Ex.No.6	Text Processing using String in python	Reg.No: URK23CS1261
13.3.24		

6 A) Write a Python program that accepts a comma separated sequence of words as input and prints the unique words in sorted form (alphanumerically).

Sample Input: red, black, pink, green

Sample Output: black, green, pink, red

Aim: The objective of this program is to print unique words in sorted form.

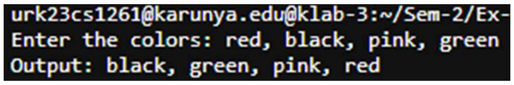
Algorithm:

```
Step 1: Start the program.
Step 2: Prompt the user to enter a list of colors separated by commas and store it in the variable 'colors'.
Step 3: Split the 'colors' string using the split(',') method and store the result in the list 'order1'.
Step 4: Use a list comprehension to strip leading and trailing spaces from each item in 'order1'.
Step 5: Convert 'order1' into a set to remove duplicate colors.
Step 6: Convert the set 'order1' back into a list to maintain the order of colors.
Step 7: Sort the list 'order1' alphabetically.
Step 8: Print "Output: " without a newline.
Step 9: Print each item in 'order1' separated by a comma and a space.
Step 10: End the program.
```

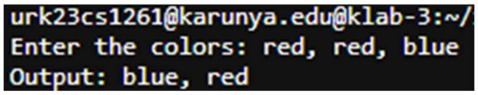
Program:

```
colors = input("Enter the colors: ").split(",")
order1 = [x.strip() for x in colors]
order1 = set(order1)
order1 = list(order1)
order1.sort()
print("Output: ", end ="")
print(*order1, sep=", ")
print("╔═══════════════╗\n║    Tanvik     ║\n║ URK23CS1261 ║\n╚═══════════════╝")
```

Output:



```
urk23cs1261@karunya.edu@klab-3:~/Sem-2/Ex-
Enter the colors: red, black, pink, green
Output: black, green, pink, red
```



```
urk23cs1261@karunya.edu@klab-3:~/
Enter the colors: red, red, blue
Output: blue, red
```

Result: Thus, The program has successfully produced the desired output.

6 B) Write a python program to built-in string validation methods for basic data. It can check if a string is composed of alphabetical characters, alphanumeric characters, digits, etc.

Aim: The objective of this program is to string validation with alphabetical characters, alphanumeric characters, digits

