**Q1 . Write a Python program to Count all letters, digits, and special symbols from the given string Input = “P@#yn26at^&i5ve” Output: Chars = 8 Digits = 2 Symbol = 3**

def count\_characters(input\_string):

chars = digits = symbols = 0

for ch in input\_string:

if ch.isalpha():

chars += 1

elif ch.isdigit():

digits += 1

else:

symbols += 1

print(f"Chars = {chars}")

print(f"Digits = {digits}")

print(f"Symbols = {symbols}")

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

count\_characters(input\_string)

**OUTPUT:**

Chars = 8

Digits = 3

Symbols = 4

**Q2. . Write a Python program to remove duplicate characters of a given string. Input = “String and String Function” Output: String and Function**

def remove\_duplicates(input\_string):

result = []

for ch in input\_string:

if ch not in result:

result.append(ch)

return ''.join(result)

input\_string = "String and String Function"

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

print(output\_string)

**OUTPUT:**

String and Function

**Q3. Write a Python program to count Uppercase, Lowercase, special character and numeric values in a given string Input = “Hell0 W0rld ! 123 \* # welcome to pYtHoN” Output: UpperCase : 5 LowerCase : 18 NumberCase : 5 SpecialCase : 11**

def count\_cases(input\_string):

upper\_case = lower\_case = number\_case = special\_case = 0

for ch in input\_string:

if ch.isupper():

upper\_case += 1

elif ch.islower():

lower\_case += 1

elif ch.isdigit():

number\_case +=1

else:

special\_case += 1

print(f"UpperCase: {upper\_case}")

print(f"LowerCase: {lower\_case}")

print(f"NumberCase: {number\_case}")

print(f"SpecialCase: {special\_case}")

input\_string = "Hell0 W0rld ! 123 \* # welcome to pYtHoN" count\_cases(input\_string)

**OUTPUT:**

UpperCase: 5

LowerCase: 18

NumberCase: 5

SpecialCase: 11

**Q4. Write a Python Count vowels in a string input= “Welcome to Python Assignment” Output: Total vowels are: 8**

def count\_vowels(input\_string):

vowels = "aeiouAEIOU"

count = sum(1 for ch in input\_string if ch in vowels)

print(f"Total vowels are: {count}")

input\_string = "Welcome to Python Assignment" count\_vowels(input\_string)

**OUTPUT:**

Total vowels are: 8