Student Behavior Project

Hello, and thank you for taking a look. I decided to take a look at student grades to see how different factors impact them.

For example, what is their commute time, social media usage, and daily studying?

Below you'll find data analysis, visualizations, and more

Import Pandas and Numpy

It's vital to import pandas and numpy for my work, these are what's known as libraries within Python. They'll help me with really diving into my data and making sense of it.

```
#import pandas and numpy for now
import pandas as pd
import numpy as np
```

Import data from the csv

```
#import csv
student behavior = pd.read csv('Student Behavior.csv')
student behavior
    Certification Course
                            Gender Department
                                                Height(CM)
                                                              Weight(KG)
0
                              Male
                        No
                                           BCA
                                                      100.0
                                                                    58.0
1
                       No
                            Female
                                           BCA
                                                       90.0
                                                                    40.0
2
                      Yes
                              Male
                                           BCA
                                                      159.0
                                                                    78.0
3
                            Female
                                                      147.0
                      Yes
                                           BCA
                                                                    20.0
4
                              Male
                                                      170.0
                                                                    54.0
                        No
                                           BCA
230
                              Male
                                    B.com ISM
                                                      170.0
                      Yes
                                                                    76.0
231
                      Yes
                              Male
                                    B.com ISM
                                                      172.0
                                                                    52.0
232
                      Yes
                            Female
                                           BCA
                                                      139.0
                                                                    33.0
233
                      Yes
                            Female
                                      Commerce
                                                      153.0
                                                                    58.0
234
                        No
                            Female
                                    B.com ISM
                                                      155.0
                                                                    39.0
     10th Mark
                 12th Mark
                                                   hobbies daily studing
                             college mark
time
          79.0
                      64.0
                                      80.0
                                              Video Games
                                                                 0 - 30
minute
          70.0
                      80.0
                                      70.0
                                                    Cinema
                                                                30 - 60
minute
                                      55.0
          71.0
                      61.0
                                                    Cinema
                                                                    1 - 2
2
Hour
3
          70.0
                      59.0
                                      58.0
                                            Reading books
                                                                    1 - 2
```

