

## STRINGS

```
var1 = 'Hello World!'
var2 = "Python Programming"
print(var1," ",var2)
```

Hello World!    Python Programming

---

```
var1 = 'Hello World!'
var2 = "Python Programming"
```

```
print (var1[0])
print (var2[1:5])
```

H  
ytho

---

```
var1 = 'Hello World!'
print ("Updated String :- ", var1[0:6] + 'Shabnam')
```

Updated String :-    Hello Shabnam

---

```
str1 = input("Please Enter Your Own String : ")
```

```
str2 = str1
str3 = str1[:]
str4 = str1[2:6]
```

```
print("The Final String : Str2  = ", str2)
print("The Final String : Str3  = = ", str3)
print("The Final String : Str4  = = ", str4)
```

```
Please Enter Your Own String : hello class
The Final String : Str2  =  hello class
The Final String : Str3  = =  hello class
The Final String : Str4  = =  llo
```

---

#Python String capitalize() method returns a copy of the string with only its first character capitalized.

```
str = "this is string example....wow!!!";
print ("str.capitalize() : ", str.capitalize())
```

str.capitalize() :    This is string example....wow!!!

---

#center() returns centered in a string of length width. Padding is done using the specified fillchar. Default filler is a space.

```
str = "this is string example....wow!!!"
print ("str.center(40, 'a') : ", str.center(40, '*'))

str.center(40, 'a') :  ****this is string example....wow!!!!**
```

---

#count() returns the number of occurrences of substring sub in the range [start, end].

```
#str.count(sub, start= 0,end=len(string))

str = "this is string example....wow!!!";

sub = "i";
print ("str.count(sub, 4, 40) : ", str.count(sub, 4, 40))
sub = "wow";
print ("str.count(sub) : ", str.count(sub))

str.count(sub, 4, 40) :  2
str.count(sub) :  1
```

---

#find() determines if string str occurs in string, or in a substring of string if starting index beg and ending index end are given.

```
#str.find(str, beg=0, end=len(string))

str1 = "this is string example....wow!!!";
str2 = "is";

print (str1.find(str2))
print (str1.find(str2, 10))
print (str1.find(str2, 40))

2
-1
-1
```

---

#index() determines if string str occurs in string or in a substring of string if starting index beg and ending index end are given.

```
str1 = "this is string example....wow!!!";
str2 = "exam";
```

```
print (str1.index(str2))
print (str1.index(str2, 10,32))

15
15
```

---

#isalnum() checks whether the string consists of alphanumeric characters.

```
str = "this2009"; # No space in this string
print (str.isalnum())
```

```
str = "this is string example....wow!!!";
print (str.isalnum())
```

True  
False

---

```
str = "ShabnamSharma"; # No space & digit in this string
print (str.isalpha())
```

```
str = "this is string example....wow!!!";
print (str.isalpha())
```

True  
False

---

```
str = "123456"; # Only digit in this string
print (str.isdigit())
```

```
str = "this is string example....wow!!!";
print (str.isdigit())
```

True  
False

---

```
str = "THIS is string example....wow!!!";
print (str.islower())
```

```
str = "this is string example....wow!!!";
print (str.islower())
```

False  
True

---

```
str = "this2009";  
print (str.isnumeric())
```

```
str = "23443434";  
print (str.isnumeric())
```

```
False  
True
```

---

```
str = " ";  
print (str.isspace())
```

```
str = "This is string example....wow!!!";  
print (str.isspace())
```

```
True  
False
```

---

```
str = "This Is String Example...Wow!!!";  
print (str.istitle())
```

```
str = "This is string example....wow!!!";  
print (str.istitle())
```

```
True  
False
```

---

```
str = "THIS IS STRING EXAMPLE....WOW!!!";  
print (str.isupper())
```

```
str = "THIS is string example....wow!!!";  
print (str.isupper())
```

```
True  
False
```

---

#join() returns a string in which the string elements of sequence have been joined by str separator.

```
s = " * * ";  
seq = ("abc", "bttt", "cqweqe"); # This is sequence of strings.  
print (s.join( seq ))
```

```
abc * * bttt * * cqweqe
```

---

```
str = "this is string example....wow!!!";
print ("Length of the string: ", len(str))
```

Length of the string: 32

---

#lstrip() returns a copy of the string in which all chars have been stripped from the beginning of the string (default whitespace characters)

```
str = "    this is string example....wow!!!    ";
print (str.lstrip())
str = "88888888this is string example....wow!!!999999";
print (str.lstrip('8'))
print (str.rstrip('9'))
```

```
this is string example....wow!!!
this is string example....wow!!!999999
88888888this is string example....wow!!!
```

---

```
str = "THIS IS STRING EXAMPLE....WOW!!!";
print (str.lower())
```

this is string example....wow!!!

