CYCLE 2

PROGRAM 1

Aim : Program to create a string from the given string where the first and last characters are exchanged.

Source code :

```
str="python"
newstr=str[-1]+str[1:-1]+str[0]
print(newstr)
```

Output :

```
24mca12@projlabserver:~/pylab$ nano  cy2exp1.py
24mca12@projlabserver:~/pylab$ python3  cy2exp1.py
nythop
```

PROGRAM 2

Aim : Program to get a string from an input string where all occurences of first character are replaced with '$',except for first character.

Source code :

```
s=input("Enter your string:\n")
f=s[0]
newstr=f+s[1:].replace(f,'$')
print(newstr)
```

Output :

```
24mca12@projlabserver:~/pylab$ python3 cy2exp2.py
Enter your string:
anamika
an$mik$
```

PROGRAM 3

Aim : Program to create a single string seprated with space from teo strings by swapping the characters position 1.

Source code :

```
string1=input("Enter first string:")
string2=input("Enter second string:")
swap_Str1=string1[0]+string2[1]+string1[2:]
swap_Str2=string2[0]+string1[1]+string2[2:]
string3=swap_Str1+" "+swap_Str2
print(string3)
```

Output :

```
24mca12@projlabserver:~/pylab$ python3 cy2exp3.py
Enter first string:car
Enter second string:sun
cur san
24mca12@projlabserver:~/pylab$
```

PROGRAM 4

Aim : Program to counting the umber of characters in a string.

Source code :

```
n=input("Enter the string:").lower()
s={}
for i in n:
    if i in s:
        s[i]+=1
    else:
        s[i]=1
print(s)
```

Output :

```
24mca12@projlabserver:~/pylab$ nano cy2exp4.py
24mca12@projlabserver:~/pylab$ python3 cy2exp4.py
Enter the string:malayalam
{'m': 2, 'a': 4, 'l': 2, 'y': 1}
24mca12@projlabserver:~/pylab$
```

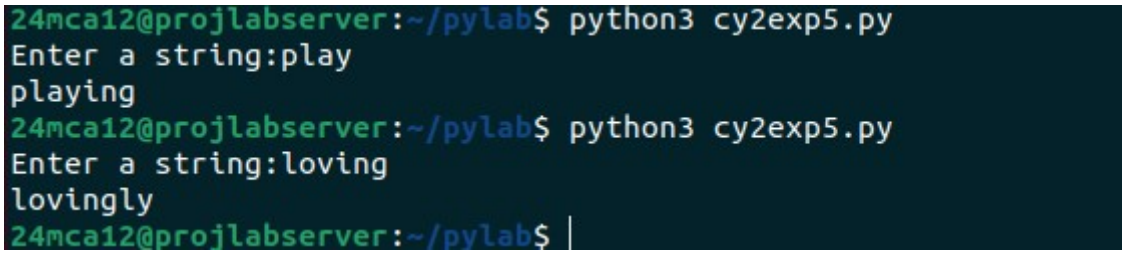
PROGRAM 5

Aim : Program to add ‘ing’ at the end of a given string ,if it already ends with ‘ing’ add ‘ly’ .

Source code :

```
string=input("Enter a string:")
if "ing" in string:
	print(string+"ly")
else:
	print(string+"ing")
```

Output :



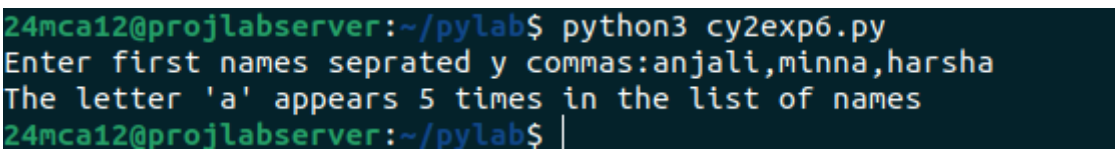
PROGRAM 6

Aim : Program to store a list of first names then count the occurance of ‘a’ within the list .

Source code :

```
names=input("Enter first names seprated y commas:")
count_a=names.lower().count('a')
print(f"The letter 'a' appears {count_a} times in the list of names")
```

Output :



PROGRAM 7

Aim : Program to read teo lists, prit out all colors from color_list 1 not color_list2.

