……………………………………………………………………Assignment…………………………………………………………………….

1. Write a Python program to Count all letters, digits, and special symbols from the given

string Input = “P@#yn26at^&i5ve”

def count\_characters(input\_string): #defining the function

letters = 0

digits = 0

special\_symbols = 0

for char in input\_string:

if char.isalpha():

letters += 1

elif char.isdigit():

digits += 1

else:

special\_symbols += 1

return letters, digits, special\_symbols

input\_string = "P@#yn26at^&i5ve"

letters, digits, special\_symbols = count\_characters(input\_string)

print("Letters:", letters)

print("Digits:", digits)

print("Special Symbols:", special\_symbols)

output: Letters: 8

Digits: 3

Special Symbols: 4

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2. Write a Python program to remove duplicate characters of a given string.

Input = “String and String Function”

def remove\_duplicates(input\_string):

result = "" # Initialize an empty string to store the

result

for char in input\_string: # Iterate through each character in the

input string

if char not in result: # Check if the character is not already

in the result string

result += char # If not, add it to the result string

return result

input\_string = "String and String Function"

output\_string = remove\_duplicates(input\_string)

print("Original String:", input\_string)

print("String after removing duplicates:", output\_string)

output: Original String: String and String Function

String after removing duplicates: String adFuco

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3. Write a Python program to count Uppercase, Lowercase, special character and numeric values in a given string

Input = “Hell0 W0rld ! 123 \* # welcome to pYtHoN”

def count\_characters(input\_string):

# Initialize counters for uppercase, lowercase, digits, and special characters

uppercase\_count = 0

lowercase\_count = 0

digit\_count = 0

special\_count = 0

for char in input\_string: # Iterate through each character in the

input string

if char.isupper(): # Check if the character is uppercase

uppercase\_count += 1

elif char.islower(): # Check if the character is lowercase

lowercase\_count += 1

elif char.isdigit(): # Check if the character is a

digit

digit\_count += 1

# If the character is none of the above, consider it a special character

else:

special\_count += 1

return uppercase\_count, lowercase\_count, digit\_count, special\_count

input\_string = "Hell0 W0rld ! 123 \* # welcome to pYtHoN"

uppercase\_count, lowercase\_count, digit\_count, special\_count = count\_characters(input\_string)

print("Uppercase Count:", uppercase\_count)

print("Lowercase Count:", lowercase\_count)

print("Digit Count:", digit\_count)

print("Special Character Count:", special\_count)

output: Uppercase Count: 5

Lowercase Count: 18

Digit Count: 5

Special Character Count: 11

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4. Write a Python Count vowels in a string

input= “Welcome to Python Assignment”

def count\_vowels(input\_string):

vowels = {'a', 'e', 'i', 'o', 'u'} # Define a set of vowels

vowel\_count = 0 # Initialize a counter for vowels

for char in input\_string: # Iterate through each character in the

input string

if char.lower() in vowels: # Check if the character is a vowel

(case insensitive)

vowel\_count += 1

return vowel\_count

input\_string = "Welcome to Python Assignment"

vowel\_count = count\_vowels(input\_string)

print("Number of vowels in the string:", vowel\_count)

output: Number of vowels in the string: 8

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