```
# write a python program to print,"Hello world!"
print("Hello world!")
```

```
Hello world!
```

```
# write a python program that displays your name and age
name,age = "rushikesh",27
print("Name: {}\nAge: {}".format(name,age))
```

```
Name: rushikesh
Age: 27
```

```
# write a code to print all the pre-defined keywords in python using the keyword library
import keyword
print("the list of keyword is:")
print(keyword.kwlist)
```

```
the list of keyword is:
['False', 'None', 'True', 'and', 'as', 'assert', 'async', 'await', 'break', 'cla
```

```
# write a program that checks if a given word is a python keyword
import keyword
print(keyword.iskeyword("fun"))
print(keyword.iskeyword("for"))
```

```
False
True
```

```
# create a list and tuple in python,and demonstrate how attempting to change an element wor
a = [(1,'apple'),(2,'banana'),(3,'cherry')]
print(a)
```

```
[(1, 'apple'), (2, 'banana'), (3, 'cherry')]
```

```
# write a function to demonstrate the behavior of mutable and immutable arguments
# immutable objects
tuple1 = (0,1,2)
tuple1[0] = 4
print(tuple1)
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
<ipython-input-7-0a5722c7da6d> in <cell line: 4>()
      2 # immutable objects
      3 tuple1 = (0,1,2)
----> 4 tuple1[0] = 4
      5 print(tuple1)

TypeError: 'tuple' object does not support item assignment
```

```
# mutable objects
my_list = [1,2,3]
my_list.append(4)
print(my_list)
my_list.insert(1,5)
print(my_list)
my_list.remove(2)
print(my_list)
popped_element = my_list.pop(0)
print(my_list)
print(popped_element)
```

```
[1, 2, 3, 4]
[1, 5, 2, 3, 4]
[1, 5, 3, 4]
[5, 3, 4]
1
```

```
# write a program to demonstrate the use of logical operator
# logical and operator
a = 10
b = 10
c = -10
if a > 0 and b > 0:
        print("the numbers are greater than 0")
if a > 0 and b > 0 and c > 0:
        print("the numbers are greater than 0")
else:
       print("atleast one number is not greater than 0")
```

```
the numbers are greater than 0
atleast one number is not greater than 0
```

```
# logical or operator
a = 10
b = -10
c = 0
if a > 0 or b > 0:
```

```
    print("either of the number is greater than 0")
else:
          print("no number is greater than 0")
if b > 0 or c > 0:
            print("either of the number is greater than 0")
else:
                print("no number is greater than 0")
```

```
either of the number is greater than 0
no number is greater than 0
```

```
# logical not operator
a = 10
if not a:
print("Boolean value of a is True")
if not (a % 3 == 0 or a % 5 == 0):
print("10 is not divisible by either 3 or 5")
else:
print("10 is divisible by either 3 or 5")
```

```
10 is divisible by either 3 or 5
```

```
# write a python program to convert user input from string to integer,float,boolean types
# string to into
s = "42"
num = int(s)
print(num)
```

```
42
```

```
# string to float
string = 33.28
num = float(string)
print(num)
print(type(num))
```

```
33.28
<class 'float'>
```

```
# string to boolean
string = "fun and fun"
bool_value = bool(string)
print(bool_value)
```

```
True
```

```
# write code to demonstrate type casting with list elements
# implicit element
a = 10
print(f"a = {a} and data type = {type(a)}")
b = 4.5
print(f"b = {b} and data type = {type(b)}")
c = 4
print(f"c = {c} and data type = {type(c)}")
d = 5.0
```

```
print(f"d = {d} and data type = {type(d)}")
res = a * b
print(f"the product of a and b is {res}, data type = {type(res)}")
add = c + d
print(f"the addition of c and d is {add}, data type = {type(add)}")
```

```
a = 10 and data type = <class 'int'>
b = 4.5 and data type = <class 'float'>
c = 4 and data type = <class 'int'>
d = 5.0 and data type = <class 'float'>
the product of a and b is 45.0, data type = <class 'float'>
the addition of c and d is 9.0, data type = <class 'float'>
```

```
# explicit element
# converting value to an integer
a = 10.6
print(f"a = {a}, data type = {type(a)}")
a = int(a)
print(f"a = {a}, data type = {type(a)}")
b = 12
print(f"b = {b}, data type = {type(b)}")
b = int(b)
print(f"b = {b}, data type = {type(b)}")
```

```
a = 10.6, data type = <class 'float'>
a = 10, data type = <class 'int'>
b = 12, data type = <class 'int'>
b = 12, data type = <class 'int'>
```

```
# converting value to an floating number
c = 10
print(f"c = {c},data type = {type(c)}")
c = float(c)
print(f"c = {c},data type = {type(c)}")
d = "15"
print(f"d = {d},data type = {type(d)}")
d = float(d)
print(f"d = {d},data type = {type(d)}")
```

```