Source code :

```
list1=input("Enter colors for list 1 seprated by comma:")
list2=input("Enter colors for list2 seprated by comma:")
set1=set(list1.split(','))
set2=set(list2.split(','))
difference=set1-set2
print("Colors in list1 but not in list2:",difference)
```

Output :

```
24mca12@projlabserver:~/pylab$ python3 cy2exp7.py
Enter colors for list 1 seprated by comma:red,black,pink,blue
Enter colors for list2 seprated by comma:pink,yellow,white
Colors in list1 but not in list2: {'black', 'red', 'blue'}
24mca12@projlabserver:~/pylab$
```

PROGRAM 8

Aim : Program to create a list of colors and display first and last color .

Source code :

```
colors=input("enter colors:").split(',')
print("first color:",colors[0])
print("last color:",colors[-1])
```

Output :

```
24mca12@projlabserver:~/pylab$ python3 cy2exp8.py
enter colors:red,black,pink,blue
first color: red
last color: blue
24mca12@projlabserver:~/pylab$
```

PROGRAM 9

Aim : Program to prompt the user for a list of integers ,for all values greater than 100 store ‘over’ instead.

Source code :

```
n=int(input("Enter number of integers to input:"))
list1=[]
for i in range(n):
        num=int(input("Enter integers:"))
        if num>100:
                num="over"
        list1.append(num)
print(list1)
```

Output :

```
24mca12@projlabserver:~/pylab$ python3 cy2exp9.py
Enter number of integers to input:3
Enter integers:45
Enter integers:2435
Enter integers:0
[45, 'over', 0]
24mca12@projlabserver:~/pylab$
```

PROGRAM 10

Aim : Program to form a list of integers ,create a list after removing even numbers.

Source code :

```
n=int(input("Enter number of integers to input:"))
listed=[]
for i in range(n):
        num=int(input("Enter Integers:"))
        if num%2!=0:
                listed.append(num)
print(f"New List:{listed}")
```

Output :

```
24mca12@projlabserver:~/pylab$ python3 cy2exp10.py
Enter number of integers to input:5
Enter Integers:1
Enter Integers:2
Enter Integers:3
Enter Integers:4
Enter Integers:5
New List:[1, 3, 5]
```

PROGRAM 11

Aim : Program to accept a list of words and return the length of longest word.

Source code :

```
str=input("Enter the list of words seprated by space:")
words=str.split()
length=0
for i in words:
    if len(i)>length:
        longestword=i
        length=len(i)
print(f"The longest word is {longestword} and its length is {length}")
```

Output :

```
24mca12@projlabserver:~/pylab$ nano cy2exp11.py
24mca12@projlabserver:~/pylab$ python3 cy2exp11.py
Enter the list of words seprated by space:english malayalam hindi
The longest word is malayalam and its length is 9
```

PROGRAM 12

Aim : 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 :

```
n=int(input("Enter  number of integers to input:"))
list1=[]
for i in range(n):
    num=int(input("Enter integers:"))
    list1.append(num)
n=int(input("Enter  number of integers to input:"))
list2=[]
for i in range(n):
```

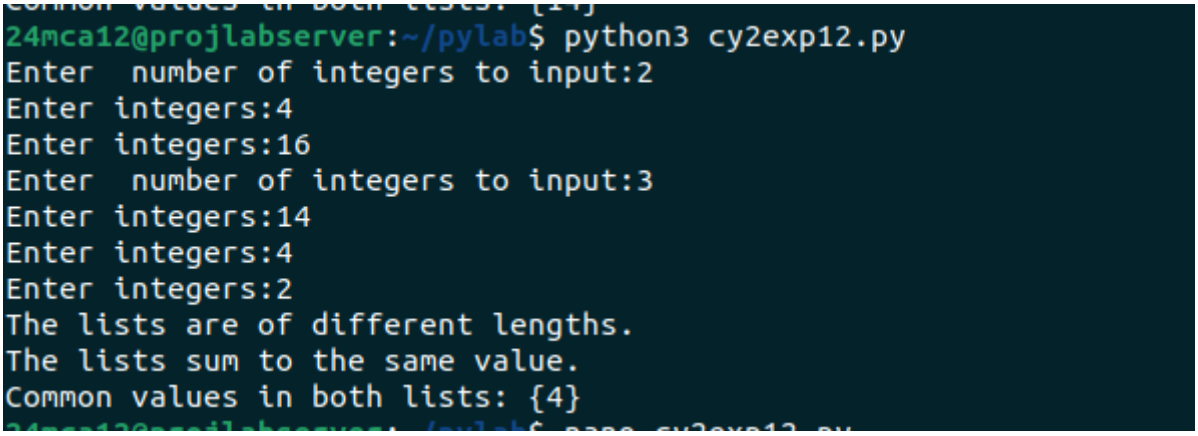
```
    num=int(input("Enter integers:"))
    list2.append(num)

if len(list1)==len(list2):
    print("lists are of the same length.")
else:
    print("The lists are of different lengths.")

if sum(list1) == sum(list2):
    print("The lists sum to the same value.")
else:
    print("The lists do not sum to the same value.")

common_value = set(list1).intersection(list2)
if common_value:
    print(f"Common values in both lists: {common_value}")
else:
    print("There are no common values in both lists.")
```

Output :



PROGRAM 13

Aim : Program to count the occurance of each word in a line of text.

