

Program 1

Aim

Create a string from the given string where the first and last character are exchanged.

Eg: Python ⇒ nythoP

Source Code

```
str=input("Enter string:")
if len(str)>1:
    str=str[-1]+str[1:-1]+str[0]
print(str)
```

Output

```
24mca32@projlabserver:~/pylab/cycle2$ python3 stringswapchar.py
Enter string:Python
nythoP
```

Program 2

Aim

Get a string from an input string where all occurrences of the first character are replaced with '\$', except the first character. [eg: onion -> oni\$n]

Source Code

```
s=input("Enter a string:")
if len(s)>0:
    first=s[0]
    s=first+s[1:].replace(first,'$')
print(s)
```

Output

```
24mca32@projlabserver:~/pylab/cycle2$ python3 stringswapdollar.py
Enter a string:onion
oni$n
```

Program 3

Aim

Create a single string separated with space from two strings by swapping the character at position 1.

Eg : str1 = "Hello" str2 ="World" , then create a string str3 = "Hollo Werld" [Hint: use slicing and concatenation]

Source Code

```
str1=input("Enter first string:")
str2=input("Enter second string:")
str3=str1[0]+str2[1]+str1[2:]+ " "+str2[0]+str1[1]+str2[2:]
print(str3)
```

Output

```
24mca32@projlabserver:~/pylab/cycle2$ python3 stringswapposition.py
Enter first string:Hello
Enter second string:World
Hollo Werld
```

Program 4

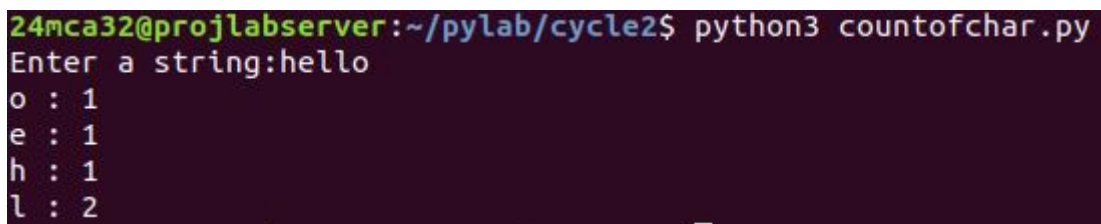
Aim

Count the number of characters (character frequency) in a string.

Source Code

```
str=input("Enter a string:")  
for char in set(str):  
    count=str.count(char)  
    print(f"{char} : {count}")
```

Output



A terminal window screenshot showing the execution of a Python script. The prompt is '24mca32@projlabserver:~/pylab/cycle2\$'. The command 'python3 countofchar.py' is entered. The program prompts 'Enter a string:' and the user enters 'hello'. The output shows the frequency of each character: 'o : 1', 'e : 1', 'h : 1', and 'l : 2'.

```
24mca32@projlabserver:~/pylab/cycle2$ python3 countofchar.py  
Enter a string:hello  
o : 1  
e : 1  
h : 1  
l : 2
```

Program 5

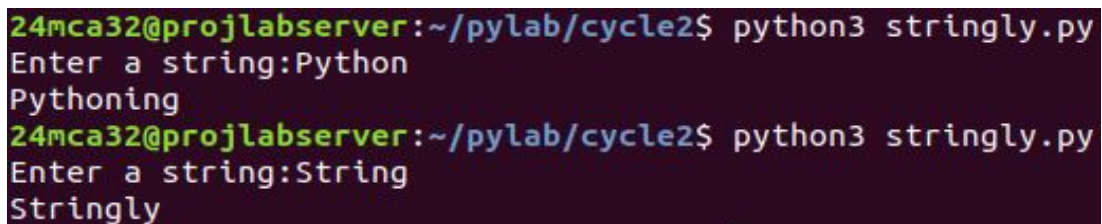
Aim

Add 'ing' at the end of a given string. If it already ends with 'ing', then add 'ly'

Source Code

```
str=input("Enter a string:");
if str.endswith("ing"):
    str=str+"ly"
else:
    str=str+"ing"
print(str)
```