---

```
#returns largest character
str = "check....wow!!!";
print ("Max character: " + max(str))
```

```
str = "shabnam....!!!";
print ("Max character: " + max(str))
```

```
Max character: w
Max character: s
```

---

```
str = "this-is-real-string-example....wow!!!";
print ("Min character: " + min(str))
```

```
str = "this-is-a-string-example....wow!!!";
print ("Min character: " + min(str))
```

```
Min character: !
Min character: !
```

---

```
#str.replace(old, new[, max])
```

```
str = "this is string example....wow!!! this is really string"
```

```
print (str.replace("is", "was"))
print (str.replace("is", "was", 3))

thwas was string example....wow!!! thwas was really string
thwas was string example....wow!!! thwas is really string
```

---

```
str = "this is string example....wow!!!";
print (str.startswith( 'this' ))
print (str.startswith( 'is', 2, 4 ))
print (str.startswith( 'this', 2, 4 ))

True
True
False
```

---

```
str = "this is string example....wow!!!";
print ("str.capitalize() : ", str.upper())

str.capitalize() :  THIS IS STRING EXAMPLE....WOW!!!
```

---

```
str = "this is string example....wow!!!";
print (str.swapcase())

str = "THIS IS STRING EXAMPLE....WOW!!!";
print (str.swapcase())

THIS IS STRING EXAMPLE....WOW!!!
this is string example....wow!!!
```

---

## **LISTS**

```
list1 = ['physics', 'chemistry', 1997, 2000];
list2 = [1, 2, 3, 4, 5, 6, 7 ];
print ("list1[0]: ", list1[2])
print ("list2[1:5]: ", list2[1:3])

list1[0]: 1997
list2[1:5]: [2, 3]
```

---

```
list = ['physics', 'chemistry', 1997, 2000];
print ("Value available at index 2 : ")
print (list[2])
list[2] = 999999;
print ("New value available at index 2 : ")
print (list[2])
```

Value available at index 2 :  
1997  
New value available at index 2 :  
999999

---

```
list1 = ['physics', 'chemistry', 1997, 2000];  
print (list1)  
del (list1[2]);  
print ("After deleting value at index 2 :")  
print (list1)
```

```
['physics', 'chemistry', 1997, 2000]  
After deleting value at index 2 :  
['physics', 'chemistry', 2000]
```

---

```
list1, list2 = [123, 'xyz', 'zara'], [456, 'abc']  
print ("First list length : ", len(list1))  
print ("Second list length : ", len(list2))
```

```
First list length : 3  
Second list length : 2
```

---

```
aList = [123, 'xyz', 'zara', 'abc'];  
aList.append( 2009 );  
print ("Updated List : ", aList)  
  
Updated List :  [123, 'xyz', 'zara', 'abc', 2009]
```

---

```
aList = [123, 'xyz', 'xyz', 'abc', 123];  
print ("Count for xyz : ", aList.count('xyz'))  
print ("Count for zara : ", aList.count('zara'))
```

```
Count for xyz : 2  
Count for zara : 0
```

---

```
aList = [123, 'xyz', 'zara', 'abc', 123];  
bList = [2009, 'shabnam'];  
aList.extend(bList)  
print ("Extended List : ", aList)  
  
Extended List :  [123, 'xyz', 'zara', 'abc', 123, 2009, 'shabnam']
```

---

```
aList = [123, 'xyz', 'zara', 'abc', 'zara'];
```

```
print ("Index for xyz : ", aList.index( 'xyz' ) )
print ("Index for zara : ", aList.index( 'zara' ) )

Index for xyz : 1
Index for zara : 2
```

---

```
aList = [123, 'xyz', 'zara', 'abc']
aList.insert( 3, 2009)
print ("Final List : ", aList)

Final List :  [123, 'xyz', 'zara', 2009, 'abc']
```

---

```
aList = [123, 'xyz', 'zara', 'abc'];

print(aList)

print ("List after popping last element : ", aList.pop())

print(aList)

print ("List after popping element from mentioned index: ", aList.pop(2
))

print(aList)

aList.insert(3, 2009)

print(aList)

[123, 'xyz', 'zara', 'abc']
List after popping last element :  abc
[123, 'xyz', 'zara']
List after popping element from mentioned index:  zara
[123, 'xyz']
[123, 'xyz', 2009]
```

---

```
aList = [123, 'xyz', 'zara', 'abc', 'xyz'];
aList.remove('xyz');
print ("List : ", aList)
aList.remove('abc');
print ("List : ", aList)

List :  [123, 'zara', 'abc', 'xyz']
List :  [123, 'zara', 'xyz']
```

---

```
aList = ['shabnam', 'xyz', 'zara', 'abc', 'nive'];
```



```
aList.reverse();
print ("List : ", aList)

List :  ['nive', 'abc', 'zara', 'xyz', 'shabnam']
```