Source code :

```
text = input("Enter a line of text: ")
words = text.split()
word_count = {}
for word in words:
```

```
    word = word.lower()
    if word in word_count:
        word_count[word] += 1
    else:
        word_count[word] = 1
print("Word occurrences:", word_count)
```

Output :

```
24mca12@projlabserver:~/pylab$ python3 cy2exp13.py
Enter a line of text: the quick brown fox jumbs over the lazy dog
Word occurrences: {'the': 2, 'quick': 1, 'brown': 1, 'fox': 1, 'jumb
24mca12@projlabserver:~/pylab$ python3 cy2exp13.py
Enter a line of text: a rose is a rose is a rose is a rose
Word occurrences: {'a': 4, 'rose': 4, 'is': 3}
```

PROGRAM 14

Aim : Program to show list comprehensions.

Source code :

```
numbers = [-10, 15, -3, 7, -25, 18, 0]
positive_numbers = [num for num in numbers if num > 0]
print(f"Positive numbers in {numbers} :", positive_numbers)

N = 5
squares = [num ** 2 for num in range(1, N + 1)]
print("Squares of first 5 numbers:", squares)

word = "comprehension"
vowels = [char for char in word if char in 'aeiou']
print(f"Vowels in the word: {word}", vowels)

word = "hello"
ordinal_values = [ord(char) for char in word]
print("Ordinal values of each character in the word : hello", ordinal_values)
```

Output :

```
24mca12@projlabserver:~/pylab$ python3 cy2exp14.py
Positive numbers in [-10, 15, -3, 7, -25, 18, 0] : [15, 7, 18]
Squares of first 5 numbers: [1, 4, 9, 16, 25]
Vowels in the word: comprehension ['o', 'e', 'e', 'i', 'o']
Ordinal values of each character in the word : hello [104, 101, 108, 108, 111]
24mca12@projlabserver:~/pylab$ nano cy2exp14.py
```

PROGRAM 15

Aim : Program to sort dictionaries in ascending and discending order.

Source code :

```
my_dict = {'banana': 3, 'apple': 5, 'orange': 2, 'kiwi': 4}
keys_asc = dict(sorted(my_dict.items()))
print("Sorted by keys (ascending):", keys_asc)
keys_desc = dict(sorted(my_dict.items(), reverse=True))
print("Sorted by keys (descending):", keys_desc)

values_asc = dict(sorted(my_dict.items(), key=lambda item: item[1]))
print("Sorted by values (ascending):", values_asc)

values_desc = dict(sorted(my_dict.items(), key=lambda item: item[1], reverse=True))
print("Sorted by values (descending):", values_desc)
```

Output :

```
24mca12@projlabserver:~/pylab$ nano cy2exp15.py
24mca12@projlabserver:~/pylab$ python3 cy2exp15.py
Sorted by keys (ascending): {'apple': 5, 'banana': 3, 'kiwi': 4, 'orange': 2}
Sorted by keys (descending): {'orange': 2, 'kiwi': 4, 'banana': 3, 'apple': 5}
Sorted by values (ascending): {'orange': 2, 'banana': 3, 'kiwi': 4, 'apple': 5}
Sorted by values (descending): {'apple': 5, 'kiwi': 4, 'banana': 3, 'orange': 2}
```

PROGRAM 16

Aim : Program to merge two dictionaries.

Source code :

```
dict1 = {'banana': 3, 'apple': 5}
dict2 = {'orange': 2, 'kiwi': 4}
print(dict1)
print(dict2)
dict1.update(dict2)
print(f"Merged :{dict1}")
```

Output :

```
24mca12@projlabserver:~/pylab$ python3 cy2exp16.py
{'banana': 3, 'apple': 5}
{'orange': 2, 'kiwi': 4}
Merged :{'banana': 3, 'apple': 5, 'orange': 2, 'kiwi': 4}
```