

## Module = 2

(1) Write a Python program to check if a number is positive, negative or zero.

```
In [5]: a = int(input("enter the number :"))
if a>0:
    print(f"{a} is positive")
elif a<0:
    print(f"{a} is negative")
else:
    print(f"{a} is zero")
```

```
enter the number :47
47 is positive
```

(2) Write a Python program to get the Factorial number of given number.

```
In [12]: a = int(input("enter the number :"))
factorial = 1
for i in range(1,a + 1):
    factorial = factorial*i
print("The factorial of",a,"is",factorial)
```

```
enter the number :3
The factorial of 3 is 6
```

(3) Write a Python program to get the Fibonacci series of given range.

```
In [32]: k = int(input("enter the number : "))
a = 0
b = 1
for i in range(0,k):
    print(a)
    c = a + b
    a = b
    b = c
```

```
enter the number : 4
0
1
1
2
```

(4) How memory is managed in Python?

As we know, Python uses the dynamic memory allocation which is managed by the Heap data structure. Memory Heap holds the objects and other data structures that will be used in the program. Python memory manager manages the allocation or de-allocation of the heap memory space through the API functions.

(5) What is the purpose continue statement in python?

It returns the control to the beginning of the while loop.. The continue statement rejects all the remaining statements in the current iteration of the loop and moves the control back to the top of the loop.

(6) Write python program that swap two number with temp variable and without temp variable.

```
In [35]: # with temp variable
a = int(input("enter the value of a : "))
b = int(input("enter the value of b : "))
temp = a
a = b
b = temp
print("the value of a :", a)
print("the value of b :", b)
print("\n")

# without temp variable
a = int(input("enter the value of a : "))
b = int(input("enter the value of b : "))
a,b = b,a
print("the value of a :", a)
print("the value of b :", b)
```

```
enter the value of a : 1
enter the value of b : 2
the value of a : 2
the value of b : 1
```

```
enter the value of a : 1
enter the value of b : 2
the value of a : 2
the value of b : 1
```

(7) Write a Python program to find whether a given number is even or odd, print out an appropriate message to the user.

```
In [39]: a = int(input("enter the value of a : "))
if a%2==0:
    print(f"{a} is even")
else:
    print(f"{a} is odd")
```

enter the value of a : 47  
47 is odd

(8) Write a Python program to test whether a passed letter is a vowel or not.

```
In [46]: ch = str(input("enter the letter :"))
if (ch=='A' or ch=='a' or ch=='E' or ch=='e' or ch=='I' or ch=='i' or ch=='O' or
    print(ch, " is vowel")
else:
    print(ch, " is not vowel")
```

enter the letter :u  
u is vowel

(9) Write a Python program to sum of three given integers. However, if two values are equal sum will be zero.

```
In [49]: a = int(input("enter the value of a : "))
b = int(input("enter the value of b : "))
c = int(input("enter the value of c : "))
if a==b or b==c or c==a:
    print("the sum is 0")
else:
    d = a+b+c
    print("the sum is",d)
```

enter the value of a : 1  
enter the value of b : 2  
enter the value of c : 3  
the sum is 6

(10) Write a Python program that will return true if the two given integer values are equal or their sum or difference is 5.

```
In [53]: a = int(input("enter the value of a : "))
b = int(input("enter the value of b : "))
if a==b or a+b==5 or a-b==5:
    print("true")
else:
    print("false")
```

enter the value of a : 2  
enter the value of b : 3  
false

(11) Write a python program to sum of the first n positive integers.

```
In [58]: n = int(input("enter the value of a : "))
sum = 0
for i in range(1,n+1):
    sum = sum+i
print(sum)
```

```
enter the value of a : 3
6
```

(12) Write a Python program to calculate the length of a string.

```
In [60]: n = str(input("enter the string : "))
counter = 0
for s in n:
    counter +=1
print("Length of the input string is:", counter)
```

```
enter the string : krishna
Length of the input string is: 7
```

(13) Write a Python program to count the number of characters (character frequency) in a string.

```
In [22]: str1 = input("enter the string :")
check = input("enter string to check in main string :")
print(str1.count(check))
```

```
enter the string :krishna
enter string to check in main string :i
1
```

(14) What are negative indexes and why are they used?

Python programming language supports negative indexing of arrays, something which is not available in arrays in most other programming languages. This means that the index value of -1 gives the last element, and -2 gives the second last element of an array. The negative indexing starts from where the array ends.

(15) Write a Python program to count occurrences of a substring in a string.

```
In [23]: str1 = input("enter the string :")
check = input("enter string to check in main string :")
print(str1.count(check))
```

```
enter the string :tops technologies
enter string to check in main string :lo
1
```

(16) Write a Python program to count the occurrences of each word in a given sentence.

```
In [24]: str1 = input("enter the string :")
check = input("enter string to check in main string :")
print(str1.count(check))
```

```
enter the string :hello world
enter string to check in main string :o
2
```

(17) Write a Python program to get a single string from two given strings, separated by a space and swap the first two characters of each string.

```
In [36]: str1 = input("enter the string :")
str2 = input("enter the string :")
str3 = str1[-1]+str1[1:-1]+str1[0]
str4 = str2[-1]+str2[1:-1]+str2[0]
str5 = str3+" "+str4
print(str5)
```

```
enter the string :hello
enter the string :world
oellh dorlw
```

(18) Write a Python program to add 'ing' at the end of a given string (length should be at least 3). If the given string already ends with 'ing' then add 'ly' instead if the string length of the given string is less than 3, leave it unchanged.

```
In [1]: str1 = input("enter the string :")
if len(str1)>=3:
    if str1.endswith("ing")==True:
        print(str1+"ly")
    else:
        print(str1+"ing")
else:
    print(str1)
```

```
enter the string :dancing
dancingly
```

(19) Write a Python program to find the first appearance of the substring 'not' and 'poor' from a given string, if 'not' follows the 'poor', replace the whole 'not'...'poor' substring with 'good'. Return the resulting string.

```
In [2]: str1 = input("enter the string :")
if "not poor" in str1:
    print(str1.replace("not poor","good"))
else:
    print("str1")
```

enter the string :i am not poor  
i am good

(20) Write a Python function that takes a list of words and returns the length of the longest one.

```
In [6]: list = ["dhruv", "tax", "krishna"]
longest_string = max(list,key=len)
print(len(longest_string))
```

7

(21) Write a Python function to reverses a string if its length is a multiple of 4.

```
In [1]: str1 = input("enter the string :")
if len(str1) % 4 == 0:
    print(str1[::-1])
else:
    print("the enter string lenght is not 4")
```

enter the string :skrishna  
ahsirks

(22) Write a Python program to get a string made of the first 2 and the last 2 chars from a given a string. If the string length is less than 2, return instead of the empty string.

```
In [9]: str1 = input("Enter String : ")
if len(str1) < 2:
    print("")
elif len(str1) == 2:
    print(str1 + str1)
else:
    str2 = str1[0:2]+str1[-2:]
    print(str2)
```

Enter String : krishna  
krna

(23) Write a Python function to insert a string in the middle of a string.

```
In [10]: str1=input("The original string is : ")
str2=input("The string you want to add is : ")
mid_position = len(str1) // 2
str3= str1[:mid_position] + str2 + str1[mid_position:]
print("Formulated String : " ,str3)
```

```
The original string is : krishna
The string you want to add is : hi
Formulated String : krihishna
```