

pitfalls

September 29, 2024

0.1 An import command fails:

```
[2]: import tk
```

```
-----  
ModuleNotFoundError                                Traceback (most recent call last)  
Cell In[2], line 1  
----> 1 import tk  
  
ModuleNotFoundError: No module named 'tk'
```

The module you tried to import has not been installed for your version of python. Here is a fix

```
[3]: # pip is a python package manager  
# the '!' causes the command to be run outside of the notebook  
# so that it takes effect environment-wide  
!pip install tk
```

```
Collecting tk  
  Using cached tk-0.1.0-py3-none-any.whl.metadata (693 bytes)  
Using cached tk-0.1.0-py3-none-any.whl (3.9 kB)  
Installing collected packages: tk  
Successfully installed tk-0.1.0
```

```
[4]: import tk
```

0.2 You get a ‘TypeError’:

TypeError: can't multiply sequence by non-int of type 'numpy.float64'

```
[5]: import numpy as np  
import matplotlib.pyplot as plt  
from matplotlib import gridspec  
%matplotlib inline  
from scipy.optimize import curve_fit  
import os  
  
def sl(x, m, b):
```

```

    return m*x+b

basedir = '/home/david/gh/intro_curve_fitting_python'
fn = basedir+'/linear_data/linear1.csv'

x = []
y = []

inf = open(fn)

for line in inf:
    line = line.rstrip()
    la = line.split(',')
    x.append(float(la[0]))
    y.append(float(la[1]))

inf.close()

popt, pcov = curve_fit(sl, x, y)

residuals = y-sl(x, *popt)
residuals

```

```

-----
TypeError                                Traceback (most recent call last)
Cell In[5], line 29
     25 inf.close()
     27 pop, pcov = curve_fit(sl, x, y)
----> 29 residuals = y-sl(x, *pop)
     30 residuals

Cell In[5], line 9, in sl(x, m, b)
      8 def sl(x, m, b):
----> 9     return m*x+b

TypeError: can't multiply sequence by non-int of type 'numpy.float64'

```

Your variables `x` and `y` are ordinary python lists, not numpy arrays. Change them into numpy arrays:

```

[6]: print(type(x))
      print(type(x[0]))

x = np.array(x)
y = np.array(y)

```

```
print(type(x))
print(type(x[0]))

popt, pcov = curve_fit(sl, x, y)

residuals = y-sl(x, *popt)
residuals
```

```
<class 'list'>
<class 'float'>
<class 'numpy.ndarray'>
<class 'numpy.float64'>
```

```
[6]: array([2.18136620e-12, 2.18136620e-12, 2.18092211e-12, 2.18092211e-12,
          2.18092211e-12, 2.18092211e-12, 2.18103313e-12, 2.18098450e-12,
          2.18103313e-12, 2.18092211e-12, 2.18092211e-12, 2.18092211e-12,
          2.18092211e-12, 2.18136620e-12, 2.18136620e-12])
```

```
[7]: !pip uninstall -y tk
```

```
Found existing installation: tk 0.1.0
Uninstalling tk-0.1.0:
  Successfully uninstalled tk-0.1.0
```

```
[ ]:
```