## A0.0 65.0 30.0 Video Games 30 - 60 minute								
minute	Hour	40.0	CF O	20.0	Wides Cames	20 60		
		40.0	05.0	30.0	video Games	30 - 60		
230 72.0 67.0 65.0 Video Games 30 - 60 minute 231 72.0 70.0 76.0 Cinema 2 - 3 hour 232 90.0 75.0 70.0 Cinema 30 - 60 minute 233 85.0 74.0 75.0 Cinema 0 - 30 minute 234 45.0 45.0 50.0 Sports 3 - 4 hour 24 hour 254 45.0 45.0 50.0 Sports 3 - 4 hour 25 4 hour 26 4 hour 27 4 hour 28 4 hour 29 4 hour								
230								
minute 231		72 0	67.0	65 0	Video Comos	20 60		
231 72.0 70.0 76.0 Cinema 2 - 3 hour 232 90.0 75.0 70.0 Cinema 30 - 60 minute 233 85.0 74.0 75.0 Cinema 0 - 30 minute 234 45.0 45.0 50.0 Sports 3 - 4 hour prefer to study in salary expectation Do you like your degree? \ 0 Morning 40000 No 1 Morning 15000 Yes 2 Anytime 13000 Yes 3 Anytime 130000 Yes 3 Anytime 150000 No 4 Morning 50000 Yes 230 Morning 7000 Yes 231 Anytime 25000 Yes 232 Night 20000 Yes 232 Night 20000 Yes 233 Anytime 25000 Yes 234 Night 10 No willingness to pursue a career based on their degree \ 0 50% 3 50% 3 50% 231 75% 232 50% 233 75% 234 75% 232 50% 233 234 75% 234 75% 234 75% 235 8ad 8ad 8ad 8ad More than 2 hour 30 - 60 minutes Bad 8ad 8ad More than 2 hour 30 - 60 minutes Awful		72.0	07.0	05.0	video Gallies	30 - 00		
hour 232 90.0 75.0 70.0 Cinema 30 - 60 minute 233 85.0 74.0 75.0 Cinema 0 - 30 minute 234 45.0 45.0 50.0 Sports 3 - 4 prefer to study in salary expectation Do you like your degree? \(\) 0 Morning 40000 No 1 Morning 15000 Yes 2 Anytime 13000 Yes 2 Anytime 13000 Yes 3 Anytime 150000 No No 4 Morning 7000 Yes 3 Yes 231 Anytime 25000 Yes 232 Night 20000 Yes 233 Anytime 20000 Yes 233 Anytime 20000 Yes 234 Night 10 No No williamy in the stress to pursue a career based on their degree \(\) \(\) \(\) \(\) \(\) \(\) \(\) <t< td=""><td></td><td>72 0</td><td>70 0</td><td>76.0</td><td>Cinoma</td><td>າ ວ</td></t<>		72 0	70 0	76.0	Cinoma	າ ວ		
232 90.0 75.0 70.0 Cinema 30 - 60 minute 233 85.0 74.0 75.0 Cinema 0 - 30 minute 234 45.0 45.0 50.0 Sports 3 - 4 hour prefer to study in salary expectation Do you like your degree? \ 0		72.0	70.0	70.0	Стпеша	2 - 3		
minute 233 85.0 74.0 75.0 Cinema 0 - 30 minute 234 45.0 45.0 50.0 Sports 3 - 4 hour prefer to study in Morning 40000 No 1 Morning 15000 Yes 2 Anytime 13000 Yes 3 Anytime 1500000 Yes 3 Anytime 1500000 Yes 3 Anytime 25000 Yes 231 Anytime 25000 Yes 231 Anytime 25000 Yes 232 Night 20000 Yes 233 Anytime 20000 Yes 234 Night 10 No willingness to pursue a career based on their degree \ 0 50% 1 75% 2 50% 3 50% 4 25% 230 50% 3 50% 231 Financial Status \ 0 1.30 - 2 hour 30 - 60 minutes Bad Bad Bad Bad Bad More than 2 hour 30 - 60 minutes Bad Bad Bad More than 2 hour 30 - 60 minutes Bad Bad Bad More than 2 hour 30 - 60 minutes Awful		00 0	7F 0	70.0	Cinoma	20 60		
231 85.0 74.0 75.0 Cinema 0 - 30 minute 234 45.0 45.0 50.0 Sports 3 - 4 hour prefer to study in salary expectation Do you like your degree? \ 0		90.0	75.0	70.0	Стпеша	30 - 00		
minute 234		05 A	74.0	75 0	Cinoma	0 20		
234		03.0	74.0	73.0	CITIEIIIa	0 - 30		
Prefer to study in salary expectation Do you like your degree?		45 A	45 A	50.0	Sports	2 /		
prefer to study in salary expectation Do you like your degree? \ 0		43.0	43.0	30.0	3p01 t5	J - 4		
0	Hour							
230	0 1 2	Morni Morni Anyti Anyti	ng ng me me	40000 15000 13000 1500000	Do you like	No Yes Yes No		
231								
232								
233		•						
234		_						
willingness to pursue a career based on their degree \ 0		•						
0	234	N1g	nτ	10		NO		
Status \ 0	0 50% 1 75% 2 50% 3 50% 4 25% 230 231 75% 232 50% 233 75%							
Status \ 0				- .		F-1		
0 1.30 - 2 hour 30 - 60 minutes Bad Bad 1 1 - 1.30 hour 0 - 30 minutes Bad Bad 2 More than 2 hour 30 - 60 minutes Awful			ideo Fravellin	g lime S	Stress Level	Financial		
Bad 1 1 - 1.30 hour 0 - 30 minutes Bad Bad 2 More than 2 hour 30 - 60 minutes Awful	-		ha 20 CO		DI			
1 1 - 1.30 hour 0 - 30 minutes Bad Bad 2 More than 2 hour 30 - 60 minutes Awful		1.30 - 2	110ur 30 - 60 I	lithutes	Rad			
Bad 2 More than 2 hour 30 - 60 minutes Awful		1 1 20	hour 0 20	minutos	Ded			
2 More than 2 hour 30 - 60 minutes Awful		1 - 1.30	110U1 & - 30 I	iiTiiutes	840			
		ara than 3	hour 20 60	minutaa	۸د٦			
DdU		ore than 2	11001 30 - 00 1	litilutes	AWIUL			
	DdU							

```
3
           1.30 - 2 hour 0 - 30 minutes
                                                      Bad
good
4
           1.30 - 2 hour 30 - 60 minutes
                                                     Good
good
        More than 2 hour 30 - 60 minutes
230
                                                      Bad
Bad
231
          30 - 60 Minute 30 - 60 minutes
                                                     Good
good
232
                             2.30 - 3 hour
          30 - 60 Minute
                                                      Bad
good
233
        More than 2 hour
                             2.30 - 3 hour
                                                    Awful
good
234
          30 - 60 Minute 2.30 - 3 hour
                                                fabulous
good
    part-time job
0
               No
1
               No
2
               No
3
               No
4
               No
230
               No
231
               No
232
               No
233
               No
234
               No
[235 rows x 19 columns]
```