---

```
aList = ['naveen', 'shabnam', 'sonia', 'ali', 'nive'];
aList.sort();
print ("List : ", aList)

List :  ['ali', 'naveen', 'nive', 'shabnam', 'sonia']
```

---

## **LOOPS**

```
str = "Python"
for i in str:
    print(i)
```

P  
Y  
t  
h  
o  
n

---

```
list = [1,2,3,4,5,6,7,8,9,10]
n = 6
for i in list:
    c = n*i
    print(n, " * ", i, " = ", c)
```

```
6 * 1 = 6
6 * 2 = 12
6 * 3 = 18
6 * 4 = 24
6 * 5 = 30
6 * 6 = 36
6 * 7 = 42
6 * 8 = 48
6 * 9 = 54
6 * 10 = 60
```

---

```
list = [10,30,23,43,65,12]
sum = 0
for i in list:
    sum = sum+i
print("The sum is:",sum)
```

The sum is: 183

---

```
for i in range(14):  
    print(i,end=' ')
```

```
0 1 2 3 4 5 6 7 8 9 10 11 12 13
```

---

```
n = int(input("Enter the number "))  
for i in range(1,11):  
    c = n*i  
    print(n,"*",i,"=",c)
```

```
Enter the number 4
```

```
4 * 1 = 4  
4 * 2 = 8  
4 * 3 = 12  
4 * 4 = 16  
4 * 5 = 20  
4 * 6 = 24  
4 * 7 = 28  
4 * 8 = 32  
4 * 9 = 36  
4 * 10 = 40
```

---

```
n = int(input("Enter the number "))  
for i in range(2,n,2):  
    print(i)
```

```
Enter the number 19
```

```
2  
4  
6  
8  
10  
12  
14  
16  
18
```

---

```
list = ['Peter','Shabnam','Ricky','Devansh']  
for i in range(len(list)):  
    print("Hello",list[i])
```

```
Hello Peter  
Hello Shabnam  
Hello Ricky  
Hello Devansh
```

---

```
for i in range(0,7):  
    print(i)
```

```
        else:
            print("for loop completely exhausted, since there is no break."
)
0
1
2
3
4
5
6
for loop completely exhausted, since there is no break.
```

---

```
for i in range(0,7):
    print(i)
    print("bye")
    continue;
    print("hello")
else:print("for loop is exhausted");
print("The loop is broken due to break statement...came out of the
loop")
0
bye
1
bye
2
bye
3
bye
4
bye
5
bye
6
bye
for loop is exhausted
The loop is broken due to break statement...came out of the loop
```

---

```
# prints all letters except 'a' and 't'
i = 0
str1 = 'shabnam'
print(str1)
while i < len(str1):
    print('entered while loop before if statement')
    if str1[i] == 'a' or str1[i] == 'u':
        print('entered if statement')
        i += 1
        print('i incremented')
        continue
    print('after continue')
```

```
    print('Current Letter :', str1[i])
    i += 1
    print('going back to starting of while loop')
```

```
shabnam
entered while loop before if statement
Current Letter : s
going back to starting of while loop
entered while loop before if statement
Current Letter : h
going back to starting of while loop
entered while loop before if statement
entered if statement
i incremented
entered while loop before if statement
Current Letter : b
going back to starting of while loop
entered while loop before if statement
Current Letter : n
going back to starting of while loop
entered while loop before if statement
entered if statement
i incremented
entered while loop before if statement
Current Letter : m
going back to starting of while loop
```

---

```
i = 0
str1 = 'shabnam'

while i < len(str1):
    if str1[i] == 'n':
        i += 1
        break
    print('Current Letter :', str1[i])
    i += 1
```

```
Current Letter : s
Current Letter : h
Current Letter : a
Current Letter : b
Current Letter : a
Current Letter : m
```

---

#The pass statement is used to declare the empty loop.  
#It is also used to define empty class, function, and control statement  
.

```
str1 = 'shabnam'
i = 0

while i < len(str1):
```

```
    i += 1
    pass
print('Value of i :', i)
```

Value of i : 7

---

```
i=1
#The while loop will iterate until condition becomes false.
while(i<=10):
    print(i)
    i=i+1
```

1  
2  
3  
4  
5  
6  
7  
8  
9  
10

---

```
i=1
number = int(input("Enter the number:"))
while i<=10:
    print("%d X %d = %d \n"%(number,i,number*i))
    i = i+1
```

Enter the number:3

3 X 1 = 3

3 X 2 = 6

3 X 3 = 9

3 X 4 = 12

3 X 5 = 15

3 X 6 = 18

3 X 7 = 21

3 X 8 = 24

3 X 9 = 27

3 X 10 = 30

```
while (1):
    print("Hi! we are inside the infinite while loop")
```

[illegible]

[illegible]

[illegible]



[illegible]

