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[python: how to identify the type of your variable](#)

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In python, every single variable is an object, every object must have a type, it is either data structure or class instances. Python's variable can be dynamically change easily during runtime, for example

```
>>> d={1:'one',2:'two'}
>>> print d
{1: 'one', 2: 'two'}
>>> d=['one','two']
>>> print d
['one', 'two']
```

First line *d* is declare as dict data type, and after 3rd line, *d* becomes list.

How to check whether d is dict or list?

You can either use `type()` or `.__class__`

```
>>> type(d)
<type 'list'>
>>> print d.__class__
<type 'list'>
```

How to check the type using if statement?

I want to check the type during runtime, not at interactive python shell.

```
d={}
if type(d).__name__=='dict':
```

```
    print 'Its dict!'
else:
    print 'Its not dict'
```

or this works too.

```
d={}
if type(d)==type(dict()):
    print 'Its dict!'
else:
    print 'Its not dict'
```

If an object is an instant of a class, it will be tricky. Let say we have define a class call myclass. Instantiate c as an object of myclass.

```
class myclass():
    pass

c=myclass()
>>> type(c).__name__
'instance'
```

Type(c) will gives result 'instance', telling you that this object is an instance of a class. I am more interested to find out what class an object instantiate from, so I do this:

```
if c.__class__.__name__==myclass.__name__:
    print 'c is an instant of myclass'
else:
    print 'c is something else'
```

Or something like that,

```
if type(c).__name__=='instance':
    if c.__class__.__name__=='myclass':
        print 'its from myclass'
```

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In python, we have various type of data structure, such as list, set, tuple, dictionary etc, but in Lua, we only have ta...

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14 Responses to “python: how to identify the type of your variable”

1. *anon* Says:

[November 10th, 2007 at 4:57 am](#)

You might want to check out `isinstance()`

```
>>> d = {}
>>> isinstance(d, dict)
True
>>> isinstance(d, int)
False
>>> class MyClass():
... pass
...
>>> c = MyClass()
>>> isinstance(c, MyClass)
True
```

2. *mysurface* Says:

[November 10th, 2007 at 7:40 am](#)

anon: Thx, this is what I looking for.

3. *toydi* Says:

[November 11th, 2007 at 9:52 pm](#)

> “every single variable is an object”

if “variable” is `d` in `print d`, perhaps it can be rephrased as “a variable is a name for an object”, since an object has one unique id but can have several name.

4. *Francesco* Says:

[November 12th, 2007 at 11:25 pm](#)

Hi, good blog!
Saluti dall'Italia!

By
Francesco

5. [*Nilesh*](#) Says:
[December 8th, 2008 at 2:51 pm](#)

THANK YOU SOOOOOOO MUCH!!! for including how to find out what object a particular variable is. THANK YOU THANK YOU THANK YOU!!!

6. [*Python vs Lua, data structure*](#) Says:
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[...] dictionary. I might be wrong about this, because I see something like this in django. Related Postspython: how to identify the type of your variable In python, every single variable is an object, every object must have a type, it is either data [...]

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[September 9th, 2011 at 2:12 am](#)

```
d={}
if type(d).__name__=='dict':
    print 'Its dict!'
else:
    print 'Its not dict'
```

I believe it would be better to import types and do the following:

type(d) is types.DictionaryTypes

It will also work for modules, functions, ints, lists, etc.

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