

Python number formatting examples

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All examples assume Python 3+



See the [difference between truncating and rounding a number](http://www.mathwords.com/t/truncating_a_number.htm)
(http://www.mathwords.com/t/truncating_a_number.htm)

All examples can be viewed [on this jupyter notebook](https://nbviewer.jupyter.org/github/queirozfc.com/python-sandbox/blob/master/python3/notebooks/number-formatting-post/main.ipynb?flush_cache=true) (https://nbviewer.jupyter.org/github/queirozfc.com/python-sandbox/blob/master/python3/notebooks/number-formatting-post/main.ipynb?flush_cache=true)

Round float to 2 decimal places

```
print('{:.2f}'.format(5.39120))  
# >>> '5.40'
```

Format float as percentage

Format a number as a percentage, with 2 decimal places

```
'{:.2f}%'.format(10.12345)  
# >>> '10.12%'
```



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-42%

-34%

Truncate float at 2 decimal places

»

View the full code for a generalized version [on this notebook](https://nbviewer.jupyter.org/github/queirozfc/python-sandbox/blob/master/python3/notebooks/number-formatting-post/main.ipynb?flush_cache=true#truncate-to-at-most-2-decimal-places)

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Drop digits after the second decimal place (if there are any).

```
import re

# see the notebook for a generalized version
def truncate(num):
    return re.sub(r'^(\d+\.\d{,2})\d*$', r'\1', str(num))

truncate(8.499)
# >>> '8.49'

truncate(8.49)
# >>> '8.49'

truncate(8.4)
# >>> '8.4'

truncate(8.0)
# >>> '8.0'

truncate(8)
# >>> '8'
```

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Left padding with zeros

Example make the full size equal to 9 (all included), filling with zeros to the left:

Make the total string size AT LEAST 9 (including digits and signs). Fill with zeros to the left.

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```
# make the total string size AT LEAST 2 (all included), fill with zeros to the left
'{:0>2}'.format(3)
# >>> '03'
```

NAVIGATION 

Right padding with zeros

Example make the full size equal to 11, filling with zeros to the right:

```
'{:<011}'.format(3.499)
# >>> '3.499000000'
```

Use commas as thousands separator

```
'{:,}'.format(100000)
# >>> '100,000'
```

Interpolate variable with f-strings

You can use any of the other formatting options with **f-strings**:

Example: truncate to 2 decimal places in f-string

```
num = 1.12745

formatted = f"{num:.2f}"
formatted
# >>> '1.13'
```

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ValueError: zero length field name in format

In some Python versions such as 2.6 and 3.0, you **must specify** positional indexes in the format string:

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ValueError in python 2.6 and 3.0

```
a=1
b=2
("{}-{}".format(a,b))
```

NO ERROR in any python version

```
"{0}-{1}".format(a,b)
# >>> "1-2"
```

References

- [Python 3 docs: Format Specification Mini Language \(https://docs.python.org/3.6/library/string.html#format-specification-mini-language\)](https://docs.python.org/3.6/library/string.html#format-specification-mini-language)

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