INTRO TO PYTHON 2

Be sure to get an account at

https://research.google.com/colaboratory/

DataNexus
ANALYZE • INTERPRET

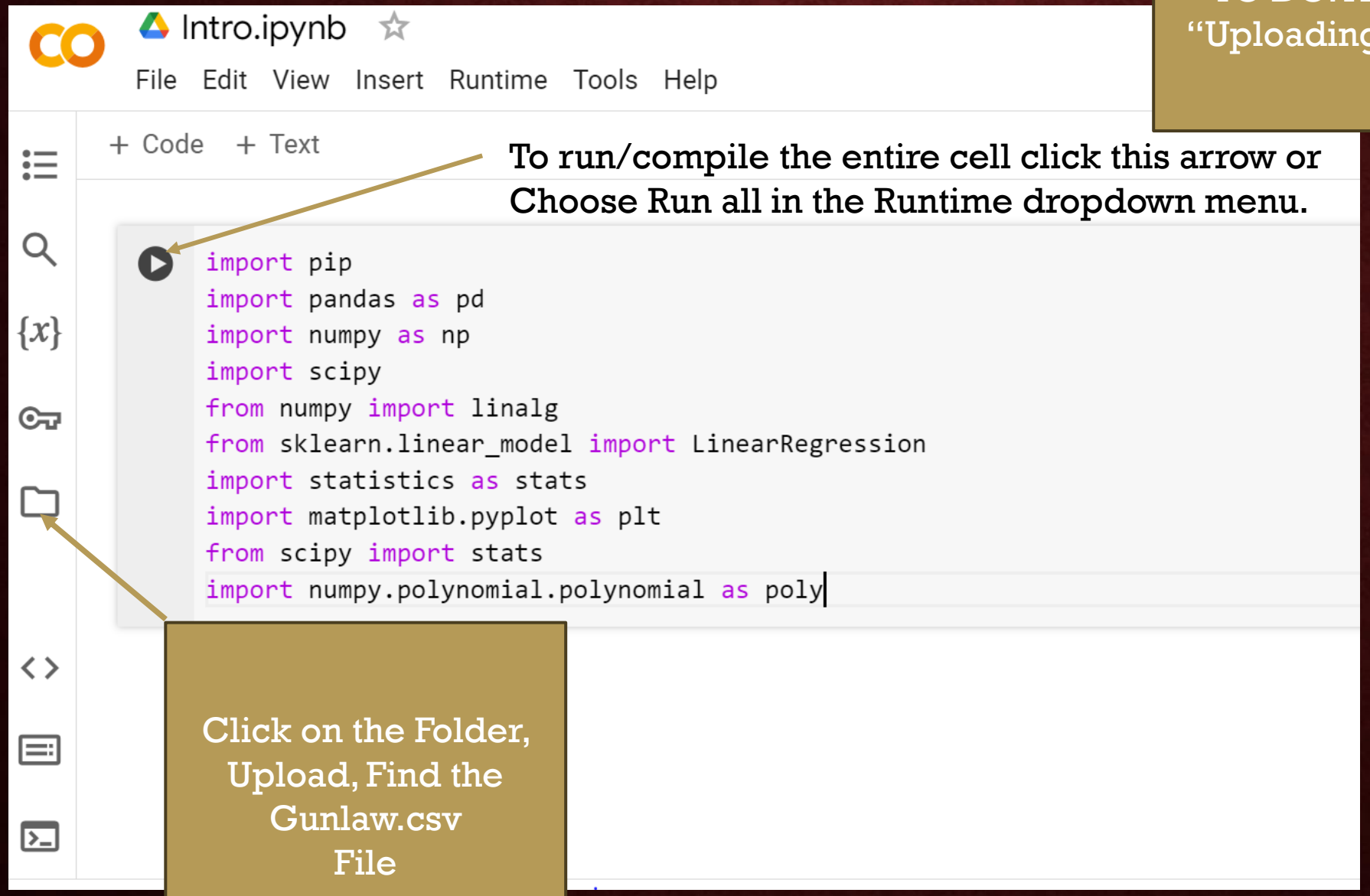
DOWNLOAD THE DATA FOR THIS SESSION

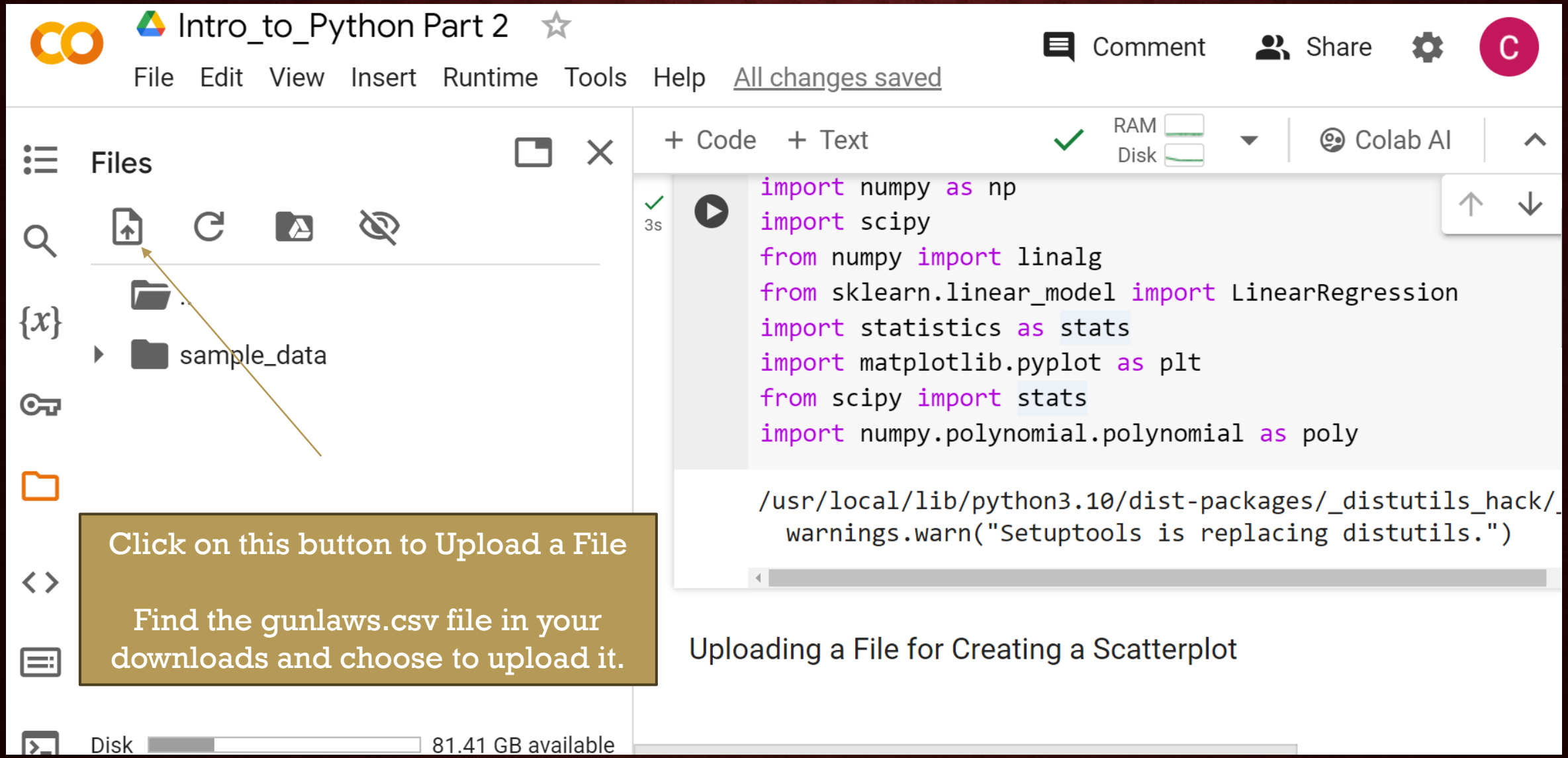
Before we begin download

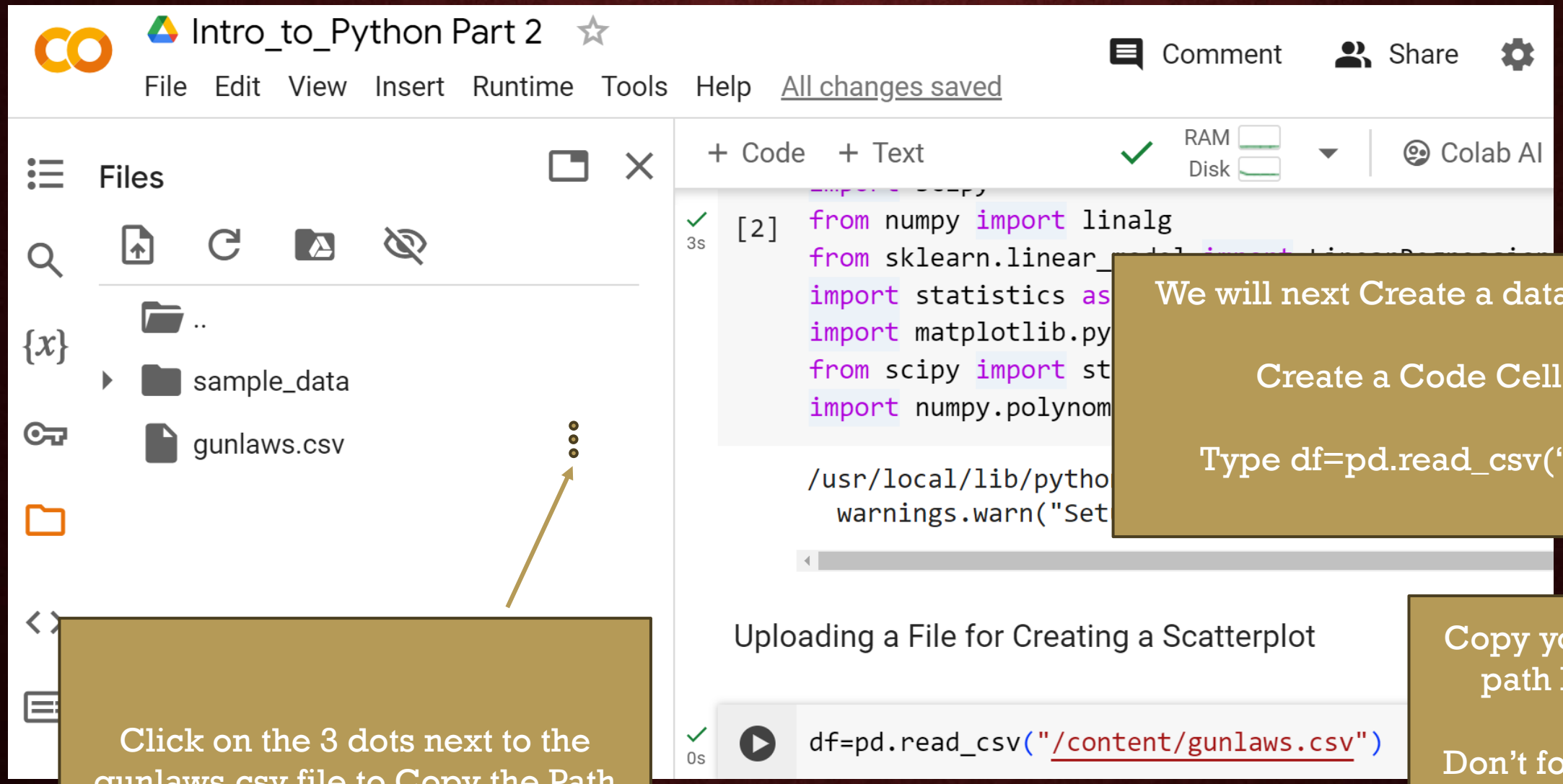
gunlaws.csv from our website

DataNexus
ANALYZE • INTERPRET

TO DO: Add a Text cell and Type "Uploading a Dataset for Creating a Scatterplot"




Intro_to_Python Part 2
File Edit View Insert Runtime Tools Help All changes saved
Comment
Share
C
Files
+ Code + Text
RAM
Disk
Colab AI
sample_data
3s
import numpy as np
import scipy
from numpy import linalg
from sklearn.linear_model import LinearRegression
import statistics as stats
import matplotlib.pyplot as plt
from scipy import stats
import numpy.polynomial.polynomial as poly
/usr/local/lib/python3.10/dist-packages/_distutils_hack/
warnings.warn("Setuptools is replacing distutils.")
Click on this button to Upload a File
Find the gunlaws.csv file in your downloads and choose to upload it.
Uploading a File for Creating a Scatterplot
Disk
81.41 GB available