c = 10,data type = <class 'int'>
c = 10.0,data type = <class 'float'>
d = 15,data type = <class 'str'>
d = 15.0,data type = <class 'float'>
```

```
# converting value to a string
a = 10
print(f"a = {a},data type = {type(a)}")
a = str(a)
print(f"a = '{a}',data type = {type(a)}")
b = 15.0
print(f"b = {b},data type = {type(b)}")
b = str(b)
print(f"b = '{b}',data type = {type(b)}")
```

```
a = 10,data type = <class 'int'>
a = '10',data type = <class 'str'>
```

```
b = 15.0,data type = <class 'float'>
b = '15.0',data type = <class 'str'>
```

```
# converting an iterable into list
a = (1,2,3,4,5)
print(f"a = {a},data type = {type(a)}")
a = list(a)
print(f"a = {a},data type = {type(a)}")
b = {1,2,3,4,5}
print(f"b = {b},data type = {type(b)}")
b = list(b)
print(f"b = {b},data type = {type(b)}")
```

```
a = (1, 2, 3, 4, 5),data type = <class 'tuple'>
a = [1, 2, 3, 4, 5],data type = <class 'list'>
b = {1, 2, 3, 4, 5},data type = <class 'set'>
b = [1, 2, 3, 4, 5],data type = <class 'list'>
```

```
# write a program that checks if a number is positive,negative or zero
num = float(input("enter a number:"))
if num > 0:
print("positive number")
elif num == 0:
print("zero")
else:
print("negative number")
```

```
enter a number:13
positive number
```

```
# write a for loop to print numbers from 1 to 10
for i in range(1,11):
  print(i)
```

```
1
2
3
4
5
6
7
8
9
10
```

```
# write a python program to find the sum of all even numbers between 1 and 50
sum_of_evens = 0
for number in range(1,51):
if number % 2 == 0:
  sum_of_evens += number
print("the sum of even numbers from 1 to 50 is:",sum_of_evens)
```

```
the sum of even numbers from 1 to 50 is: 0
the sum of even numbers from 1 to 50 is: 2
the sum of even numbers from 1 to 50 is: 2
```

```
the sum of even numbers from 1 to 50 is: 6
the sum of even numbers from 1 to 50 is: 6
the sum of even numbers from 1 to 50 is: 12
the sum of even numbers from 1 to 50 is: 12
the sum of even numbers from 1 to 50 is: 20
the sum of even numbers from 1 to 50 is: 20
the sum of even numbers from 1 to 50 is: 30
the sum of even numbers from 1 to 50 is: 30
the sum of even numbers from 1 to 50 is: 42
the sum of even numbers from 1 to 50 is: 42
the sum of even numbers from 1 to 50 is: 56
the sum of even numbers from 1 to 50 is: 56
the sum of even numbers from 1 to 50 is: 72
the sum of even numbers from 1 to 50 is: 72
the sum of even numbers from 1 to 50 is: 90
the sum of even numbers from 1 to 50 is: 90
the sum of even numbers from 1 to 50 is: 110
the sum of even numbers from 1 to 50 is: 110
the sum of even numbers from 1 to 50 is: 132
the sum of even numbers from 1 to 50 is: 132
the sum of even numbers from 1 to 50 is: 156
the sum of even numbers from 1 to 50 is: 156
the sum of even numbers from 1 to 50 is: 182
the sum of even numbers from 1 to 50 is: 182
the sum of even numbers from 1 to 50 is: 210
the sum of even numbers from 1 to 50 is: 210
the sum of even numbers from 1 to 50 is: 240
the sum of even numbers from 1 to 50 is: 240
the sum of even numbers from 1 to 50 is: 272
the sum of even numbers from 1 to 50 is: 272
the sum of even numbers from 1 to 50 is: 306
the sum of even numbers from 1 to 50 is: 306
the sum of even numbers from 1 to 50 is: 342
the sum of even numbers from 1 to 50 is: 342
the sum of even numbers from 1 to 50 is: 380
the sum of even numbers from 1 to 50 is: 380
the sum of even numbers from 1 to 50 is: 420
the sum of even numbers from 1 to 50 is: 420
the sum of even numbers from 1 to 50 is: 462
the sum of even numbers from 1 to 50 is: 462
the sum of even numbers from 1 to 50 is: 506
the sum of even numbers from 1 to 50 is: 506
the sum of even numbers from 1 to 50 is: 552
the sum of even numbers from 1 to 50 is: 552
the sum of even numbers from 1 to 50 is: 600
the sum of even numbers from 1 to 50 is: 600
the sum of even numbers from 1 to 50 is: 650
```

```
# write a program to reverse a string using a while loop
str = "rushikesh"
print("the original string is:",str)
reverse_String = ""
count = len(str)
while count > 0:
     reverse_String += str[count - 1]
```

```
    count = count - 1
print("the reverse string using a while loop is:",reverse_String)
```

```
the original string is: rushikesh
the reverse string using a while loop is: hsekihsur
```

```
# write a python program to calculate the factorial of a number provided by the user using
n = int(input("enter any number:"))
f = 1
while n >= 1:
  f *= n
  n -= 1
print("factorial is",f)
```

```
enter any number:5
factorial is 120
```