

Difference between Python 2 & 3

Hands-on Guide

edureka!

edureka!

© 2014 Brain4ce Education Solutions Pvt. Ltd.

Difference between Python 2 & 3

Hands-on Guide

Table of Contents

1. The 'print' statement/function	2
2. Division.....	3
3. Input.....	4
4. Files	5
5. Range	6

edureka!

Difference between Python 2 and Python 3

The 'print' statement/function

- The “print” statement in Python 2 becomes a “print()” function in Python 3.
- If you are familiar with the print() function in Python 3, you can still choose to use it when coding in Python 2 by using the `__future__` module from future
`import print_function`

```
edureka@ubuntu:~$ python
Python 2.7.6 (default, Mar 22 2014, 22:59:56)
[GCC 4.8.2] on linux2
Type "help", "copyright", "credits" or "license" for more
information.
>>> print "I learn at",; print "Edureka"
I learn at Edureka
```

Version 2.7.6

```
edureka@ubuntu:~$ python3
Python 3.4.1 (default, Jun 5 2014, 01:48:07)
[GCC 4.8.2] on linux
Type "help", "copyright", "credits" or "license" for more
information.
>>> print("I learn at", end=" ");print("Edureka")
I learn at Edureka
```

Version 3.4.1

```
edureka@ubuntu:~$ python3
Python 3.4.1 (default, Jun 5 2014, 01:48:07)
[GCC 4.8.2] on linux
Type "help", "copyright", "credits" or "license" for more
information.
>>> print("07", "06", "2014", sep="-")
07-06-2014
```

Version 3.4.1

Division

- `int/int` always returns an `int` in Python 2, truncating the result if it's not a whole number. In order to get a float result from division you must have at least one float argument.
- `int/int` always returns a float in Python 3, even if the result is a whole number. In Python 3 `int//int` always returns an `int`, truncating the result if it's not a whole number, in the same way a single `/` works in Python 2.

You can use the division operator from Python 3 in Python 2 by importing it from the `__future__` module from `future import division`

```
edureka@ubuntu:~$ python
Python 2.7.6 (default, Mar 22 2014, 22:59:56)
[GCC 4.8.2] on linux2
Type "help", "copyright", "credits" or "license" for more
information.
>>> 5/2
2
>>> 5.0/2
2.5
>>> 5//2
2
Version 2.7.6
```

```
edureka@ubuntu:~$ python3
Python 3.4.1 (default, Jun 5 2014, 01:48:07)
[GCC 4.8.2] on linux
Type "help", "copyright", "credits" or "license" for more
information.
>>> 5/2
2.5
>>> 5.0/2
2.5
>>> 5//2
2
Version 3.4.1
```

Input

The `raw_input()` function in Python 2 is equivalent to `input()` in Python 3. These functions always return user input as a `STRING`, which must be converted if you want a different type.

```
edureka@ubuntu:~$ python
Python 2.7.6 (default, Mar 22 2014, 22:59:56)
[GCC 4.8.2] on linux2
Type "help", "copyright", "credits" or "license" for more
information.
>>> the_input_string = raw_input() ← Raw input for string
Edureka
>>> the_input_float = float(raw_input()) ← Raw input for float
4.3
>>> the_input_int = int(raw_input()) ← Raw input for Integer
4
Version 2.7.6
```

```
edureka@ubuntu:~$ python3
Python 3.4.1 (default, Jun 5 2014, 01:48:07)
[GCC 4.8.2] on linux
Type "help", "copyright", "credits" or "license" for more
information.
>>> the_input_string = input() ← Raw input for string
Edureka
>>> the_input_float = float(input()) ← Raw input for float
4.3
>>> the_input_int = int(input()) ← Raw input for Integer
4
Version 3.4.1
```

Files

- The file command in Python 2 is removed in Python 3, you have to use the open() function instead.

```
edureka@ubuntu:~$ python
Python 2.7.6 (default, Mar 22 2014, 22:59:56)
[GCC 4.8.2] on linux2
Type "help", "copyright", "credits" or "license" for more
information.
>>> for line in file("/home/edureka/Desktop/input"):
...     print line
...
I learn at Edureka!

Python is what I learn here.
```

Version 2.7.6

```
edureka@ubuntu:~$ python3
Python 3.4.1 (default, Jun  5 2014, 01:48:07)
[GCC 4.8.2] on linux
Type "help", "copyright", "credits" or "license" for more
information.
>>> inputFile = open("/home/edureka/Desktop/input",'r')
>>> for line in inputFile:
...     print(line, end='')
...
I learn at Edureka!

Python is what I learn here.
```

Version 3.4.1

Range

- The range() function in Python 3 is like xrange() in Python 2, it does not return a list and can handle an arbitrarily large value.

```
edureka@ubuntu:~$ python
Python 2.7.6 (default, Mar 22 2014, 22:59:56)
[GCC 4.8.2] on linux2
Type "help", "copyright", "credits" or "license" for more
information.
>>> E = range(10)
>>> E
[0, 1, 2, 3, 4, 5, 6, 7, 8, 9] Version 2.7.6
```

```
edureka@ubuntu:~$ python3
Python 3.4.1 (default, Jun 5 2014, 01:48:07)
[GCC 4.8.2] on linux
Type "help", "copyright", "credits" or "license" for more
information.
>>> E = list(range(10))
>>> E
[0, 1, 2, 3, 4, 5, 6, 7, 8, 9] Version 3.4.1
```