Intro_to_Python Part 2
File Edit View Insert Runtime Tools Help All changes saved
Comment
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sample_data
gunlaws.csv
+ Code + Text
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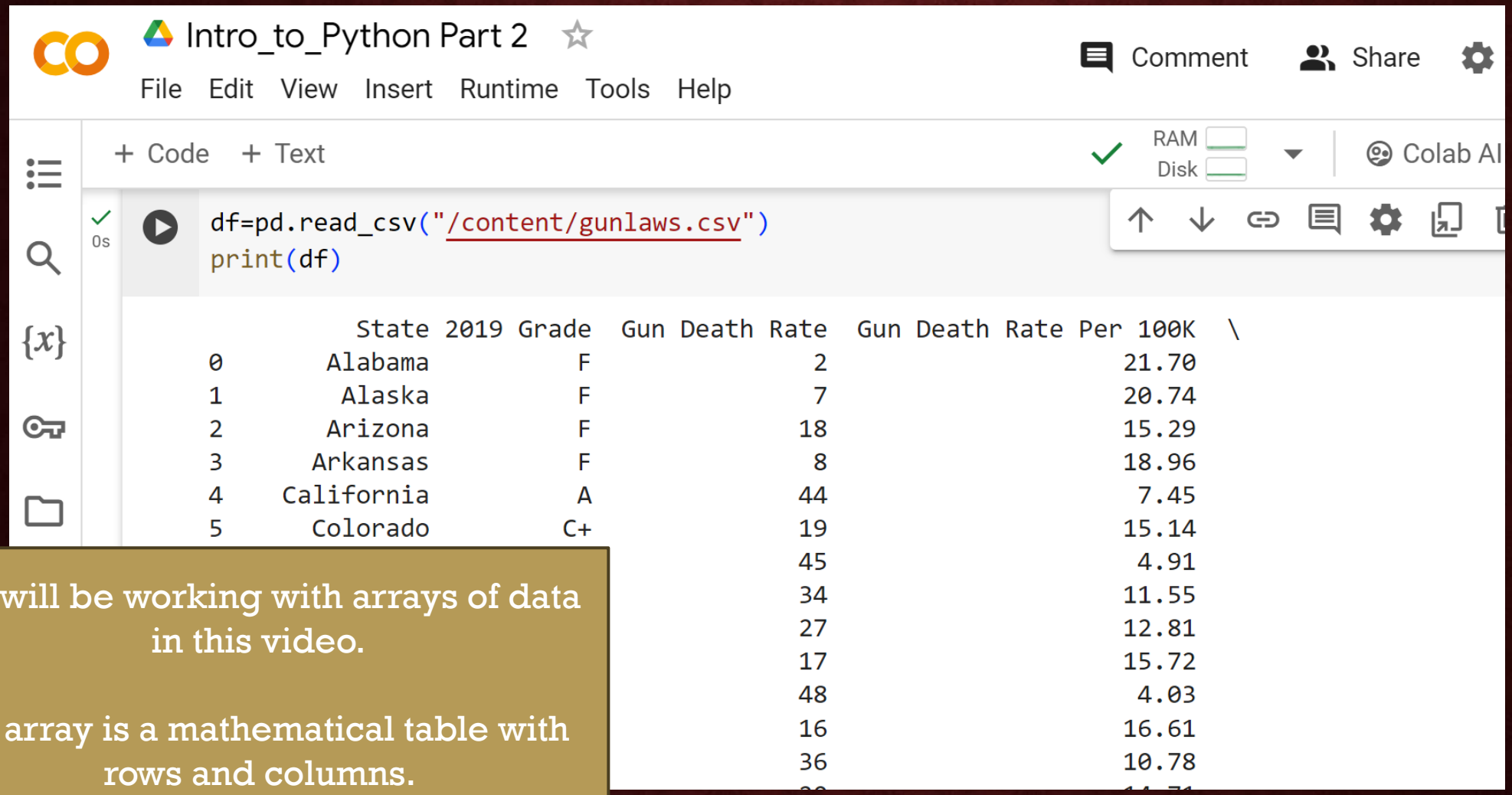
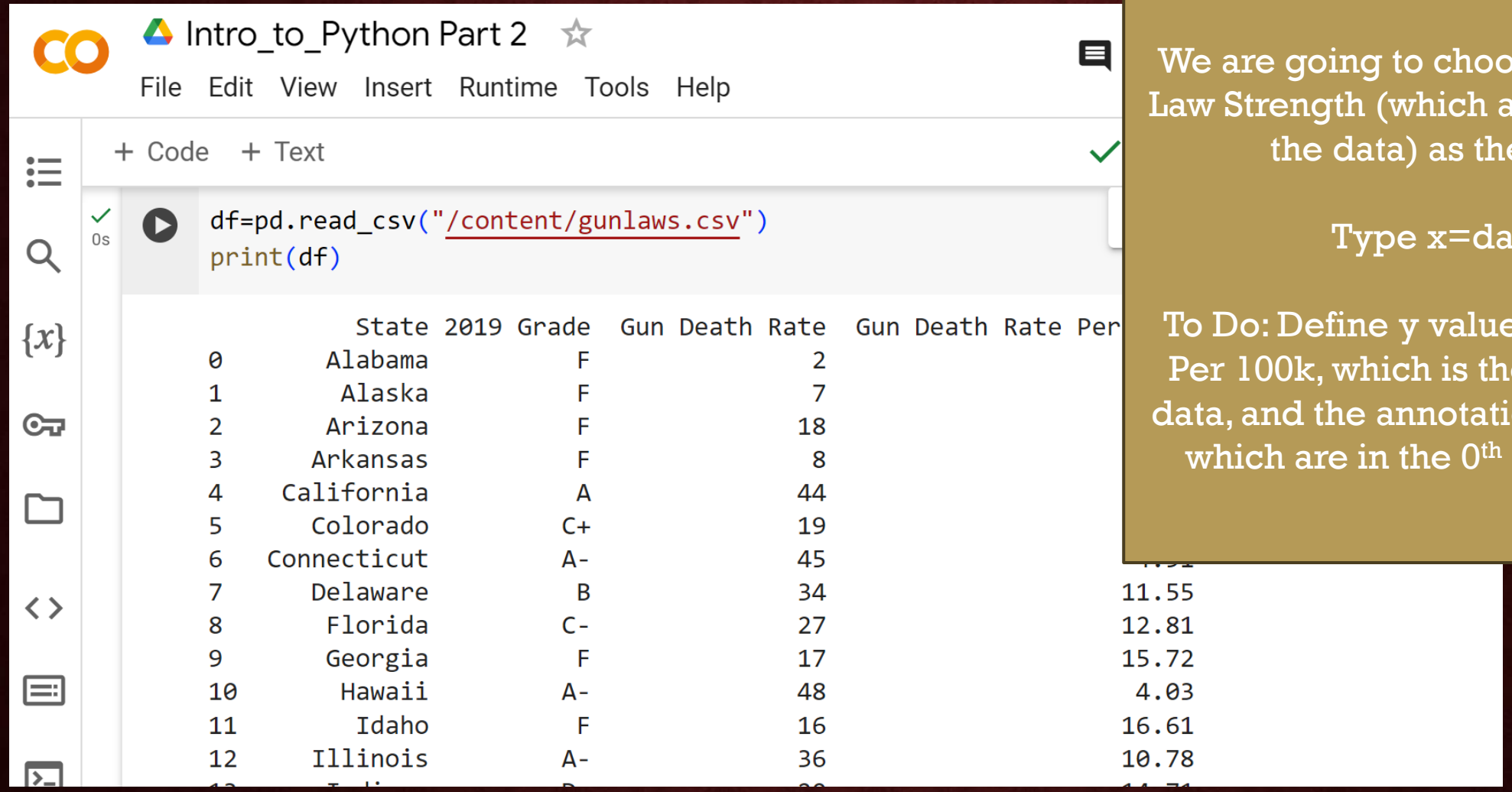
Colab AI
[2]
3s
from numpy import linalg
import statistics as
import matplotlib.py
from scipy import st
import numpy.polynom
/usr/local/lib/pytho
warnings.warn("Set
Uploading a File for Creating a Scatterplot
df=pd.read_csv("/content/gunlaws.csv")
0s
We will next Create a dataframe
Create a Code Cell
Type df=pd.read_csv(“ “)
Copy your file path here
Don’t forget to run the cell
Click on the 3 dots next to the gunlaws.csv file to Copy the Path



