

### **Write a program to count vowels in input string**

```
str1=input("Enter any String ") # java
c=0
```

```
for ch in str1:
    if ch in "aeiouAEIOU":
        c=c+1
```

```
print(f'Count of Vowels {c}')
```

### **Write a program to convert input string from lowercase to uppercase**

```
str1=input("Enter any String ") # abc
str2=""
```

```
for ch in str1:
    if ch>='a' and ch<='z':
        str2=str2+chr(ord(ch)-32)
```

```
print(str1)
print(str2)
```

### **Write a program to capitalize string (first letter capital remaining lowercase)**

```
str1=input("Enter any string ")
str2=""
first=True
for ch in str1:
    if first:
        if ch>='a' and ch<='z':
```

```

        str2=str2+chr(ord(ch)-32)
    else:
        str2=str2+ch
    first=False
elif ch>='A' and ch<='Z':
    str2=str2+chr(ord(ch)+32)
else:
    str2=str2+ch

print(str1)
print(str2)

```

## range

**range is an iterable**, which is used to generate sequence of values. range is a datatype (OR) range is sequence data type (OR) range is an immutable sequence data type.

The **range** type represents an immutable sequence of numbers and is commonly used for looping a specific number of times in for loops. range is also used to represent data for other iterables or collection.

range object is created using 3 properties

1. Start □ represents beginning value of range
2. Stop □ represents end of value of range, which is not included
3. Step □ represents difference between value within range (increment or decrement)

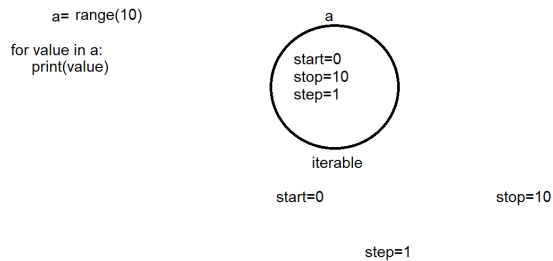
Syntax1: range(stop)

Syntax2: range(start,stop,step)

## Syntax-1: range(stop)

This syntax allows to create range of +ve numbers.

This syntax create range object with default start=0,step=1 and stop is given value. Within range stop value is not included.



## Example:

```
a=range(10)
for value in a:
    print(value,end=' ')
print()
```

```
b=range(20)
for value in b:
    print(value,end=' ')
print()
```

```
c=range(-5)
for value in c:
    print(value,end=' ')
```

## Output:

```
0 1 2 3 4 5 6 7 8 9
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
```

## Syntax2: range(start,stop,step)

This syntax allows to generate sequence of numbers in ascending order or descending order.

Always start and stop values are given based on step value.

If step=+ve, start<stop

If step=-ve, start>stop

**Example:**

```
a=range(1,6,1) # start=1,stop=6,step=1
```

```
for value in a:
```

```
    print(value,end=' ')
```

```
print()
```

```
b=range(1,11,2) # start=1,stop=11,step=2
```

```
for value in b:
```

```
    print(value,end=' ')
```

```
print()
```

```
c=range(-5,0) # start=-5,stop=0,step=1
```

```
for value in c:
```

```
    print(value,end=' ')
```

```
print()
```

```
d=range(-1,-6,-1) # start=-1,stop=-6,step=-1
```

```
for value in d:
```

```
    print(value,end=' ')
```

```
print()
```

```
e=range(5,0,-1) # start=5,stop=0,step=-1
```

```
for value in e:
```

```
    print(value,end=' ')
```

```
print()
```

```
f=range(-1,6,-1) # start=-1,stop=6,step=-1
for value in f:
    print(value,end=' ')
```

```
g=range(-5,6,1) # start=-5,stop=6,step=1
for value in g:
    print(value,end=' ')
print()
h=range(5,-6,-1) # start=5,stop=-6,step=-1
for value in h:
    print(value,end=' ')
```

### **Output:**

```
1 2 3 4 5
1 3 5 7 9
-5 -4 -3 -2 -1
-1 -2 -3 -4 -5
5 4 3 2 1
-5 -4 -3 -2 -1 0 1 2 3 4 5
5 4 3 2 1 0 -1 -2 -3 -4 -5
```

### **Example:**

```
# Write a program to generate table for input number
# Number : 5
# 5x1=5
# 5x2=10
# 5x3=15
# ...
#5x10=50
```

```
num=int(input("Enter any number "))
for i in range(1,11): # start=1,stop=11,step=1 --> 1 2 3 4 5 6 7 8 9 10
    p=num*i
```

```
print(f'{num}x{i}={p}')
```

**Output:**

Enter any number 9

9x1=9

9x2=18

9x3=27

9x4=36

9x5=45

9x6=54

9x7=63

9x8=72

9x9=81

9x10=90

**Example:**

# Write a program to generate sqrs of all the numbers from 1 to 10

```
for num in range(1,11): # start=1,stop=11,step=1  
    print(f'{num}-->{num**2}')
```

**Output:**

1-->1

2-->4

3-->9

4-->16

5-->25

6-->36

7-->49

8-->64

9-->81

10-->100

**Note:** range takes inputs as integers

**Note:** step should not be 0

**Example:**

# Write a program to generate alphabets from A-Z,a-z

```
for value in range(65,91):  
    print(chr(value),end=' ')
```

```
print()  
for value in range(97,123):  
    print(chr(value),end=' ')
```

**Output:**

```
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z  
a b c d e f g h i j k l m n o p q r s t u v w x y z  
>>>
```

**Example:**

```
for num in range(1,11):  
    print(num,end=' ')  
print()
```

```
for num in range(2,22,2):  
    print(num,end=' ')
```

```
print()
```

```
for num in range(1,20,2):  
    print(num,end=' ')  
print()
```

```
for num in range(20,0,-2):  
    print(num,end=' ')
```

**Output:**

```
1 2 3 4 5 6 7 8 9 10  
2 4 6 8 10 12 14 16 18 20  
1 3 5 7 9 11 13 15 17 19  
20 18 16 14 12 10 8 6 4 2
```

<https://csiplearninghub.com/python-loops-practice-questions/>