Output



```
24mca32@projlabserver:~/pylab/cycle2$ python3 stringly.py
Enter a string:Python
Pythoning
24mca32@projlabserver:~/pylab/cycle2$ python3 stringly.py
Enter a string:String
Stringly
```

Program 6

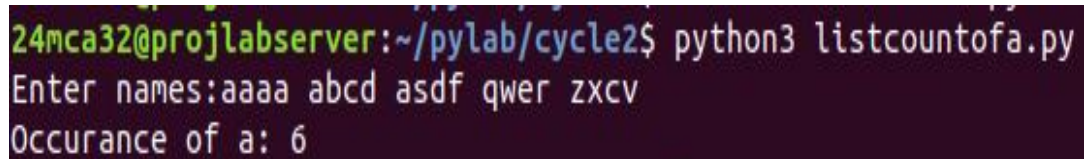
Aim

Store a list of first names. Count the occurrences of 'a' within the list.

Source Code

```
names=input("Enter names:").split(" ")
count=sum(name.count('a') for name in names)
print("Occurance of a:",count)
```

Output



```
24mca32@projlabsrver:~/pylab/cycle2$ python3 listcountofa.py
Enter names:aaaa abcd asdf qwer zxcv
Occurance of a: 6
```

Program 7

Aim

Write a python program to read two lists color-list1 and color-list2. Print out all colors from color-list1 not contained in color-list2.

Source Code

```
color_list1=input("Enter color list 1:").split(' ')
color_list2=input("Enter color list 2:").split(' ')
difference=[color.strip() for color in color_list1 if color.strip() not in [c.strip() for c in color_list2]]
print("Colors in list 1 and not in list 2:",difference)
```

Output

```
24mca32@projlabserver:~/pylab/cycle2$ python3 listdiff.py
Enter color list 1:red green blue
Enter color list 2:black white red
Colors in list 1 and not in list 2: ['green', 'blue']
```

Program 8

Aim

Create a list of colors from comma-separated color names entered by the user.
Display first and last colors.

Source Code

```
colors=input("Enter colors:").split(',')
first_color=colors[0]
last_color=colors[-1]
print(f"First color: {first_color}\nLast color: {last_color}")
```

Output

```
24mca32@projlabserver:~/pylab/cycle2$ python3 listfirstandlast.py
Enter colors:red,green,blue
First color: red
Last color: blue
```


Program 9

Aim

Write a program to prompt the user for a list of integers. For all values greater than 100, store 'over' instead.

Source Code

```
nums=list(map(int,input("Enter the numbers:").split(' ')))
result=["over" if x>100 else x for x in nums]
print(result)
```

Output

```
24mca32@proglabserver:~/pylab/cycle2$ python3 list100over.py
Enter the numbers:10 200 30 400 50
[10, 'over', 30, 'over', 50]
```

Program 10

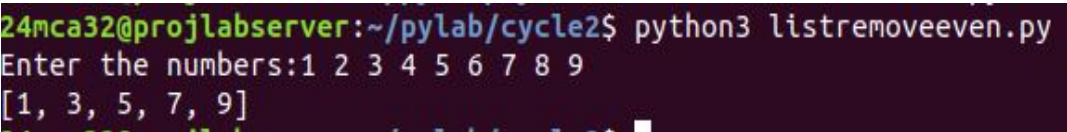
Aim

From a list of integers, create a list after removing even numbers.

Source Code

```
nums=list(map(int,input("Enter the numbers:").split(' ')))
result=[x for x in nums if x%2!=0]
print(result)
```

Output



```
24mca32@projlabsrver:~/pylab/cycle2$ python3 listremoveeven.py
Enter the numbers:1 2 3 4 5 6 7 8 9
[1, 3, 5, 7, 9]
```

The screenshot shows a terminal window with a dark background. The prompt is '24mca32@projlabsrver:~/pylab/cycle2\$'. The user enters 'python3 listremoveeven.py'. The program prompts 'Enter the numbers:' and the user enters '1 2 3 4 5 6 7 8 9'. The program outputs '[1, 3, 5, 7, 9]'.