We will be working with arrays of data in this video.

An array is a mathematical table with rows and columns.

If data is the name of our array then we refer to the entry in the 0^{th} row and 3^{rd} column as data[0,3]



We are going to choose the State Gun Law Strength (which are in column 6 of the data) as the xvalues.

Type x=data[:,6]

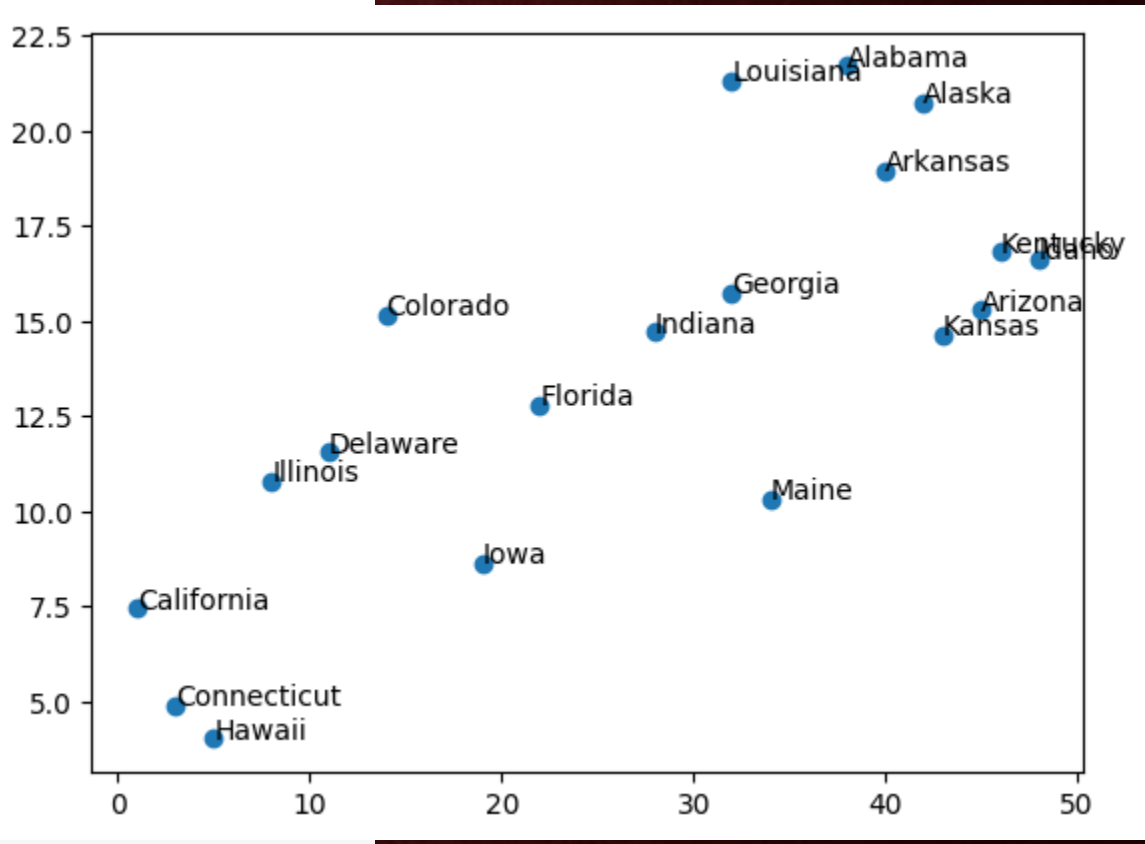
To Do: Define y values at Gun Deaths Per 100k, which is the 3rd columns of data, and the annotations as the States, which are in the 0th column of data

