CYCLE-1

Expt. No. 4 Page No. 9

Expt. Name. Count the special character, alphabets, digits, lowercase, char Date : 07-01-2021

Aim:

To write a program on counting the special character, alphabets, digits, lowercase and uppercase character

Algorithm:

step 1 : start
step 2: Get the string input from the user
step 3: initialize upper, lower, special_char and digit to zero
step 4: for loop for the length of the string
step 4.1 : check if the char is between A and Z, then increment upper to one else go to step 4.2
step 4.2 : check if the char is between a and z, then increment lower to one else go to step 4.3
step 4.3 : check if the char is between 0 to 9, then increment digit to one else increment special_char to 1
step 5: print upper, lower, special_char, digit, Alphabets
step 6: stop

Program:

```
def count_char(str):
    upper, lower, special_char, digit = 0,0,0,0
    for i in range(len(str)):
        if str[i]>='A' and str[i]<='Z':
            upper = upper+1
        elif str[i]>='a' and str[i]<='z':
            lower = lower+1
        elif str[i]>='0' and str[i]<='9':
```

```
            digit = digit + 1
        elif str[i] != ' ':
            special_char = special_char + 1
    print("Upper case chars : ", upper)
    print ("Lower case chars : ", lower)
    print ('special chars: ', special_char)
    print ("Digits : ", digit)
    print ("Alphabets : ", upper + lower)
str = input()
count_chars (str)
```

Result:

The above program is executed successfully and the output is attached.

Expt. No. 5 Page No. 11

Expt. Name. Wrap the string into a paragraph of width Date : 07-01-2022

Aim:

To write a python program for given input string (s) and width(w). Wrap the string into a paragraph of width w.

Algorithm:

step 1: start
step 2: import textwrap library
step 3: Get the string input from the user
step 4: Get the width input from the user
step 5: print the output using .fill function
step 6: Stop

Program:

```
import textwrap
s = input("Input a string:")
w = int(input("Input the width of the paragraph:").strip())
print("Result:")
print(textwrap.fill(s,w))
```

Result:

The above code is executed successfully and the output is attached.

Expt. No. 6 Page No. 12

Expt. Name. Print a string, matrix size NxM, should use !, and - Date : 07-01-2022

Aim:

To write a python program to print the string "Welcome", Matrix size should NXM, where N is odd number and M is 3 times of N). The design should have 'Welcome' in the center. The design should have only use !, . and - characters

Algorithm:

step 1: start

step 2: Get the string input from the user

~~n, m = map(int, input("value of n and m:").split())~~

step 3: Get the value of n and m from the user

step 4: Calculate the pattern

step 5: print the pattern

step 6: Stop

Program:

```
a= int(input("Enter the string:"))
n, m = map(int, input("value of n m:").split())
pattern = [('!,.' * (2*i+1)).center(m, '-') for i in range(n//2)]
print('\n'.join(pattern + [a.center(m, '-')] + pattern[::-1]))
```

Result:

The above code is executed successfully and the output is attached.

Output:

4.Count the special characters, alphabets, digits, lowercase and uppercase characters.

```
#4.Count the special characters, alphabets, digits, lowercase and uppercase characters.
def count_chars(str):
  upper,lower,special_char,digit=0,0,0,0
  for i in range (len(str)):
    if str[i]>='A' and str[i]<='Z':
      upper=upper+1
    elif str[i]>='a' and str[i]<='z':
      lower=lower+1
    elif str[i]>='0' and str[i]<='9':
      digit=digit+1
    elif str[i]!=' ':
      special_char=special_char+1
  print("Upper Case chars : ",upper)
  print("Lower Case chars : ",lower)
  print("Special chars : ",special_char)
  print("Digits : ",digit)
  print("Alphabets : ",upper+lower)
str=input()
count_chars(str)
```

```
Sathyabama 2019 @
Upper Case chars :  1
Lower Case chars :  9
Special chars :  1
Digits :  4
Alphabets :  10
```

5. For given Input String (s) and Width (w). Wrap the string into a paragraph of width w.

```
#5. For given Input String (s) and Width (w). Wrap the string into a paragraph of width w.
import textwrap
s=input("Input a string: ")
w = int(input("Input the width of the paragraph: ").strip())
print("Result: ")
print(textwrap.fill(s,w))
```

```
Input a string: sathyabama
Input the width of the paragraph: 3
Result:
sat
hya
bam
a
```

6. Print of the String "Welcome".Matrix size must be N X M. (N is an odd natural number, and M is 3 times N).

```
#6 Print of the String "Welcome". Matrix size must be N X M. ( N is an odd natural number, and
#M is 3 times N.).
a=input('Enter the string:')
n, m = map(int,input("value of n m:").split())
pattern = [('|,.'*(2*i + 1)).center(m, '-') for i in range(n//2)]
print('\n'.join(pattern + [a.center(m, '-')] + pattern[::-1]))
```

```
Enter the string:Welcome
value of n m:10 20
--------|,.---------
-----|,.|,.|,.------
--|,.|,.|,.|,.|,.---
|,.|,.|,.|,.|,.|,.|,.
|,.|,.|,.|,.|,.|,.|,.|,.
------Welcome-------
|,.|,.|,.|,.|,.|,.|,.|,.
|,.|,.|,.|,.|,.|,.|,.
--|,.|,.|,.|,.|,.---
-----|,.|,.|,.------
--------|,.---------
```