Program 11

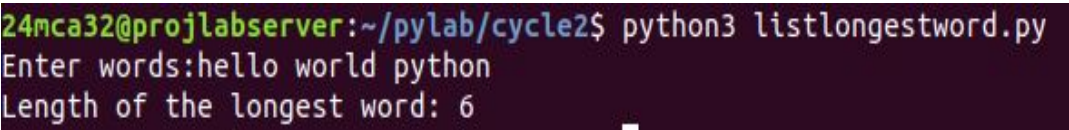
Aim

Accept a list of words and return the length of the longest word

Source Code

```
words=input("Enter words:").split(' ')
longest_word=max(words,key=len)
print("Length of the longest word:",len(longest_word))
```

Output



```
24mca32@projlabsrver:~/pylab/cycle2$ python3 listlongestword.py
Enter words:hello world python
Length of the longest word: 6
```

Program 12

Aim

Write a program to prompt the user to enter two lists of integers and check

- a) Whether lists are of the same length.
- b) Whether the list sums to the same value.
- c) Whether any value occurs in both Lists

Source Code

```
list1=list(map(int,input("Enter number list 1:").split(' ')))
list2=list(map(int,input("Enter number list 2:").split(' ')))
print("Same length:",len(list1)==len(list2))
print("Eqaul sum:",sum(list1)==sum(list2))
print("Any value in both list:",any(x in list2 for x in list1))
```

Output

```
24mca32@projlabserver:~/pylab/cycle2$ python3 listlensumcommon.py
Enter number list 1:3 2 1 5 4
Enter number list 2:1 2 3 4 5
Same length
Eqaul sum
Common values in both list
[3, 2, 1, 5, 4]
```

Program 13

Aim

Write a Python program to count the occurrences of each word in a line of text.

Hint: use split() function and dictionary

Sample input : the quick brown fox jumps over the lazy dog

Output : {'the': 2, 'jumps': 1, 'brown': 1, 'lazy': 1, 'fox': 1, 'over': 1, 'quick': 1, 'dog.': 1}

Source Code

```
words = input("Enter a line of text: ").split()
word_count = {}
for word in words:
    word_count[word] = word_count.get(word, 0) + 1
print(word_count)
```

Output

```
24mca32@projlabserver:~/pylab/cycle2$ python3 dictwordcount.py
Enter a line of text:the quick brown fox jumps over the lazy dog
{'the': 2, 'quick': 1, 'brown': 1, 'fox': 1, 'jumps': 1, 'over': 1, 'lazy': 1, 'dog': 1}
```

Program 14

Aim

List comprehensions:

- a) Generate positive list of numbers from a given list of integers
- b) Square of N numbers
- c) Form a list of vowels selected from a given word
- d) Form a list ordinal value of each element of a word (Hint: use ord() to get ordinal values)

Source Code(s)

a)

```
nums = list(map(int, input("Enter integers: ").split()))
positive = [x for x in nums if x > 0]
print(positive)
```

b)

```
N = int(input("Enter N: "))
squares = [x**2 for x in range(1, N+1)]
print(squares)
```

c)

```
word = input("Enter a word: ")
vowels = [char for char in word if char in 'aeiouAEIOU']
print(vowels)
```

d)

```
word = input("Enter a word: ")
ord_values = [ord(char) for char in word]
print(ord_values)
```

Output(s)

```
24mca32@projlabserver:~/pylab/cycle2$ python3 14apositive.py
Enter numbers:-2 1 0 -1 2
Positive integers: [1, 2]
```

```
24mca32@projlabserver:~/pylab/cycle2$ python3 14bsquare.py
Enter numbers:1 2 3 4 5
Squares of the given numbers: [1, 4, 9, 16, 25]
```

```
24mca32@projlabserver:~/pylab/cycle2$ python3 14cvowels.py
Enter a word:hello
Vowels: ['e', 'o']
```

Program 15

Aim

Sort dictionary in ascending and descending order.

Source Code

```
d = {'b': 3, 'a': 1, 'c': 2}
print("Ascending order:", dict(sorted(d.items())))
print("Descending order:", dict(sorted(d.items(), reverse=True)))
```

Output

Program 16

Aim

Merge two dictionaries.

Source Code

```
dict1 = {'a': 1, 'b': 2}
dict2 = {'c': 3, 'd': 4}
merged_dict = {**dict1, **dict2}
print(merged_dict)
```

Output