

# VASAVI COLLEGE OF ENGINEERING

(AUTONOMOUS)  
(Affiliated to Osmania University)  
Hyderabad - 500 031.

DEPARTMENT OF : CSE

NAME OF THE LABORATORY : PP LAB

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## PRELAB QUESTION 4

1) What are collections in python? Give What are strings in python?

A: Collections is a built-in module that implements specialized container datatypes providing alternatives to python's general purpose built-in containers such as dict, list, set, and tuple:

Python string datatype is a sequence made up of one (or) more individual characters; where a character could be a letter, digit, whitespace or any other symbol.

2) What are string traversal techniques in python? Give with the examples:

A: A string can be traversed by accessing characters from one index to another. For example:

### String traversal using indexing

msg = "Hello!"

i = 0

for j in msg:  
 print("msg[", i, "] = ", j)

i = i + 1

O/P:

msg[0] = H

msg[1] = e

msg[2] = l

msg[3] = l

msg[4] = o

msg[5] = !

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3) What are string search methods? Give examples.

A: Strings are an example of objects that contains data as well as functions to manipulate that data.

String methods are invoked only on string objects.

Ex: Capitalize(), center, count, find, index, rfind(), etc.

## PRELAB PROGRAMS:

1) Write a program to display the characters of a string one letter per line.

\* `s=input("Enter a string.")` { O/P: Enter a string: Divani  
for i in s:  
    print(i)

S  
i  
v  
a  
n  
i

2) WAP to transverse the string in the reverse order:

\* ~~`s=input("Enter a string")  
t = ""  
for i in s:  
    t = t + (len(s)-i)  
print("Reversed=", t)`~~

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2) WAP to traverse the string in the reverse order.

\*  $s = \text{input}("Enter a string:")$

$t = " " ; i = \text{len}(s)$ .

while  $\text{len}(s) >= 0$  :

~~$t += s[\text{len}(s) - 1]$~~

$t += s[i - 1]$

$i = i - 1$

$\text{print}("Reversed string = ", t)$

O/P:

Enter a string: Sivani  
Reversed string = inavioS.

3) WAP to check whether a particular letter is present in the string or not.

\*  $\text{import re}$   
 $s = \text{input}("Enter a string:")$

$a = \text{input}("Enter a character to be checked")$

~~$\text{if } \text{re.search}(a, s):$~~

$\text{if } \text{re.search}(a, s):$   
 $\text{print}("character is present in the string")$

$\text{else:}$   
 $\text{print}("character is not present in the string")$

O/P:

Enter a string: Python

Enter a character to be checked: a

Character is not present in the string.

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4) WAP to count the number of words in the given string:

\* ~~S =~~ input("Enter a string"); count = 0 } O/P:

for i in S:

if i == " ":

count += 1

print("No. of words =", count)

Enter a string:

Python Programming

No. of words = 2.

5) WAP to implement string operations:

\* s1 = input("Enter a string") } O/P:

s2 = input("Enter another string") } Enter a string: Indra

print("Concatenation =", s1 + s2) } Enter another string:

print(s1[0: len(s1) - 2]) } Concatenation: Indra-Sivani

print(s2 \* 2) } Indri

Sivanidivani

6) WAP to remove special characters in the string.

s1 = input("Enter a string") } O/P:

s2 = "\*!@#\$" } Enter a string: \$Sivani@#

for i in s2:

s1 = s1.replace(i, '') } Sivani

print(s1)

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## LAB PROGRAMS: 4.

\* AIM: To illustrate : strings, string methods & functions.

1) WAP to check if given string is palindrome (or) not.

\* def rev(s1):

    s2 = s1

    s = s1[ :: -1 ]

    if s == s2 :

        print("Given string is a PALINDROME")

    else: print("Given string is not a PALINDROME")

a = input("Enter a string:")

rev(a).

### Output:

1) Enter a string: sivani  
Given string is not a PALINDROME.

2) Enter a string: abccba

Given string is a PALINDROME.