[illegible]



```
1
2
3
4
5
The while loop exhausted
```

---

```
i=1
while(i<=5):
    print(i)
    i=i+1
    if(i==3):
        break
else:
    print("The while loop exhausted")
print("bye bye")
```

```
1
2
bye bye
```

---

```
list = [1, 2, 3, 4]
i=1;
count = 1;
for i in list:
    if i == 4:
        print("item matched")
        count = count + 1;
        break
    print("found at", count, "location");
```

```
item matched
found at 2 location
```

---

```
str = "python"
for i in str:
    if i == 'o':
        break
    print(i);
```

```
p
y
t
h
```

---

```
n=2
```

```
while 1:
    i=1;
    while i<=10:
        print("%d X %d = %d\n"%(n,i,n*i));
        i = i+1;
    choice = int(input("Do you want to continue printing the table,
press 0 for no?"))
    if choice == 0:
        break;
    n=n+1
```

2 X 1 = 2

2 X 2 = 4

2 X 3 = 6

2 X 4 = 8

2 X 5 = 10

2 X 6 = 12

2 X 7 = 14

2 X 8 = 16

2 X 9 = 18

2 X 10 = 20

Do you want to continue printing the table, press 0 for no?1

3 X 1 = 3

3 X 2 = 6

3 X 3 = 9

3 X 4 = 12

3 X 5 = 15

3 X 6 = 18

3 X 7 = 21

3 X 8 = 24

3 X 9 = 27

3 X 10 = 30

Do you want to continue printing the table, press 0 for no?1

4 X 1 = 4

4 X 2 = 8

4 X 3 = 12

4 X 4 = 16  
4 X 5 = 20  
4 X 6 = 24  
4 X 7 = 28  
4 X 8 = 32  
4 X 9 = 36  
4 X 10 = 40

Do you want to continue printing the table, press 0 for no?0

---

```
i = 0
while(i < 10):
    i = i+1
    if(i == 5):
        continue
    print(i)
```

1  
2  
3  
4  
6  
7  
8  
9  
10

---

```
str = "Shabnam"
for i in str:
    if(i == 'n'):
        continue
    print(i)
```

S  
h  
a  
b  
a  
m

---

```
list = [1,2,3,4,5]
flag = 0
for i in list:
    print("Current element:",i,end=" ");
```

```
if i==3:
    pass
    print("\nWe are inside pass block\n");
    flag = 1
if flag==1:
    print("\nCame out of pass\n");
    flag=0
```

Current element: 1 Current element: 2 Current element: 3  
We are inside pass block

Came out of pass

Current element: 4 Current element: 5

---

```
for i in [1,2,3,4,5]:
    if(i==4):
        pass
        print("This is pass block",i)
    print(i)
```

1  
2  
3  
This is pass block 4  
4  
5

---

## **IF-ELSE**

```
num = int(input("enter the number?"))
if num%2 == 0:
    print("Number is even")
print("bye")
```

enter the number?111  
bye

---

```
a = int(input("Enter a- "));
b = int(input("Enter b- "));
c = int(input("Enter c- "));
if a>b and a>c:
    print("a is largest");
if b>a and b>c:
```

```
        print("b is largest");
    if c>a and c>b:
        print("c is largest");
```

```
Enter a- 10
Enter b- 20
Enter c- 15
b is largest
```

---

```
age = int (input("Enter your age? "))
if age>=18:
    print("You are eligible to vote !!");
else:
    print("Sorry! you have to wait !!");
```

```
Enter your age? 23
You are eligible to vote !!
```

---

```
num = int(input("enter the number?"))
if num%2 == 0:
    print("Number is even...")
else:
    print("Number is odd...")
```

```
enter the number?23
Number is odd...
```

---

```
number = int(input("Enter the number?"))
if number==10:
    print("number is equals to 10")
elif number==50:
    print("number is equal to 50");
elif number==100:
    print("number is equal to 100");
else:
    print("number is not equal to 10, 50 or 100");
```

```
Enter the number?3435
number is not equal to 10, 50 or 100
```

---

```
number = input("Enter the number?")
if number==10:
    print("number is equals to 10")
elif number==50:
    print("number is equal to 50");
elif number==100:
```



```
    print("number is equal to 100");  
else:  
    print("number is not equal to 10, 50 or 100");
```

Enter the number?22  
number is not equal to 10, 50 or 100

---

```
marks = int(input("Enter the marks? "))  
if marks > 85 and marks <= 100:  
    print("Congrats ! you scored grade A ...")  
elif marks > 60 and marks <= 85:  
    print("You scored grade B + ...")  
elif marks > 40 and marks <= 60:  
    print("You scored grade B ...")  
elif (marks > 30 and marks <= 40):  
    print("You scored grade C ...")  
else:  
    print("Sorry you are fail ?")
```

Enter the marks? 78  
You scored grade B + ...

---