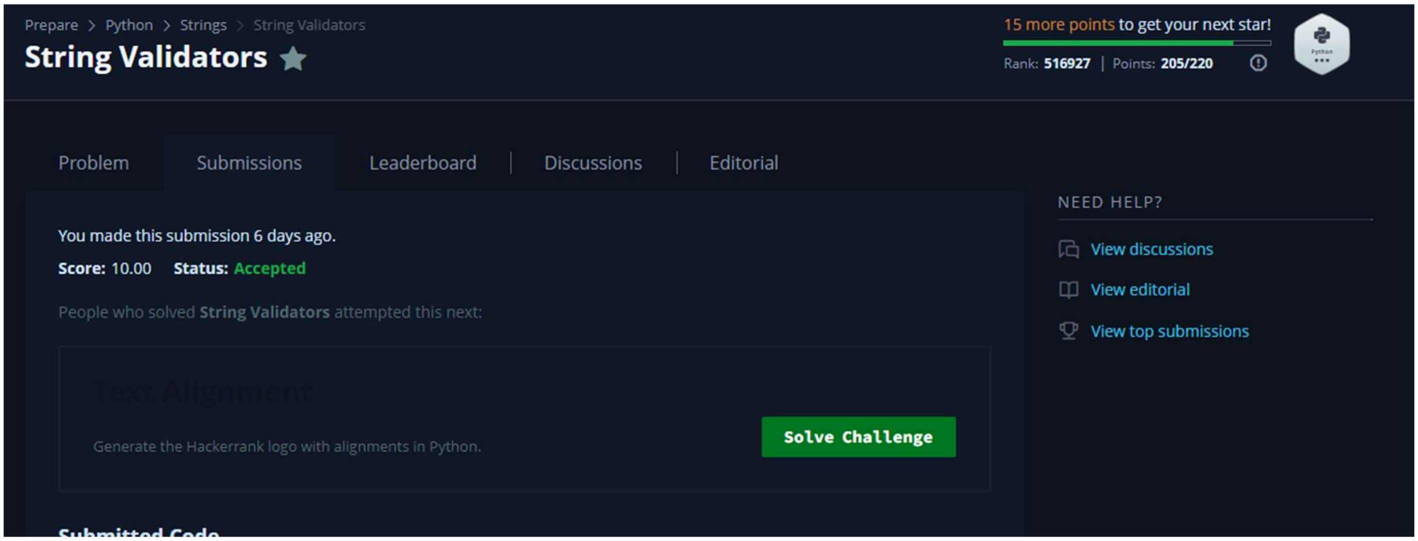
Algorithm:

```
Step 1: Start the program.
Step 2: Define a string variable 's' containing the input string 'qA2'.
Step 3: Initialize boolean variables 'isal', 'isalno', 'isdi', 'islow', and 'isup' to False.
Step 4: Iterate through each character 'x' in the string 's' using a for loop.
    Step 4.1: Check if the character 'x' is alphanumeric using the 'isalnum()' method.
        - If True, set 'isalno' to True.
    Step 4.2: Check if the character 'x' is alphabetic using the 'isalpha()' method.
        - If True, set 'isal' to True.
    Step 4.3: Check if the character 'x' is a digit using the 'isdigit()' method.
        - If True, set 'isdi' to True.
    Step 4.4: Check if the character 'x' is a lowercase letter using the 'islower()' method.
        - If True, set 'islow' to True.
    Step 4.5: Check if the character 'x' is an uppercase letter using the 'isupper()' method.
        - If True, set 'isup' to True.
Step 5: Print the boolean values of 'isalno', 'isal', 'isdi', 'islow', and 'isup' separated by newlines.
Step 6: End the program.
```

Program:

```
if __name__ == '__main__':

    s = 'qA2'
    isal = False
    isalno = False
    isdi = False
    islow = False
    isup = False

    for x in s:
        if x.isalnum() == True:
            isalno = True
        if x.isalpha() == True:
            isal = True
        if x.isdigit() == True:
            isdi = True
        if x.islower() == True:
            islow = True
        if x.isupper() == True:
            isup = True

    print(isalno,isal, isdi, islow, isup, sep='\n')

print("╔═══════════════╗\n║   Tanvik    ║\n║ URK23CS1261 ║\n╚═══════════════╝")
```

Output:



Prepare > Python > Strings > String Validators

String Validators ★

15 more points to get your next star!

Rank: 516927 | Points: 205/220

You made this submission 6 days ago.

Score: 10.00 Status: Accepted

People who solved **String Validators** attempted this next:

Text Alignment

Generate the Hackerrank logo with alignments in Python.

NEED HELP?

Submitted Code

Result: Thus, The program has successfully produced the desired output.

6 C) Write a Python program to find characters count of a string which are passed as list.
Input: St= “hello welcome” lst = [“l”, “w”, “m”, “e”]
Output:

```
 l 3
w 1
m 1
e 3.
```

Aim: The objective of this program is to find characters count of a string.

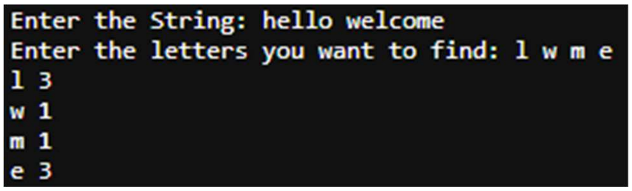
Algorithm:

```
Step 1: Start the program.
Step 2: Prompt the user to enter a string and store it in the variable 'string'.
Step 3: Prompt the user to enter a list of letters to find in the string, separated by spaces, and store it in the variable 'list1'.
Step 4: Strip leading and trailing spaces from 'list1' and split it into a list using the split(" ") method. Store the result in 'list1'.
Step 5: Create an empty list 'list2' to store the counts of each letter from 'list1' found in the string.
Step 6: Iterate over each letter 'x' in 'list1'.
    Step 6.1: Count the occurrences of the current letter 'x' in the string using the count() method and store the count in 'list2'.
Step 7: Iterate over each letter 'letter' and its corresponding count 'no' using the zip() function on 'list1' and 'list2'.
    Step 7.1: Print the letter 'letter' and its count 'no' in the format "{letter} {no}".
Step 8: End the program.
```

