

How to fix Runtime Warning: overflow encountered in exp

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Fix: RuntimeWarning: overflow encountered in exp

One warning you may encounter in Python is:

RuntimeWarning: overflow encountered in exp

This warning occurs when you use the NumPy exp function, but use a value that is too large for it to handle.

It's important to note that this is simply a warning and that NumPy will still carry out the calculation you requested, but it provides the warning by default.

When you encounter this warning, you have two options:

1. Ignore it.
2. Suppress the warning entirely.

The following example shows how to address this warning in practice.

How to Reproduce the Warning

Suppose we perform the following calculation in

Python:

```
import numpy as np
```

```
#perform some calculation
```

```
print(1/(1+np.exp(1140)))
```

```
0.0
```

```
/srv/conda/envs/notebook/lib/python3.7/site-packages/ipykernel_launcher.py:3:
```

```
RuntimeWarning: overflow encountered in exp
```

Notice that NumPy performs the calculation (the result is 0.0) but it still prints the RuntimeWarning.

This warning is printed because the value `np.exp(1140)` represents e^{1140} , which is a *massive* number.

We basically requested NumPy to perform the following calculation:

$1 / (1 + \text{massive number})$

This can be reduced to:

1 / massive number

How to Suppress the Warning

If we'd like, we can use the warnings package to suppress warnings as follows:

```
import numpy as np
import warnings

#suppress warnings
warnings.filterwarnings('ignore')

#perform some calculation
print(1/(1+np.exp(1140)))

0.0
```

Notice that NumPy performs the calculation and does not display a RuntimeWarning.

Note: In general, warnings can be helpful for identifying bits of code that take a long time to run so be highly selective when deciding to suppress warnings.

The following tutorials explain how to fix other common

errors in Python:

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