In [3]:
```
# Task 1 : Write a function to count the number of vowels and consonants
#          in a given string.

def count_vowel_consonant(st):

  vowels = {'a','e','i','o','u'}
  count_vowels = 0
  count_consonants = 0
  for char in st:
     if char.lower() in vowels:
      count_vowels += 1
     elif char.isalpha():
      count_consonants += 1
  return count_vowels,count_consonants

st = input("Enter a string: ")
vowel,consonants = count_vowel_consonant(st)
print("Vowels are: ",vowel)
print("Consonants are: ",consonants)
```

```
Enter a string: hello WORLD
Vowels are:  3
Consonants are:  7
```

In [ ]:
```
# Task 2 :  Write a function to return the minimum and maximum elements
#           from a tuple

def min_max_tuple(t):
  return min(t),max(t)

input_tuple = (4,8,1,10,3,5)
min_max_value = min_max_tuple(input_tuple)
print("The minimum and maximum value in tuple is:",min_max_value)
```

```
The minimum and maximum value in tuple is: (1, 10)
```

In [ ]:
```
# Task 3 : Write code to unpack the first two elements and
#          the rest from a tuple of unknown length

unpack_tuple = (2,"red",3,5,1,7,"Python",8,"Task")

(first , second , *rest) = unpack_tuple

print("The first element in tuple is:",first)
print("The second element in tuple is:",second)
print("The rest of the element in tuple is:",rest)
```

```
The first element in tuple is: 2
The second element in tuple is: red
The rest of the element in tuple is: [3, 5, 1, 7, 'Python', 8, 'Task']
```

In [ ]:
```
# Task 4 : Write a function that takes a string and
#          returns the frequency of each word

def frequency_word(statement):
```

```
  statement = statement.lower()
  words = statement.split()
  frequency = {}

  for key in words:
    if key in frequency:
      frequency[key] += 1
    else:
      frequency[key] = 1
  return frequency

task_string = input("Enter the string:")
print(frequency_word(task_string))
```

```
Enter the string:Hello WORLD hello Python to the world
{'hello': 2, 'world': 2, 'python': 1, 'to': 1, 'the': 1}
```

In [2]:
```
# Task 5 : Write a function to find duplicate elements in a list.

def duplicate_element(input_list):
  single = set()
  duplicate = set()

  for i in input_list:
    if i in single:
      duplicate.add(i)
    else:
      single.add(i)
  return list(duplicate)

task_list = [1, 2, 5, 2, 7, 4, 9, 7, 1, 6, 3]
print(duplicate_element(task_list))
```

```
[1, 2, 7]
```

In [ ]:
```
# Task 6 : Use a filter with a lambda function to extract
#          even numbers from a list.

numbers = [10, 15, 20, 25, 30]
x = filter(lambda a: a % 2 == 0, numbers)
print("The even numbers from the list are:",list(x))
```

```
The even numbers from the list are: [10, 20, 30]
```

In [ ]:
```
# Task 7 : Create a Python module named mymath.py with functions
#          for addition, subtraction, and multiplication. Import and use it.

import mymath

print("The addition of numbers is:",mymath.add(5, 3))
print("The subtraction of numbers is:",mymath.subtraction(10, 4))
print("The Multiplication of numbers is:",mymath.multiply(6, 7))
```

```
The addition of numbers is: 8
The subtraction of numbers is: 6
The Multiplication of numbers is: 42
```

In [ ]:
```python
# Task 8 :  Sort a List of Tuples Based on the Second Element

def sort_tuple_second_element(lst):

  n = len(lst)
  for i in range(n):
    for j in range(0, n - i -1):
      if(lst[j][1] > lst[j+1][1]):
        temp = lst[j]
        lst[j] = lst[j + 1]
        lst[j + 1] = temp
  return lst


my_list = [(2, 7), (3, 2), (7, 4), (4, 5)]
sort_list = sort_tuple_second_element(my_list)

print("Sorted list:", sort_list)
```

```
Sorted list: [(3, 2), (7, 4), (4, 5), (2, 7)]
```

In [ ]:
```python
# Task 9 : Write a function to find the symmetric difference
 #         (elements not common) between two sets.

def symmetric_difference(set1 , set2):
  return set1 ^ set2
# ^ --> this is the operator used to find exclusive elements between two sets
#       this gives output of elements that are not common in both sets.

input_set1 = {1,2,4,6,8,9,12}
input_set2 = {2,3,6,9,10,4,5}
print("The symmetric difference between two sets are:",symmetric_difference(ir
```

```
The symmetric difference between two sets are: {1, 3, 5, 8, 10, 12}
```

In [ ]:
```python
# Task 10 : Write a function that returns a list of prime numbers
#           up to a given number n.

def list_prime_numbers(number):
  prime_number = []
  for num in range(2,number + 1):
    for i in range(2,num):
      if(num % i == 0):
        break
    else:
      prime_number.append(num)
  return prime_number

task_number = int(input("Enter a number:"))
PrimeNumbers = list_prime_numbers(task_number)
```

```
print("The Prime Numbers till given number {} are:".format(task_number),PrimeN
```

```
Enter a number:10
The Prime Numbers till given number 10 are: [2, 3, 5, 7]
```

In [ ]: