3,2,4,5,7,6,8,9,10]

def snd_lar_num(list):
    a = sorted(list)
    return (a[-2])

snd_lar_num(list_4)
```

Out[31]:
```
9
```

8. Write a Python program to reverse a list at a specific location

In [43]:
```
my_list = [1, 3, 2, 4, 5, 7, 6, 8, 9, 10]

def reverse_list_specific_location(list):
    num = int(input("enter a number: "))
    x = list[:num]
    y = list[num:]
    z = y[::-1]
    a = x + z

    return a

reverse_list_specific_location(my_list)
```

```
enter a number: 3
```

Out[43]:
```
[1, 3, 2, 10, 9, 8, 6, 7, 5, 4]
```

9. Write a Python program to check if a list is a palindrome or not. Return true otherwise false

In [47]:
```
 def check_palindrome_or_not(list):
        if list[::-1] == list:
            return "list is  palindrome true  "
        else:
            return "false"
test_list = [1, 4, 5, 4, 1]

check_palindrome_or_not(test_list)
```

Out[47]:
```
'list is  palindrome true  '
```

10. Write a Python a program to find the union and intersection of two lists

In [49]:
```
list1 = [1, 2, 3, 4, 5]
list2 = [4, 5, 6, 7, 8]

def intersection(list_1, list_2):
    intersection_list = []
    for item in list_1:
        if item in list_2:
            intersection_list.append(item)
    return intersection_list

intersection(list1,list2)
```

Out[49]:
```
[4, 5]
```

In [52]:
```
def union(list_1,list_2):
    union_list = []
    append_list = list_1 + list_2
    for item in append_list:
        if item not in union_list:
            union_list.append(item)

    return union_list

union(list1, list2)
```

Out[52]:
```
[1, 2, 3, 4, 5, 6, 7, 8]
```

11.Write a Python script to sort (ascending and descending) a dictionary by value

In [10]:
```
sample_dict = {'apple': 3, 'banana': 1, 'orange': 2, 'grape': 5, 'kiwi': 4}

def sorting_by_valu(list):
    return {k: v for k, v in sorted(list.items(), key=lambda item: item[1])}
```

In [12]:
```
sorting_by_valu(sample_dict)
```

Out[12]:
```
{'banana': 1, 'orange': 2, 'apple': 3, 'kiwi': 4, 'grape': 5}
```

12. Write a Python script to check whether a given key already exists in a dictionary.

In [15]:
```
sample_dict = {'apple': 3, 'banana': 1, 'orange': 2, 'grape': 5, 'kiwi': 4}

def if_key_exisit(list):
    a = input("Enter the key name: ")
    if a in list:
        print(f"{a} key already exists in the dictionary.")
    else:
        print("Key does not exist in the dictionary.")

if_key_exisit(sample_dict)
```

```
Enter the key name: apple
apple key already exists in the dictionary.
```

13.Write a Python program to sum all the values in a dictionary

In [18]:
```
sample_dict = {'apple': 3, 'banana': 1, 'orange': 2, 'grape': 5, 'kiwi': 4}

def sum_of_all_valus_in_dict(list):
    m_t_list = []
    for item in list:
        m_t_list.append(sample_dict[item])
        fainal = sum(m_t_list)

    return fainal


sum_of_all_valus_in_dict(sample_dict)
```

Out[18]:
```
15
```

14.Write a Python program to create a dictionary with a number and its corresponding square from 1 to input number. And also check if the input number is less than 10

In [21]:
```
sample_dic = {}
def square(input_num):
    if input_num <= 10:
        sample_dic[input_num] = input_num * input_num
        return sample_dic
    else:
        return ("the number should  be less than 10 ")

square(9)
```

Out[21]:
```
{9: 81}
```

15.Write a Python program to sort a given dictionary by key

In [23]:
```
sample_dict = {'apple': 3, 'banana': 1, 'orange': 2, 'grape': 5, 'kiwi': 4}

sorted(sample_dict)
```

Out[23]:
```
['apple', 'banana', 'grape', 'kiwi', 'orange']
```

16. Write a Python program to create a dictionary from a string. Note: Track the count of the letters from the string

In [27]:
```
def Track_the_count_of_the_letters(letter):
    letter_count = {}
    for x in letter:
        if x.isalpha():
            x_lower = x.lower()
            letter_count[x_lower] = letter_count.get(x_lower, 0) + 1

    return (letter_count)

Track_the_count_of_the_letters("muhammed anu rashik")
```

Out[27]:
```
{'m': 3,
 'u': 2,
 'h': 2,
 'a': 3,
 'e': 1,
 'd': 1,
 'n': 1,
 'r': 1,
 's': 1,
 'i': 1,
 'k': 1}
```

17. Write a Python program to get the top three items in a shop

In [29]:
```
myDict = {'item1': 45.50, 'item2':35, 'item3': 41.30, 'item4':55, 'item5': 24}

def get_top_three_items(list1):
    resultList = list(list1.values())
    x = sorted(resultList)
    return (x[2:])

get_top_three_items(myDict)
```

Out[29]:
```
[41.3, 45.5, 55]
```