Column Replacements

Here I'm replacing the blanks in my column names with a dash which is standard in Python practice and more readable

Viewing the dataframe

Viewing the dataframe to ensure the dashes are there for the column names. Notice daily_studing_time as an example. As you can see this is what's known as "messy data" since there are misspellings, missing data, and more. We can clean it up!

student_b	ehavior							
0 1 2 3 4	fication_c	No No Yes Yes No	Male Female Male Female Male		BCA BCA BCA BCA BCA	100.0 90.0 159.0 147.0 170.0	58.0 40.0 78.0 20.0 54.0	\
230 231 232 233 234		Yes Yes Yes Yes No	Male Male Female Female Female	B.com Comme	ISM BCA rce	170.0 172.0 139.0 153.0 155.0	76.0 52.0 33.0 58.0 39.0	
	_mark 12t ding_time	h_mark	colle	ge_mark		hobbies		
0	79.0	64.0		80.0	V.	ideo Games	0 - 30	
minute 1	70.0	80.0		70.0		Cinema	30 - 60	
minute 2	71.0	61.0		55.0		Cinema	1 - 2	
Hour 3	70.0	59.0		58.0	Rea	ding books	1 - 2	
Hour 4 minute	40.0	65.0		30.0	V	ideo Games	30 - 60	
230	72.0	67.0		65.0	V	ideo Games	30 - 60	
minute 231	72.0	70.0		76.0		Cinema	2 - 3	
hour 232	90.0	75.0		70.0		Cinema	30 - 60	
minute 233	85.0	74.0		75.0		Cinema	0 - 30	
minute 234 hour	45.0	45.0		50.0		Sports	3 - 4	
prefe 0 1 2 3 4 230 231 232	r_to_study Morr Morr Anyt Anyt Morr Anyt Ni	ing ing ing ime ime ing ing ing	alary_e	400 150 130 15000 500	000 000 000 000 000	o_you_like_y	our_degree? No Yes Yes No Yes Yes Yes Yes	\

233 234	Anytime Night	20000 10	Yes No
wi 0 1 2 3 4 230 231 232 233 234	illingness_to_pursue		egree \ 50% 75% 50% 50% 50% 25% 50% 75% 75%
	1.30 - 2 hour More than 2 hour 1.30 - 2 hour	0 - 30 minutes	vel_ Bad Bad wful Bad Good
230 Bad	More than 2 hour		Bad
231 good 232 good	30 - 60 Minute 30 - 60 Minute		Good Bad
233 good 234 good	More than 2 hour 30 - 60 Minute	2.30 - 3 hour Av	wful lous
pa 0 1 2 3 4 230 231	art-time_job No No No No No No		

```
232 No
233 No
234 No
[235 rows x 19 columns]
```

Stress Levels

Here I'm viewing the different stress levels, data type(object, so it's not a number), the length, and the name.

```
#stress level
stress = student behavior['stress level ']
stress
0
             Bad
1
             Bad
2
          Awful
3
             Bad
4
           Good
230
             Bad
231
           Good
232
             Bad
233
          Awful
234
       fabulous
Name: stress_level_, Length: 235, dtype: object
```

Machine Learning

I enjoy machine learning so decided to import it in case I'd like to use it at some point.

```
#machine learning imports
import sys
from packaging import version
import sklearn
```

