



# Object Oriented Programming in Python | Set 2 (Data Hiding and Object Printing)

Prerequisite: Object-Oriented [Programming in Python | Set 1 \(Class, Object and Members\)](#).

## Data hiding

In Python, we use double underscore (Or \_\_) before the attributes name and those attributes will not be directly visible outside.

## Python

```
class MyClass:

    # Hidden member of MyClass
    __hiddenVariable = 0
```

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```
print (self.__hiddenVariable)
```

```
# Driver code
myObject = MyClass()
myObject.add(2)
myObject.add(5)

# This line causes error
print (myObject.__hiddenVariable)
```

Output :



```
2
7
Traceback (most recent call last):
  File "filename.py", line 13, in
    print (myObject.__hiddenVariable)
AttributeError: MyClass instance has
no attribute '__hiddenVariable'
```

In the above program, we tried to access a hidden variable outside the class using an object and it threw an exception.

We can access the value of a hidden attribute by a tricky syntax:

## Python

```
# A Python program to demonstrate that hidden
# members can be accessed outside a class
class MyClass:
    # Hidden member of MyClass
    __hiddenVariable = 10

# Driver code
myObject = MyClass()
print(myObject._MyClass__hiddenVariable)
```

Output :

```
10
```

Private methods are accessible outside their class, just not easily accessible.

**Nothing in Python is truly private; internally**, the names of private methods and

attributes are mangled and unmangled on the fly to make them seem inaccessible by their given names [See [this](#) for source ].

## Printing Objects

Printing objects give us information about objects we are working with. In C++, we can do this by adding a friend ostream& operator << (ostream&, const Foobar&) method for the class. In Java, we use toString() method. In python, this can be achieved by using \_\_repr\_\_ or \_\_str\_\_ methods.

## Python

```
class Test:
    def __init__(self, a, b):
        self.a = a
        self.b = b

    def __repr__(self):
        return "Test a:%s b:%s" % (self.a, self.b)

    def __str__(self):
        return "From str method of Test: a is %s, " \
               "b is %s" % (self.a, self.b)

# Driver Code
t = Test(1234, 5678)
print(t) # This calls __str__()
print([t]) # This calls __repr__()
```

Output :

```
From str method of Test: a is 1234,b is 5678
[Test a:1234 b:5678]
```

### Important Points about Printing:

- If no \_\_str\_\_ method is defined, print t (or print str(t)) uses \_\_repr\_\_.

## Python

```
class Test:
    def __init__(self, a, b):
        self.a = a
        self.b = b

    def __repr__(self):
        return "Test a:%s b:%s" % (self.a, self.b)

# Driver Code
t = Test(1234, 5678)
```

```
print(t)
```

Output :

```
Test a:1234 b:5678
```

- If no `__repr__` method is defined then the default is used.

## Python

```
class Test:
    def __init__(self, a, b):
        self.a = a
        self.b = b

# Driver Code
t = Test(1234, 5678)
print(t)
```

Output :

```
<__main__.Test instance at 0x7fa079da6710>
```

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