Program:

```
string = input("Enter the String: ")
list1 = (input("Enter the letters you want to find: ").strip()).split(" ")
list2 = [string.count(x) for x in list1]
for letter, no in zip(list1,list2):
    print(f"{letter} {no}")
print("╔══════════════════╗\n║   Tanvik    ║\n║ URK23CS1261 ║\n╚══════════════════╝")
```

Output:



```
Enter the String: hello welcome
Enter the letters you want to find: l w m e
l 3
w 1
m 1
e 3
```

Result: Thus, The program has successfully produced the desired output.

6 D) Write a Python program to find the first appearance of the substring 'not' and 'bad' from a given string, if

'not' follows the 'bad', replace the whole 'not'...'bad' substring with 'good'. Return the resulting string.
Sample Input :
The song is not that bad!
The song is poor!
Sample Output:
The song is good!
The song is poor!

Aim: The objective of this program is to find the first appearance of the substring and modify it.

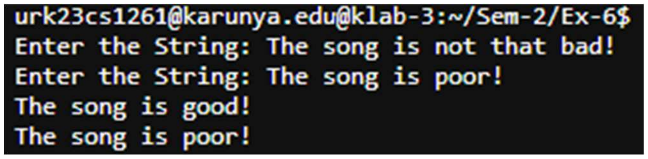
Algorithm:

```
Step 1: Start the program.
Step 2: Prompt the user to enter two strings separated by spaces and store them in 'string1' and 'string2' respectively.
Step 3: Strip leading and trailing spaces from each input string and split them into lists of words using the split(" ")
method. Store the results in 'string1' and 'string2'.
Step 4: Iterate over each string (string1 and string2) using a loop.
    Step 4.1: Iterate over each word 'x' in the current string using a loop ranging from 0 to the length of the string.
        Step 4.1.1: Check if the current word 'x' is equal to 'not'.
            - If true, check if the word two positions ahead (x+2) is 'bad!'.
                - If true, replace 'not' with 'good!', remove 'bad!' and the word after 'not' by setting them to empty strings.
    Step 4.2: Print the modified string after processing all the words.
Step 5: End the program.
```

Program:

```
string1 = (input("Enter the String: ").strip()).split(" ")
string2 = (input("Enter the String: ").strip()).split(" ")
for string in [string1, string2]:
    for x in range(0, len(string)):
        if string[x] == 'not':
            if string[x+2] == 'bad!':
                string[x] = 'good!'
                string[x+2] = ''
                string[x+1] = ""
    print(*string)
print("╔═══════════════════╗\n║    Tanvik    ║\n║ URK23CS1261 ║\n╚═══════════════════╝")
```

Output:

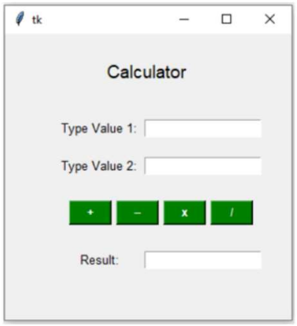


```
urk23cs1261@karunya.edu@klab-3:~/Sem-2/Ex-6$
Enter the String: The song is not that bad!
Enter the String: The song is poor!
The song is good!
The song is poor!
```

Result: Thus, The program has successfully produced the desired output.

Ex.No.7	Graphical User Interface	Reg.No: URK23CS1261
20.3.24		

7 A) Create a GUI application to design a simple calculator or a convertor as given below.



Aim: The objective of this program is to design a simple calculator or a convertor.