3) WAP to find frequency of each character in the given string:

\* def freq(c,s):

    count = 0

    for i in s:

        if (i == c):

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```
Count+=1
return Count

x=input("Enter a character:")
y=input("Enter a string:")
print("Frequency =", freq(x,y))
```

Output:

Enter a character: a  
Enter a string: sivani  
Frequency = 1

3) WAP to replace a word with another in given sentence:

\* import re

```
def replace(s,r,p):
    print(re.sub(p,r,s))
```

```
s=input("Enter a string:")
r=input("Enter the word:")
p=input("Enter the word to be replaced:")
replace(s,r,p)
```

Output:

Enter a string: She sells sea shells on the sea shore.

Enter the word: ocean

Enter the word to be replaced: sea

She sells ocean shells on the ocean shore.

4) WAP to count the no. of vowels, consonants & question marks in the given string:

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\* def cnt(s):  
    t=0; a=0; b=0  
    p=['a','e','i','o','u']['A','E','I','O','U']  
    for i in s:  
        if i in p:  
            t+=1  
        elif i not in p and (i>='A' and i<='Z') or (i>='a' and i<='z'):  
            a+=1  
        elif i=='?':  
            b+=1  
        else:  
            pass  
    print("No. of vowels =", t)  
    print("No. of consonants =", a)  
    print("Question marks =", b)  
  
x=input("Enter a string:")  
cnt(x).

\* Output:  
Enter a string: Sivani??  
No. of vowels = 3  
No. of consonants = 3  
Question marks = 2.

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5) Let fruit = "apples" be a string. What will be the output for the following:

- a) len(fruit) = 6
- b) fruit[0:4] = appl
- c) fruit[6] = error
- d) fruit[-4] = p

6) Implement a python function that accepts a string & calculate the no. of upper and lower case letters:

\* def cnt(s):

    c1 = 0; c2 = 0

    for i in s:

        if i >= 'A' and i <= 'Z':

            c1 += 1

        elif i >= 'a' and i <= 'z':

            c2 += 1

    else:

        pass

    print("Upper case letters =", c1)

    print("Lower case letters =", c2)

a = input("Enter a string:")

cnt(a)

Output:

Enter a string: Sivani

Uppercase letters = 2

Lower case letters = 4

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7) WAP to validate your name and PAN no.

\* S = input ("Enter your name:")

if S.isalpha():  
print ("Valid")

else: print ("Not Valid")

p = input ("Enter your PAN No.")

if p.isalnum():  
print ("Valid")

else: print ("Not valid")

o/p:

Enter your name: Sivani  
Valid

Enter your PAN No: ABC12345  
Valid

8) WAP to count no. of digits; uppercase, lowercase characters & special characters in a given string.

\* S = input ("Enter a string")

d = 0; uc = 0; lc = 0; ch = 0.

for i in s:

if i >= '0' and i <= '9':

d += 1

elif i >= 'A' and i <= 'Z':

uc += 1

elif i >= 'a' and i <= 'z':

lc += 1

else:

ch += 1

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```
print ("Digits = ", d)
print ("Upper case letters = ", uc)
print ("Lower case letters = ", lc)
print ("Characters = ", ch)
```

{ Output:  
Enter a string: Sivani7||  
Digits = 1  
Upper case letters = 1  
Lower case letters = 5  
Characters = 2.

Q) WAP that encrypts a message by adding a key value to every character.

```
* s = input ("Enter a string:")
k = int(input ("Enter a key value:"))
for i in s:
    x = ord(i) + k
    print (char(x), end = " ")
```

Output:

Enter a string: Sivani
Enter a key value: 2
U k x c p k.

10) WAP that validates a mobile number. The number should start with 7, 8, 9, continuing with 9 digits.

```
* import re
s = input ("Enter your mobile number:")
p = "[7,8,9][0-9]{9}"
```

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```
if re.search(p,s):
    print("Valid Mobile Number")
else:
    print("Invalid Mobile Number")
```

Output:

- 1) Enter your mobile number: 9391616262  
Valid Mobile Number.
- 2) Enter your mobile number: 6584369785  
Invalid Mobile Number.

ii) WAP to extract date from a given string:

```
* import re
s=input("Enter a string")
p= "\d{2}-\d{2}-\d{4}"
print(re.search(p,s))
```

Output:

```
Enter a string: 22-06-2022Sivani
<re.Match object; span=(0, 10), match='22-06-2022'>
```

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- 12) WAP that accepts a string from a user and replace the same string by removing vowels:
- \* `S1 = input("Enter the string")  
S2 = "aeiouAEIOU"  
for i in S2:  
 S1 = S1.replace(i, '')  
print(S1)`
- } output:  
Enter the string : hello asking  
hll sking.