```
def square(a):
  result = a ** 2
  return result

print(square(20))
```

```
400
```

```
print(square())
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
<ipython-input-3-d818aff99279> in <module>
----> 1 print(square())

TypeError: square() missing 1 required positional argument: 'a'

SEARCH STACK OVERFLOW
```

parameter with default argument

```
def square(a = 5): # parameter a with default argument 5
  result = a ** 2
  return result

print(square(10))
```

```
100
```

```
print(square())
```

```
25
```

```
def testfunction(a,b,c):
  print('a = ',a)
  print('b = ',b)
  print('c = ',c)

testfunction(1,2,3)
```

```
a =  1
b =  2
c =  3
```

```
def testfunction(a = 1,b,c):
  print('a = ',a)
```

```
  print('b = ',b)
  print('c = ',c)
```

```
    File "<ipython-input-9-fcfe7d726350>", line 1
      def testfunction(a = 1,b,c):
                                  ^
SyntaxError: non-default argument follows default argument
```

SEARCH STACK OVERFLOW

```
def testfunction(a,b,c = 1):
  print('a = ',a)
  print('b = ',b)
  print('c = ',c)
```

```
testfunction(10,20,30)
```

```
a =  10
b =  20
c =  30
```

```
testfunction(10,20)
```

```
a =  10
b =  20
c =  1
```

```
testfunction(10,200)
```

```
a =  10
b =  200
c =  1
```

```
def testfunction(a=3,b=2,c = 1):
  print('a = ',a)
  print('b = ',b)
  print('c = ',c)
```

```
testfunction(10,15,25)
```

```
a =  10
b =  15
c =  25
```

```
def testfunction(a=3,b=2,c = 1):
  print('a = ',a)
  print('b = ',b)
  print('c = ',c)
```

```
testfunction(10,25)
```

```
a =  10
b =  25
c =  1
```

```
def testfunction(a=3,b=2,c = 1):
  print('a = ',a)
  print('b = ',b)
  print('c = ',c)

testfunction(10)
```

```
a =  10
b =  2
c =  1
```

```
def testfunction(a=3,b=2,c = 1):
  print('a = ',a)
  print('b = ',b)
  print('c = ',c)

testfunction()
```

```
a =  3
b =  2
c =  1
```

```
def testfunction(a=3,b=2,c = 1):
  print('a = ',a)
  print('b = ',b)
  print('c = ',c)

testfunction(10,20,30,40)
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
<ipython-input-20-aea3c9375a40> in <module>
      4   print('c = ',c)
      5
----> 6 testfunction(10,20,30,40)

TypeError: testfunction() takes from 0 to 3 positional arguments but 4 were given
```

SEARCH STACK OVERFLOW

```
def testfunction(a=3,b=2,c = 1):
  print('a = ',a)
  print('b = ',b)
  print('c = ',c)

testfunction(c=10,a=20,b=30)
```

```
a =  20
b =  30
c =  10
```

```
def testfunction(a=3,b=2,c = 1):
  print('a = ',a)
  print('b = ',b)
  print('c = ',c)

testfunction(c1=10,a1=20,b1=30)
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
<ipython-input-23-a7504fa4a9be> in <module>
      4   print('c = ',c)
      5
----> 6 testfunction(c1=10,a1=20,b1=30)

TypeError: testfunction() got an unexpected keyword argument 'c1'
```

SEARCH STACK OVERFLOW

```
def testfunction(a=3,b=2,c = 1):
  print('a = ',a)
  print('b = ',b)
  print('c = ',c)

testfunction(c=10,a=20,30)
```

```
  File "<ipython-input-24-13f7572de353>", line 6
    testfunction(c=10,a=20,30)
                             ^
SyntaxError: positional argument follows keyword argument
```

SEARCH STACK OVERFLOW

```
def testfunction(a=3,b=2,c = 1):
  print('a = ',a)
  print('b = ',b)
  print('c = ',c)

testfunction(a=10,a=20,30)
```

```
  File "<ipython-input-25-87ca2fd9cf2e>", line 6
    testfunction(a=10,a=20,30)
                             ^
SyntaxError: positional argument follows keyword argument
```

SEARCH STACK OVERFLOW

```
def testfunction(a=3,b=2,c = 1):
  print('a = ',a)
```

```
  print('b = ',b)
  print('c = ',c)

testfunction(a=10,a=20,a=30)
```

```
      File "<ipython-input-26-bb09282a98b6>", line 6
        testfunction(a=10,a=20,a=30)
                          ^
    SyntaxError: keyword argument repeated: a
```

