

# Complex () function in Python

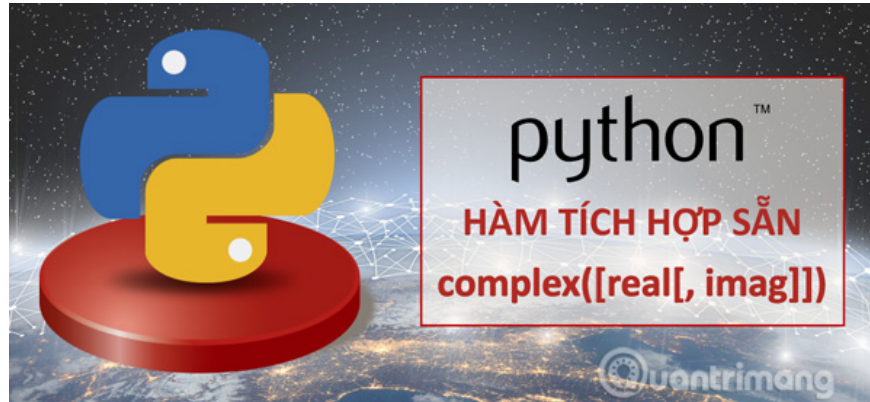
In Python, the `complex ()` function returns a complex number when the user provides a virtual and real part, or turns a string into a complex number. How does the `complex ()` function syntax, what parameters do it have, and how is it used? Invites you to read the track.

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## Complex () function syntax in Python

```
complex ([phanthuc [, phanao]])
```

## Complex function parameters ()



**complex** has two parameters:

1. *phanthuc*: the real part of the complex number returns, if this parameter is left blank, Python defaults to 0.
2. *phanao*: the virtual part of the complex number returns, if this parameter is left blank, Python defaults to 0.

If the first parameter passed into `complex` is a string, it will be interpreted as a complex number. In this case you should not pass the second parameter.

## The value returned from complex ()

The `complex()` function returns a complex number.

If the string is passed into a function that is not a complex number, an exception (exception) `ValueError` will occur.

**Note:** The transmitted string must be in `phantuc + phanaoj` or `phantuc + phanaoJ` format.

### Example 1: How to create complex numbers in Python

```
z = complex(2, -3)
print(z)

z = complex(1)
print(z)

z = complex()
print(z)

z = complex('5-9j')
print(z)
```

Run the program, the result is:

```
(2-3j)
(1 + 0j)
0j
(5-9j)
```

### Example 2: Complex numbers do not use `complex()` function

In Python, you can create a complex number without using the `complex()` function.

To do that, you must put `'j'` or `'J'` after some to Python identity.

```
a = 2+3j
print('a =', a)

b = -2j
print('b =', b)

c = 0j
print('c =', c)
```

The output returned is:

```
a = (2+3j)
b = (-0-2j)
c = 0j
```

See more:

1. Built-in Python functions

2. Python functions are user defined
3. Variable types in Python

Previous lesson: classmethod () function in Python

Next article: compile () function in Python

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