First few rows

The .head() function allows me to see the first 5 rows of the dataframe. I also have the option to place a number inside of the head function to state my preference.

```
79.0
                     No
                         Female
                                        BCA
                                                    90.0
                                                                 40.0
1
70.0
                            Male
                                         BCA
                                                                 78.0
2
                    Yes
                                                   159.0
71.0
                    Yes
                         Female
                                        BCA
                                                   147.0
                                                                 20.0
70.0
                     No
                           Male
                                        BCA
                                                   170.0
                                                                 54.0
4
40.0
               college mark
   12th mark
                                    hobbies daily_studing_time
0
        64.0
                       80.0
                                Video Games
                                                  0 - 30 minute
1
        80.0
                       70.0
                                     Cinema
                                                 30 - 60 minute
2
        61.0
                       55.0
                                                      1 - 2 Hour
                                     Cinema
3
                              Reading books
                       58.0
                                                      1 - 2 Hour
        59.0
4
        65.0
                       30.0
                                Video Games
                                                 30 - 60 minute
                       salary expectation do you like your degree? \
  prefer to study in
0
             Morning
                                     40000
                                                                    No
1
                                                                  Yes
             Morning
                                     15000
2
                                                                  Yes
             Anvtime
                                     13000
3
                                                                   No
              Anytime
                                   1500000
4
             Morning
                                     50000
                                                                  Yes
  willingness to pursue a career based on their degree
social medai & video \
0
                                                    50%
                                                                     1.30 -
2 hour
                                                    75%
                                                                     1 -
1.30 hour
                                                    50%
                                                                 More than
2 hour
3
                                                    50%
                                                                     1.30 -
2 hour
                                                    25%
                                                                     1.30 -
2 hour
  travelling time stress level financial status part-time job
                               Bad
  30 - 60 minutes
                                                 Bad
                                                                 No
    0 - 30 minutes
                               Bad
                                                 Bad
                                                                 No
                             Awful
  30 - 60 minutes
                                                 Bad
                                                                 No
3
    0 - 30 minutes
                               Bad
                                                good
                                                                 No
   30 - 60 minutes
                              Good
                                                good
                                                                 No
```

Dataframe info

.info(). This is important since objects and numbers don't work the same. Float64 and int64 means it's a number, and object as stated above means it's a non-number.

```
#check the info
student behavior.info()
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 235 entries, 0 to 234
Data columns (total 19 columns):
#
    Column
                                                              Non-Null
Count Dtype
                                                              235 non-
    certification course
null
        object
                                                              235 non-
1
     gender
null
        object
2
     department
                                                              235 non-
null
        object
3
    height(cm)
                                                              235 non-
null
        float64
    weight(kg)
4
                                                              235 non-
null
        float64
5
    10th mark
                                                              235 non-
        float64
null
     12th mark
                                                              235 non-
6
null
        float64
    college mark
                                                              235 non-
7
null
        float64
     hobbies
8
                                                              235 non-
        object
null
9
     daily_studing_time
                                                              235 non-
        object
null
10 prefer to study in
                                                              235 non-
        object
null
                                                              235 non-
11 salary expectation
        int64
null
12 do you like your degree?
                                                              235 non-
null
        object
13 willingness to pursue a career based on their degree
                                                              235 non-
null
        object
14 social medai & video
                                                              235 non-
null
        object
15 travelling_time_
                                                              235 non-
null
        object
16 stress level
                                                              235 non-
null
        object
17 financial status
                                                              235 non-
null
        object
                                                              235 non-
18 part-time job
null
        object
dtypes: float64(5), int64(1), object(13)
memory usage: 35.0+ KB
```

Change information to numbers

In Pandas I need to change the information to numbers. See how it states "Bad" "Good" etc? I'd like to gain access to the data for better visualization later on through numerical data.

So for stress levels I'm changing fabulous to 1, good to 2, bad to 3, and awful to 4