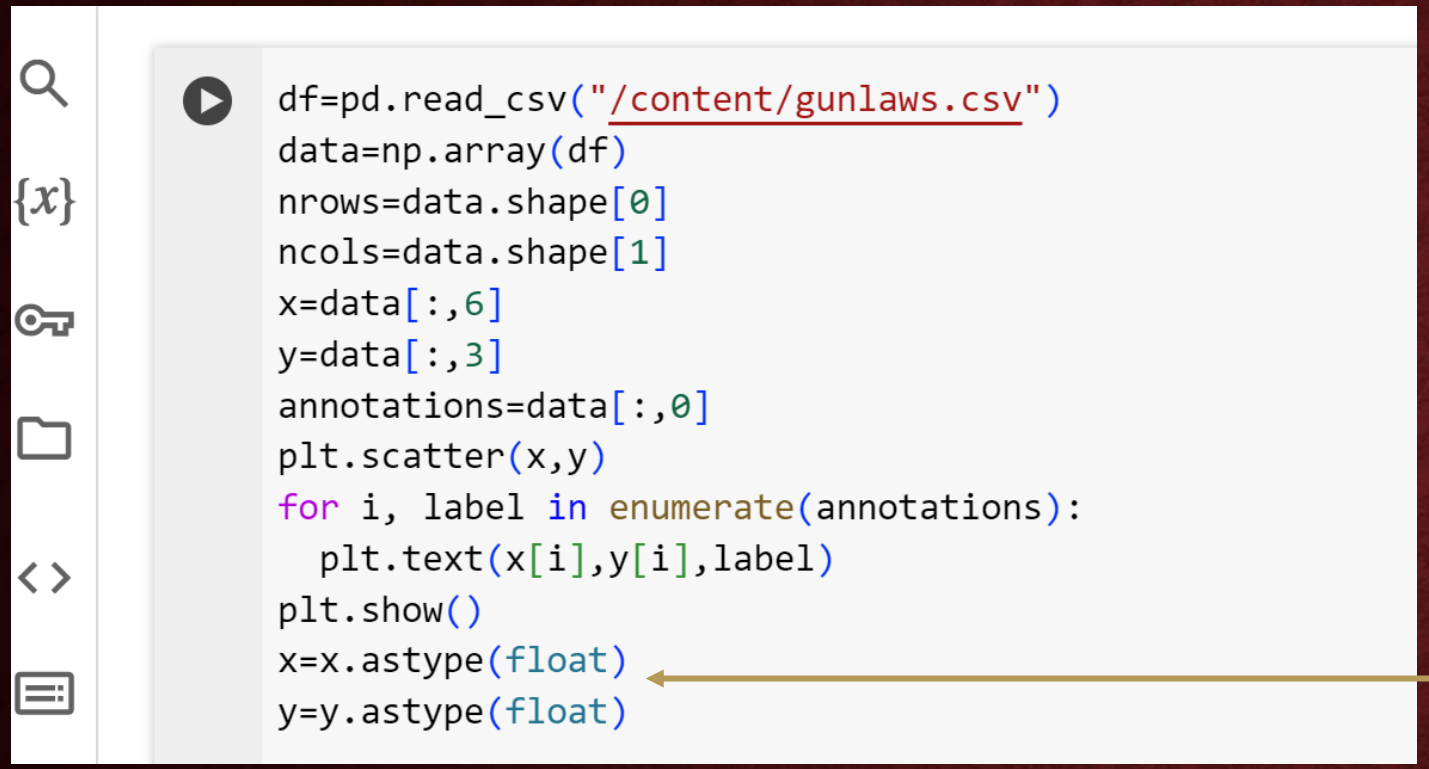
To Do: Use what you learned in Part 1 of the series to create a scatterplot using annotations as the labels.

Uploading a File for Creating a Scatterplot

```
[58] df=pd.read_csv("/content/gunlaws.csv")
     data=np.array(df)
     nrows=data.shape[0]
     ncols=data.shape[1]
     x=data[:,6]
     y=data[:,3]
     annotations=data[:,0]
     plt.scatter(x,y)
     for i, label in enumerate(annotations):
       plt.text(x[i],y[i],label)
     plt.show()
```

