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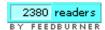
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Python

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python: how to identify the type of your variable

November 10th, 2007 mysurface Posted in <u>Developer</u>, <u>python</u> | Hits: 180427 | <u>14</u> <u>Comments</u> »

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

6. <u>Python vs Lua, data structure</u> Says: February 5th, 2009 at 1:43 am

[...] 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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8. *photo gallery* Says: July 3rd, 2011 at 10:31 am

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9. <u>belly fat</u> Says: July 6th, 2011 at 9:09 am

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13. <u>crabgrass killer</u> Says: <u>July 19th, 2011 at 5:29 pm</u>

whoah this blog is magnificent i love reading your posts. Keep up the great work! You know, many people are looking around for this information, you could help them greatly.

14. wleao Says:

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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