Then I'm taking that information and placing it into a new column called stress_level_number.

```
#stress map dictionary
stress mapping = {'fabulous': 1, 'good': 2, 'bad': 3, 'awful': 4}
#creating a new dataframe
student behavior['stress level number'] =
student_behavior['stress_level_'].str.lower().replace(stress_mapping)
student behavior
    certification course
                            gender department
                                                height(cm)
                                                             weight(kg)
0
                                                      100.0
                                                                    58.0
                              Male
                                           BCA
                       No
1
                                                       90.0
                       No
                            Female
                                           BCA
                                                                    40.0
2
                              Male
                                                      159.0
                                                                    78.0
                      Yes
                                           BCA
3
                                                      147.0
                      Yes
                            Female
                                           BCA
                                                                    20.0
4
                       No
                              Male
                                           BCA
                                                      170.0
                                                                    54.0
                       . . .
                                                                    . . .
230
                      Yes
                              Male
                                    B.com ISM
                                                      170.0
                                                                    76.0
                                                      172.0
231
                      Yes
                              Male
                                    B.com ISM
                                                                    52.0
232
                      Yes
                            Female
                                           BCA
                                                      139.0
                                                                    33.0
233
                      Yes
                            Female
                                     Commerce
                                                      153.0
                                                                    58.0
234
                            Female
                                                      155.0
                       No
                                    B.com ISM
                                                                    39.0
     10th mark 12th mark
                             college mark
                                                  hobbies
daily studing time
                                              Video Games
          79.0
                      64.0
                                     80.0
                                                                0 - 30
minute
                      80.0
                                     70.0
                                                               30 - 60
          70.0
                                                   Cinema
1
minute
                      61.0
                                     55.0
          71.0
                                                   Cinema
                                                                    1 - 2
2
Hour
                                                                    1 - 2
           70.0
                      59.0
                                     58.0
                                            Reading books
3
Hour
           40.0
                      65.0
                                     30.0
                                              Video Games
                                                               30 - 60
minute
. .
                                              Video Games
230
          72.0
                      67.0
                                     65.0
                                                               30 - 60
minute
231
                      70.0
          72.0
                                     76.0
                                                   Cinema
                                                                    2 - 3
hour
                                                               30 - 60
          90.0
                      75.0
                                     70.0
                                                   Cinema
232
minute
```

233 85.0 74.0 75.0 Cinema 0 - 30	9
minute 234 45.0 45.0 50.0 Sports 3	- 4
hour 45.8 45.8 50.8 Sports 5.8	- 4
nou i	
1 Morning 15000 Ye 2 Anytime 13000 Ye 3 Anytime 1500000 N 4 Morning 50000 Ye	e? \ No es es No es
230 Morning 7000 Ye 231 Anytime 25000 Ye 232 Night 20000 Ye 233 Anytime 20000 Ye	
<pre>willingness_to_pursue_a_career_based_on_their_degree\ 0</pre>	
232 50% 233 75% 234 75%	
social medai & video travelling time stress level	
financial status \	
0 1.30 - 2 hour 30 - 60 minutes Bad	
Bad	
1	
2 More than 2 hour 30 - 60 minutes Awful	
Bad	
3 1.30 - 2 hour 0 - 30 minutes Bad	
good 4 1.30 - 2 hour 30 - 60 minutes Good	
good	
230 More than 2 hour 30 - 60 minutes Bad	
Bad 231 30 - 60 Minute 30 - 60 minutes Good	
good 232	

```
good
        More than 2 hour 2.30 - 3 hour
233
                                                     Awful
good
234
          30 - 60 Minute 2.30 - 3 hour
                                                  fabulous
good
    part-time_job
                    stress_level_number
0
                No
                                        3
1
                                        3
                No
2
                                        4
                No
3
                                        3
                No
4
                                        2
                No
230
                                        3
                No
                                       2
231
                No
232
                                       3
                No
                                       4
233
                No
234
                No
                                        1
[235 rows x 20 columns]
```

Stress Level information

This tells me how many students have good, bad, awful, and fabulous stress levels.

Salary Expectations

Notice the salary expectations below. You'll see how many students per salary have that expectation.

```
#values of salary expectations
student_behavior["salary_expectation"].value_counts()

salary_expectation
20000 64
15000 49
```

```
25000
            22
10000
            16
30000
            13
18000
            13
            10
50000
             5
12000
             5
40000
17000
             4
             4
13000
             3
100000
             3
5000
             2
10
35000
             2
             2
16000
22
             1
             1
15
             1
100
45000
             1
500
700000
             1
500000
             1
             1
23000
21
             1
             1
120000
11000
             1
             1
12500
8000
             1
             1
0
60000
             1
             1
17
1500000
             1
7000
Name: count, dtype: int64
```

Import Matplotlib plus visualization

Here I'm importing matplotlib for visualization purposes. Visualization really helps with taking a look at the data and seeing any connections.

It shows the height, weight, grade, and more. It's a great way to see what's the most common.