1s





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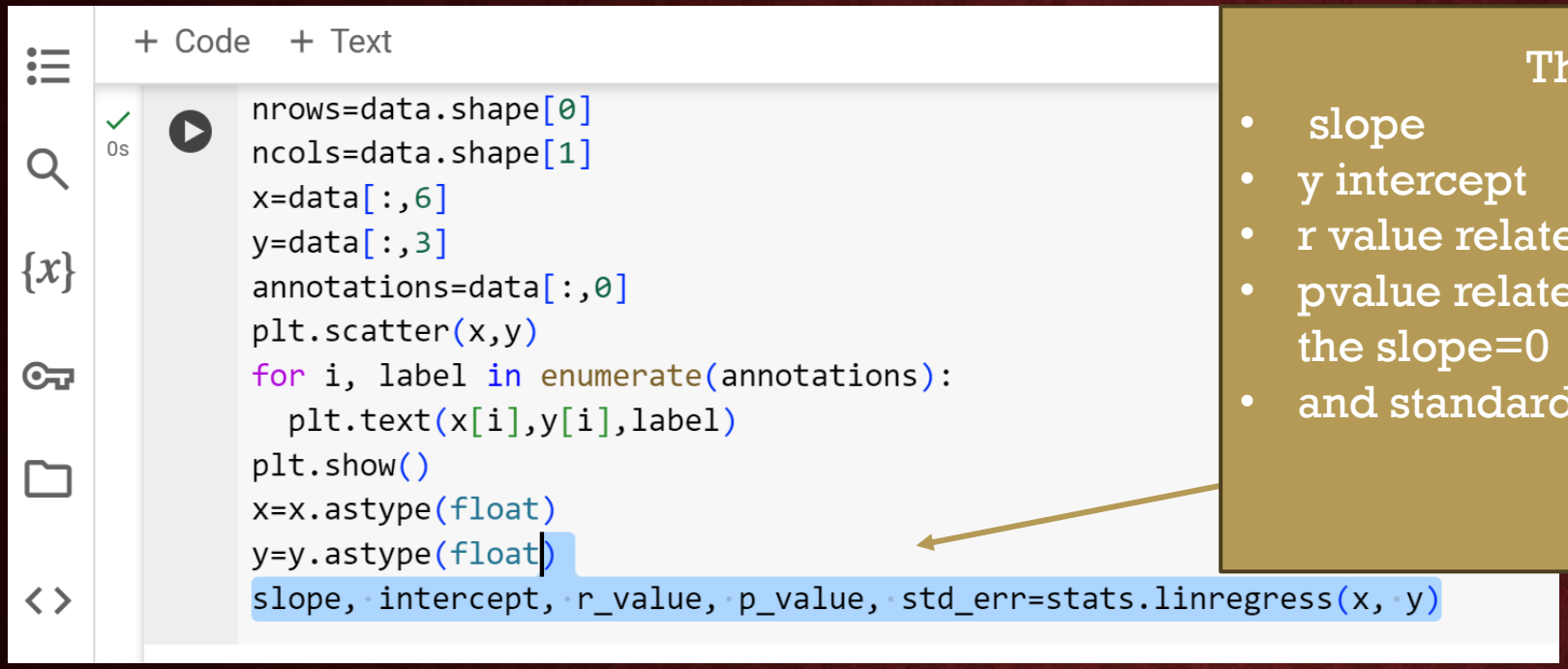
data=np.array(df)
nrows=data.shape[0]
ncols=data.shape[1]
x=data[:,6]
y=data[:,3]
annotations=data[:,0]
plt.scatter(x,y)
for i, label in enumerate(annotations):
  plt.text(x[i],y[i],label)
plt.show()
x=x.astype(float)
y=y.astype(float)
```

Some of your data may have come in as strings, use these commands to make sure that they are float variables.

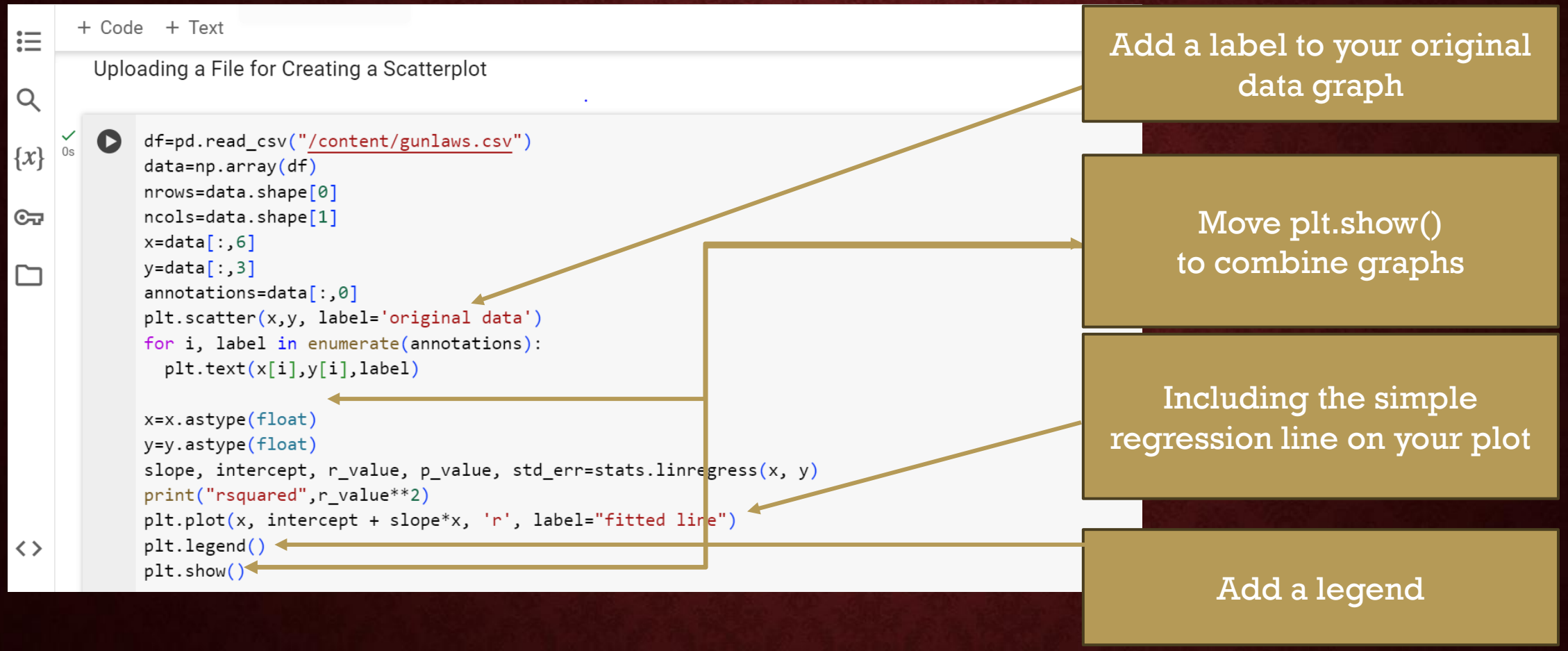


