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## Video

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### 3D Scatter Plots

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Following up with that thought on the last section,  
yes,

At a glance, they work and  
they behave exactly the  
same as their 2D  
counterparts



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To follow up from the last section, there surely is a way to visualize the relationship between three variables simultaneously. That way is through 3D scatter plots. Unfortunately, the Pyplot member of Pandas dataframes don't natively support the ability

to generate 3D plots... so for the sake of your visualization repertoire, you're going to learn how to make them directly with Matplotlib.

```
import matplotlib
import matplotlib.pyplot as plt
from mpl_toolkits.mplot3d import Axes3D

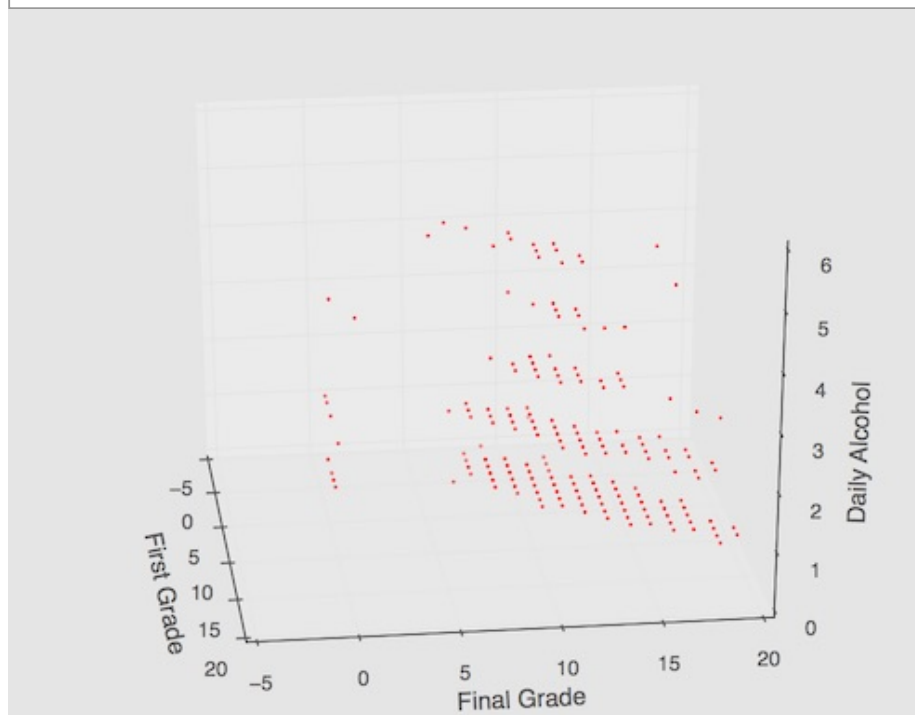
import pandas as pd

matplotlib.style.use('ggplot') # Look Pretty
# If the above line throws an error, use plt.style.use('ggplot') instead

student_dataset = pd.read_csv("/Datasets/students.data", index_col=0)

fig = plt.figure()
ax = fig.add_subplot(111, projection='3d')
ax.set_xlabel('Final Grade')
ax.set_ylabel('First Grade')
ax.set_zlabel('Daily Alcohol')

ax.scatter(student_dataset.G1, student_dataset.G3, student_dataset['Dalc'], c='r',
marker='.')
plt.show()
```



This plot communicates a few things to you:

- It's still easy to see the positive, linear relationship between the first grade and the final grade. Generally the higher the first grade, the higher the final grade.
- A large number of the students in this study consume alcohol on a daily basis.

- The more alcohol a student consumes daily, the *worse* their final score is on average.
- Daily alcohol consumption doesn't really seem to be the feature that contributed to those select students who bombed their finals, scoring 0.

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🌐 English ▾

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