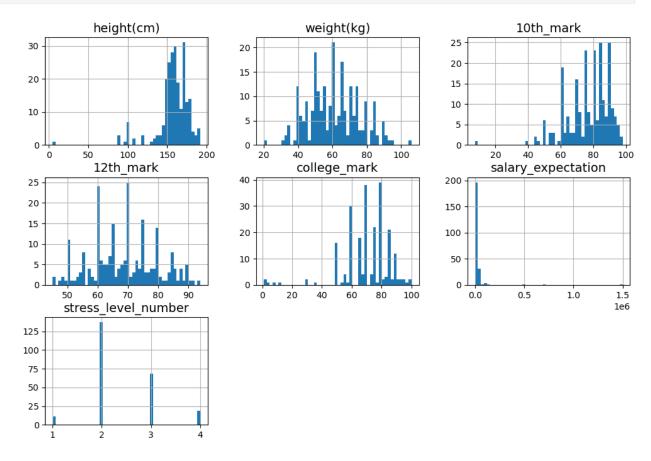
For example, most of the salary expectations are low, below \$20,000!

```
#import matplotlib as plt
import matplotlib.pyplot as plt

# visualization time
plt.rc('font', size=14)
plt.rc('axes', labelsize=14, titlesize=14)
```

```
plt.rc('legend', fontsize=14)
plt.rc('xtick', labelsize=10)
plt.rc('ytick', labelsize=10)

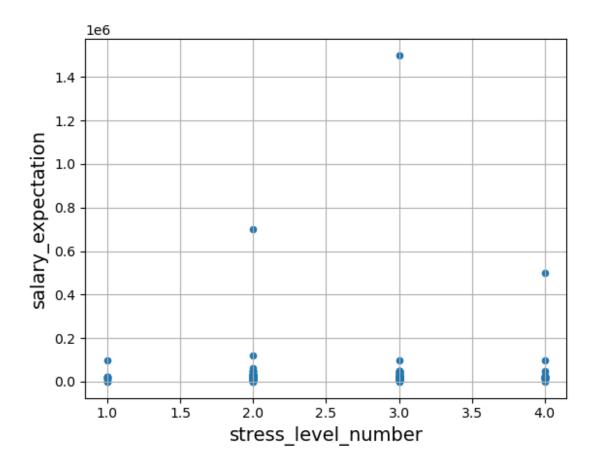
# plots histogram
student_behavior.hist(bins=50, figsize=(12, 8))
plt.show()
```



Salary expectation vs stress level

Is there a correlation? Here it's interesting that many students seem to have a lower salary expectation overall.

```
#scatter plot of salary and stress level
student_behavior.plot(kind="scatter", x= "stress_level_number",
y="salary_expectation", grid=True)
plt.show()
```



Salary Expectations

Here you can see the number of students and their salary expectations. 0 is under 20,000, 2 is 20,000 but under 50,000, etc. As you can see, many of the students are under \$20,000 for their salary expectations.



Column renaming

I'm renaming columns to make them easier to read. Inplace = True assigns them back to the original dataframe (student_behavior)

```
#renaming columns for readability
student_behavior.rename(columns = {'social_medai_&_video':
    'social_media'}, inplace = True)
student_behavior

student_behavior.rename(columns =
    {'willingness_to_pursue_a_career_based_on_their_degree__':
    'pursue_career_in_field'}, inplace = True)
student_behavior.rename(columns = {'do_you_like_your_degree?':
    'degree_satisfaction'}, inplace = True)

student_behavior.rename(columns = {'daily_studing_time':
    'daily_studying'}, inplace = True)

student_behavior.rename(columns = {'travelling_time_': 'commute'},
    inplace = True)
student_behavior
```

0	certification_course No	gender d Male	epartmen BC		weight(kg) \ 58.0
	No	Female	BC		40.0
1 2 3 4	Yes	Male	ВС	CA 159.0	78.0
3	Yes	Female	ВС		20.0
	No	Male	ВС		54.0
230	Yes	 Male	B.com IS		76.0
231	Yes		B.com IS		52.0
232	Yes	Female	ВС	CA 139.0	33.0
233	Yes		Commerc		58.0
234	No	Female	B.com IS	SM 155.0	39.0
	10th mark 12th mark	college	mark	hobbies	daily studying
	\ _	.			-
0	79.0 64.0		80.0	Video Games	0 - 30 minute
1	70.0 80.0		70.0	Cinema	30 - 60 minute
	70.0 00.0		70.0	CITICING	50 00 militate
2	71.0 61.0		55.0	Cinema	1 - 2 Hour
	70.0		FO 0 D) and in a banks	1 2 110
3	70.0 59.0		58.0 R	Reading books	1 - 2 Hour
4	40.0 65.0		30.0	Video Games	30 - 60 minute
230	72.0 67.0		65.0	Video Games	30 - 60 minute
231	72.0 70.0		76.0	Cinema	2 - 3 hour
232	90.0 75.0		70.0	Cinema	30 - 60 minute
	75.0		70.0	CITICIIIA	JO - OO IIIITIACC
233	85.0 74.0		75.0	Cinema	0 - 30 minute
	45.0 45.0		FO 0	C	2 4 5 5
234	45.0 45.0		50.0	Sports	3 - 4 hour
		egree_sat		on pursue_care	
0	40000			lo	50%
1 2 3 4	15000 13000		Ye Ye		75% 50%
3	150000			:5 10	50%
4	50000		Ye		25%
	7000				
230	7000		Ye		50%
231232	25000 20000		Ye Ye		75% 50%
233	20000		Ye		75%
234	10			lo	75%