This command gives the

- slope
- y intercept
- r value related to linear correlation
- pvalue related to a 2-sided hypothesis test for the slope=0
- and standard error of the estimate

TO DO: To see r^2

Type print(r_value**2)

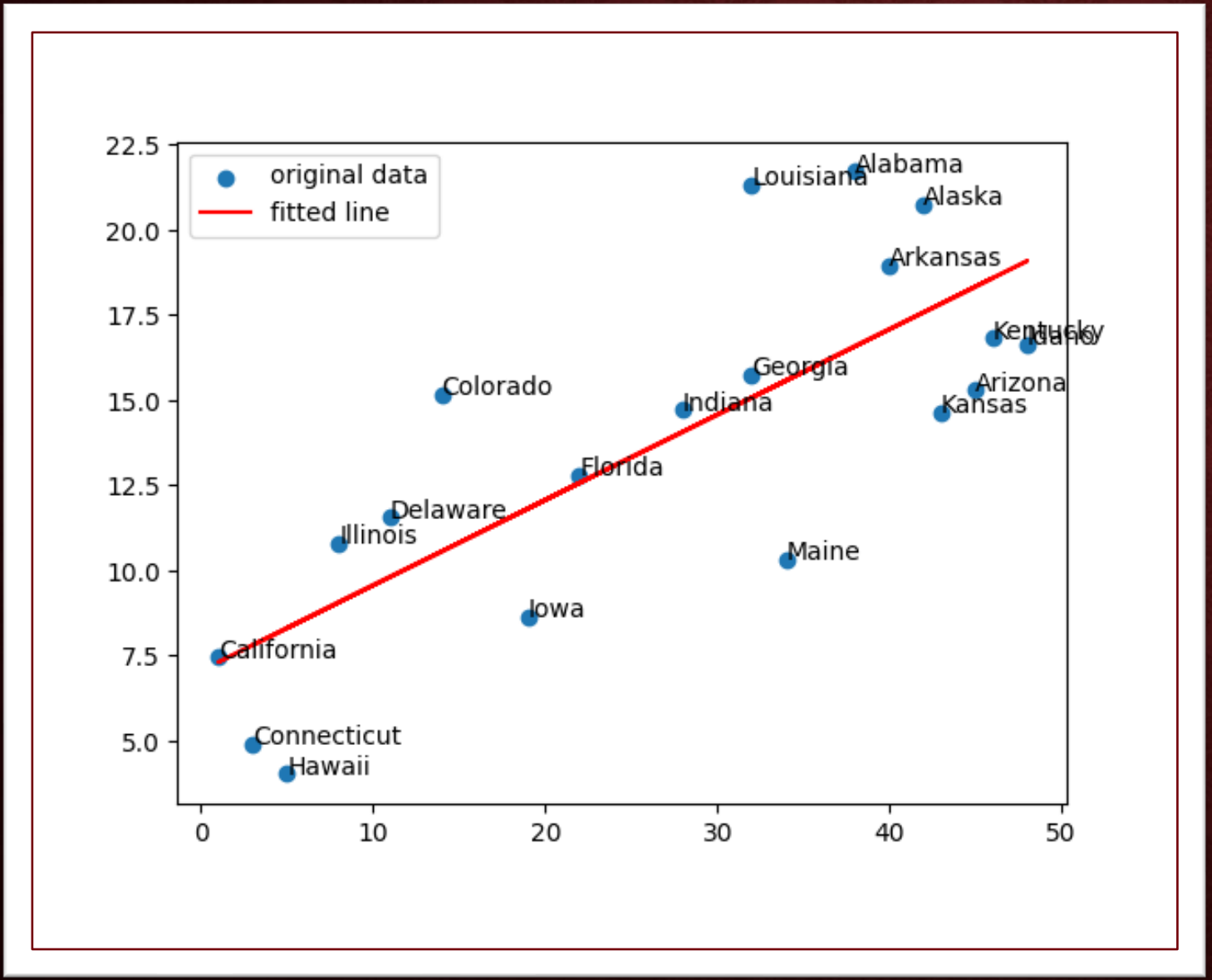


Add a label to your original data graph

Move plt.show() to combine graphs

Including the simple regression line on your plot

Add a legend



WATCH THE 3RD PYTHON VIDEO TO LEARN HOW TO CRATE OTHER DATA VISUALIZATIONS