Algorithm:

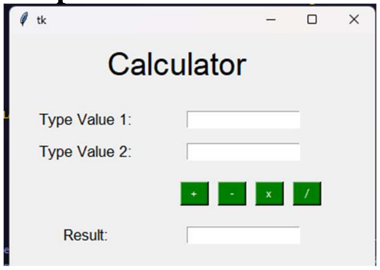
Step 1: Start the program.
Step 2: Create a tkinter window with dimensions 400x400.
Step 3: Create functions for addition, subtraction, multiplication, and division operations.
Step 4: Inside each function, retrieve values from entry widgets, perform the respective operation, and display the result in another entry widget.
Step 5: Create labels and entry widgets for inputting values and displaying results.
Step 6: Create buttons for each operation (+, -, *, /) and bind them to their respective functions.
Step 7: Place all widgets (labels, entry widgets, and buttons) using grid layout manager.
Step 8: Run the main loop to start the tkinter application.

Program:

```
from tkinter import *
main = Tk()
main.geometry("400x400")
def add():
    print('add')
    var1 = int(labl2_var.get())
    var2 = int(labl3_var.get())
    result_var = var1+var2
    entr3.delete(0, END)
    entr3.insert(0, result_var)

def sub():
    var1 = int(labl2_var.get())
    var2 = int(labl3_var.get())
    result_var = var1-var2
    entr3.delete(0, END)
    entr3.insert(0, result_var)

def mul():
    var1 = int(labl2_var.get())
    var2 = int(labl3_var.get())
    result_var = var1*var2
    entr3.delete(0, END)
    entr3.insert(0, result_var)

def div():
    var1 = int(labl2_var.get())
    var2 = int(labl3_var.get())
    try:
        result_var = var1/var2
    except ZeroDivisionError:
        print("Error /0")
    else:
        entr3.delete(0, END)
        entr3.insert(0, result_var)

labl1 = Label(master=main, text="Calculator", font=("Arial",26))
labl1.grid(row=0, column=0,padx=2,pady=10)

Frame1 = Frame(master=main)
Frame1.grid(row=1, column=0, sticky='nsew', padx=10, pady=10)

labl2 = Label(master=Frame1, text="Type Value 1:", font=("Arial",13))
labl2.grid(row=1, column=0,padx=20,pady=5)

labl3 = Label(master=Frame1, text="Type Value 2:", font=("Arial",13))
labl3.grid(row=2, column=0,padx=20,pady=5)

labl2_var = StringVar()
entr1 = Entry(master=Frame1, textvariable=labl2_var)
entr1.grid(row=1, column=1,padx=10,pady=5)

labl3_var = StringVar()
entr2 = Entry(master=Frame1, textvariable=labl3_var)
entr2.grid(row=2, column=1,padx=10,pady=5)
Frame1.rowconfigure(7, weight=1)
Frame2 = Frame(master=Frame1)
Frame2.grid(row=3, column=1, sticky='nsew', padx=10, pady=10)

but1 = Button(master=Frame2, text='+',bg='green', fg='white', width=3, height=1, command=add)
but2 = Button(master=Frame2, text='-',bg='green', fg='white', width=3, height=1, command=sub)
but3 = Button(master=Frame2, text='x',bg='green', fg='white', width=3, height=1, command=mul)
but4 = Button(master=Frame2, text='/',bg='green', fg='white', width=3, height=1, command=div)

but1.grid(row=0, column=0,padx=(20,5),pady=5)
but2.grid(row=0, column=1,padx=5,pady=5)
but3.grid(row=0, column=2,padx=5,pady=5)
but4.grid(row=0, column=3,padx=5,pady=5)

res = Label(master=Frame1, text="Result:", font=("Arial",13))
res.grid(row=4, column=0,padx=20,pady=5)

entr3 = Entry(master=Frame1)
```

```
entr3.grid(row=4, column=1,padx=10,pady=5)

main.mainloop()
print("╔══════════════════╗\n║   Tanvik   ║\n║ URK23CS1261 ║\n╚══════════════════╝")
```

Output:



Result: Thus, The program has successfully produced the desired output.