	socia	l_media		commute	stress_level_	financial_sta	atus
0	1.30 -	2 hour	30 - 60	minutes	Bad		Bad
1	1 - 1.3	30 hour	0 - 30	minutes	Bad		Bad
2	More than	2 hour	30 - 60	minutes	Awful		Bad
3	1.30 -	2 hour	0 - 30	minutes	Bad	9	good
4	1.30 -	2 hour	30 - 60	minutes	Good	(good
230	More than	2 hour	30 - 60	minutes	Bad		Bad
231	30 - 60	Minute	30 - 60	minutes	Good	(good
232	30 - 60	Minute	2.30	- 3 hour	Bad	(good
233	More than	2 hour	2.30	- 3 hour	Awful	(good
234	30 - 60	Minute	2.30	- 3 hour	fabulous	(good
0 1 2 3 4 230 231 232 233 234	_	No No No No No No No No No		_number 3 3 4 3 2 3 2 3 4 1	salary_expecta	ations 2 0 0 15 2 0 2 0 0	
_	ecking info		1				
	lent_behavi						

certification_course

100.0

90.0

159.0

147.0

170.0

BCA

BCA

BCA

BCA

BCA

gender

58.0

40.0

78.0

20.0

54.0

<bound method DataFrame.info of</pre>

department

0

1 2

3

4

height(cm) weight(kg)

No

No

Yes

No

Yes

Male

Male

Male

Female

Female

230 231 232 233 234		Yes Yes Yes Yes No	Male Male Female Female Female	B.com B.com Comme B.com	ISM BCA erce	170.0 172.0 139.0 153.0 155.0		5 3 5	76.0 52.0 33.0 68.0
	10th_mark	12th_mark	colleg	e_mark	h	obbies	dai	ly_st	udying
0	79.0	64.0		80.0	Video	Games	0	- 30	minute
1	70.0	80.0		70.0		Cinema	30	- 60	minute
2	71.0	61.0		55.0		Cinema		1 -	2 Hour
3	70.0	59.0		58.0	Reading	books		1 -	2 Hour
4	40.0	65.0		30.0	Video	Games	30	- 60	minute
230	72.0	67.0		65.0	Video	Games	30	- 60	minute
231	72.0	70.0		76.0		Cinema		2 -	3 hour
232	90.0	75.0		70.0		Cinema	30	- 60	minute
233	85.0	74.0		75.0		Cinema	0	- 30	minute
234	45.0	45.0		50.0		Sports		3 -	4 hour
	calany ayna	station de	0 C C C C C C C C C C C C C C C C C C C	+; cf > c+	ion nurc		or i	n fic	\1d \
0 1 2 3 4	salary_expe	40000 15000 13000 1500000 50000	egree_sa		cion purs No Yes Yes No Yes	ue_care	er_1		60% 75% 60% 60%
230 231 232 233 234		7000 25000 20000 20000 10			Yes Yes Yes Yes No				 60% 75% 60% 75%
\	social	_media	СО	mmute s	stress_le	vel_ fi	nanc	ial_s	tatus
Ô	1.30 - 3	2 hour 30	- 60 mi	nutes		Bad			Bad
1	1 - 1.3	0 hour 0	- 30 mi	nutes		Bad			Bad

2	More than	2 hour	30 - 60 mi	nutes	Awful		Bad
3	1.30 -	2 hour	0 - 30 mi	nutes	Bad		good
4	1.30 -	2 hour	30 - 60 mi	nutes	Good		good
230	More than	2 hour	30 - 60 mi	nutes	Bad		Bad
231	30 - 60	Minute	30 - 60 mi	nutes	Good		good
232	30 - 60	Minute	2.30 - 3	hour	Bad		good
233	More than	2 hour	2.30 - 3	hour	Awful		good
234	30 - 60	Minute	2.30 - 3	hour	fabulous		good
0 1 2 3 4 230 231 232 233 234		job stre No No No No No No No No No	ss_level_nu	mber s 3 4 3 2 3 2 3 4 1	alary_expectation	ons 2 0 0 15 2 0 2 0 0	
[235	rows x 21	columns]>				

