TASK 2 : PYTHON DEVELOPER.

➔ CODING .....

9. Determine if a number is a prime number.

```
-> def is_prime(n):
    if n <= 1:
        return False
    if n == 2:
        return True
    if n % 2 == 0:
        return False
    for i in range(3, int(n**0.5) + 1, 2):
        if n % i == 0:
            return False
    return True
```

Output: print(is_prime(29)) # True

print(is_prime(10)) # False

10. Find the Sum of the digits in a number.

```
-> def sum_of_digits(n):
    return sum(int(digit) for digit in str(abs(n)))
```

Output: print(sum_of_digits(1234)) # 10

print(sum_of_digits(-567)) # 18

11. Calculate the Least Common Multiple (LCM) and Greatest Common Divisor (GCD) of two integers.

```
-> import math


def lcm_and_gcd(a, b):
   gcd = math.gcd(a, b)
   lcm = abs(a * b) // gcd
   return lcm, gcd


Output: print(lcm_and_gcd(12, 18))  # (36, 6)
print(lcm_and_gcd(7, 5))    # (35, 1)
```

12. Reverse a given list without using built-in Functions.

```
-> def reverse_list(lst):
   n = len(lst)
   for i in range(n // 2):
      lst[i], lst[n - 1 - i] = lst[n - 1 - i], lst[i]
   return lst


Output: print(reverse_list([1, 2, 3, 4, 5]))  # [5, 4, 3, 2, 1]
```

13. Sort a list of numbers in ascending order.

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

```
            lst[j], lst[j + 1] = lst[j + 1], lst[j]
    return lst
```

Output: print(sort_list([5, 2, 9, 1, 5, 6])) # [1, 2, 5, 5, 6, 9]

14. Remove duplicates elements from a list.

```
-> def remove_duplicates(lst):
    unique = []
    for item in lst:
        if item not in unique:
            unique.append(item)
    return unique
```

Output: print(remove_duplicates([1, 2, 2, 3, 4, 4, 5])) # [1, 2, 3, 4, 5]

15. Find the lengthof a string without using the len() functions.

```
-> def string_length(s):
    count = 0
    for _ in s:
        count += 1
    return count
```

Output: print(string_length("hello world")) # 11

16. Count the number of vowels and consonants in a string.

```
-> def count_vowels_consonants(s):
    vowels = set('aeiouAEIOU')
```

```
    vowel_count = 0
    consonant_count = 0
    for char in s:
        if char.isalpha():
            if char in vowels:
                vowel_count += 1
            else:
                consonant_count += 1
    return vowel_count, consonant_count
```

Output: print(count_vowels_consonants("Hello World")) # (3, 7)