SEARCH STACK OVERFLOW

```
def testfunction(a=3,b=2,c = 1):
  print('a = ',a)
  print('b = ',b)
  print('c = ',c)

testfunction(10,20,c=30)
```

```
    a =  10
    b =  20
    c =  30
```

```
def testfunction(a=3,b=2,c = 1):
  print('a = ',a)
  print('b = ',b)
  print('c = ',c)

testfunction(10,b=20,c=30)
```

```
    a =  10
    b =  20
    c =  30
```

```
def testfunction(a=3,b=2,c = 1):
  print('a = ',a)
  print('b = ',b)
  print('c = ',c)

testfunction(10,b=20)
```

```
    a =  10
    b =  20
    c =  1
```

```
def testfunction(a=3,b=2,c = 1):
  print('a = ',a)
  print('b = ',b)
  print('c = ',c)
```

```
testfunction(b=10,a=20,30)
```

```
  File "<ipython-input-31-8f305fd7212c>", line 6
    testfunction(b=10,a=20,30)
                            ^
SyntaxError: positional argument follows keyword argument
```

SEARCH STACK OVERFLOW

```
def testfunction(a=3,b=2,c = 1):
  print('a = ',a)
  print('b = ',b)
  print('c = ',c)

testfunction(10,c=20,b=30)
```

```
a =  10
b =  30
c =  20
```

```
def testfunction(a=3,b=2,c = 1):
  print('a = ',a)
  print('b = ',b)
  print('c = ',c)

testfunction()
```

```
a =  3
b =  2
c =  1
```

```
def testfunction(a=3,b=2,c = 1):
  print('a = ',a)
  print('b = ',b)
  print('c = ',c)

testfunction(100)
```

```
a =  100
b =  2
c =  1
```

```
def testfunction(a=3,b=2,c = 1):
  print('a = ',a)
  print('b = ',b)
  print('c = ',c)

testfunction(a=100)
```

```
a =  100
b =  2
c =  1
```

```
def testfunction(a=3,b=2,c = 1):
  print('a = ',a)
  print('b = ',b)
  print('c = ',c)

testfunction(b=100)
```

```
a =  3
b =  100
c =  1
```

```
def testfunction(a=3,b=2,c = 1):
  print('a = ',a)
  print('b = ',b)
  print('c = ',c)

testfunction(c=100)
```

```
a =  3
b =  2
c =  100
```

```
def testfunction(a=3,b=2,c = 1):
  print('a = ',a)
  print('b = ',b)
  print('c = ',c)

testfunction(1,2,3)
```

```
a =  1
b =  2
c =  3
```

```
def testfunction(a=3,b=2,c = 1):
  print('a = ',a)
  print('b = ',b)
  print('c = ',c)

testfunction(1,2,3,4)
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
<ipython-input-39-9ddc9e270186> in <module>
      4   print('c = ',c)
      5
----> 6 testfunction(1,2,3,4)

TypeError: testfunction() takes from 0 to 3 positional arguments but 4 were given
```

SEARCH STACK OVERFLOW

function definition to accept variable number of arguments

```
def test(*a):
  print(a)

test(100)
```

```
    (100,)
```

```
test(100,200)
```

```
    (100, 200)
```

```
def v_arguments(*a):
  for value in a:
    print(value,end=' ')

v_arguments(1,2,3,4,5,6,True,False,100.89,'python')
```

```
    1 2 3 4 5 6 True False 100.89 python
```

```
def testdata(a,*b):
  print(a)
  for i in b:
    print(i,end=' ')

testdata(10,20)
```

```
    10
    20
```

```
testdata(10,20,30,40)
```

```
    10
    20 30 40
```

```
def testdata(*a,b):
  print(a)
  for i in b:
    print(i,end=' ')

testdata(10,20,30)
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
<ipython-input-52-920eab856e57> in <module>
----> 1 testdata(10,20,30)

TypeError: testdata() missing 1 required keyword-only argument: 'b'
```

function definition to accept variable number of keyword arguments

```
def details(**a):
  print(a)
  print(type(a))

details(name='lokesh',email='lokesh@gmail.com',mobile=9390018934)
```

```
{'name': 'lokesh', 'email': 'lokesh@gmail.com', 'mobile': 9390018934}
<class 'dict'>
```

```
def mydetails(**a):
  for key,value in a.items():
    print(key,value,sep=' : ')

mydetails(name='venkat',
          email='venkat@gmail.com',
          mobile=9390018934,
          address='JNTU',
          technology='c++')
```

```
name : venkat
email : venkat@gmail.com
mobile : 9390018934
address : JNTU
technology : c++
```

```
# write a function to display given number is prime or not
```

✓ 0s completed at 2:08 PM