Stress levels, college marks, daily studying

Here I'm viewing daily studying, college marks, and stress levels. It seems like the people with the lowest stress tend to study for longer. Makes sense, they probably feel better going into exams.

```
#stress levels, college marks are the groupby compared to daily
studying
sum_students = student_behavior.groupby(['stress_level_',
'college_mark'], as_index = False)['daily_studying'].sum()
sum students
   stress_level_
                   college mark
                                                          daily_studying
                                                           0 - \overline{3}0 minute
0
                            30.0
           Awful
1
           Awful
                           55.0
                                                               1 - 2 Hour
```

```
2
           Awful
                            60.0
                                           30 - 60 minute30 - 60 minute
3
           Awful
                                  30 - 60 minute1 - 2 Hour0 - 30 minute
                            65.0
4
           Awful
                            70.0
                                     30 - 60 minute3 - 4 hour1 - 2 Hour
        fabulous
                                                          30 - 60 minute
67
                            75.0
68
        fabulous
                            80.0
                                                 2 - 3 hour0 - 30 minute
        fabulous
                                                        More Than 4 hour
69
                            85.0
70
        fabulous
                            92.0
                                                          30 - 60 minute
        fabulous
                                                            0 - 30 minute
71
                            97.0
[72 rows x 3 columns]
```

Awful stress levels

I wanted to see all the awful stress levels and how much they stressed along with their studying.

```
#viewing awful stress levels
unhappy students = sum students[sum students['stress level '] ==
'Awful']
unhappy_students
  stress level college mark
daily studying
          Awful
                          30.0
                                                                   0 -
30 minute
          Awful
                          55.0
                                                                      1
- 2 Hour
2
          Awful
                          60.0
                                                    30 - 60 minute30 -
60 minute
                          65.0
          Awful
                                          30 - 60 minute1 - 2 Hour0 -
30 minute
                                             30 - 60 minute3 - 4 hour1
          Awful
                          70.0
- 2 Hour
5
          Awful
                          75.0
                                        0 - 30 minute0 - 30 minute0 -
30 minute
          Awful
                                0 - 30 minute1 - 2 Hour1 - 2 Hour30 -
                          80.0
60 minute
          Awful
                          90.0
                                                   0 - 30 minuteMore
Than 4 hour
```

Fabulous stress levels

I wanted to see fabulous stress levels compared to studying and college marks. It does seem like they put in more study time than those who say their stress levels are awful.

```
#viewing fabulous stress levels
happy_students = sum_students[sum_students['stress_level_'] ==
```

```
'fabulous'l
happy students
                 college mark
                                        daily studying
   stress level
                                  3 - 4 hour3 - 4 hour
64
       fabulous
                          50.0
65
       fabulous
                         60.0
                                  1 - 2 Hour2 - 3 hour
66
       fabulous
                         65.0
                                         0 - 30 minute
       fabulous
                         75.0
                                        30 - 60 minute
67
       fabulous
                         80.0 2 - 3 hour0 - 30 minute
68
69
       fabulous
                         85.0
                                      More Than 4 hour
70
       fabulous
                                        30 - 60 minute
                         92.0
                                         0 - 30 minute
71
        fabulous
                         97.0
```

Mean stress level and college marks -Awful

Here is the mean for college marks for those with awful stress levels

```
#awful stress mean
filtered_students = sum_students[sum_students['stress_level_'] ==
'Awful']
mean_awful = filtered_students['college_mark'].mean()
mean_awful
65.625
```

Mean stress level and college marks -Fabulous

Here is the mean grade for students with fabulous stress levels

```
#mean for fabulous stress
filtered_students = sum_students[sum_students['stress_level_'] ==
'fabulous']
mean_happy = filtered_students['college_mark'].mean()
mean_happy
75.5
```

Checking unique stress levels again

All the stress levels are awful, bad, good, fabulous

```
#viewing valus in stress_level_
sum_students['stress_level_'].unique()
array(['Awful', 'Bad', 'Good', 'fabulous'], dtype=object)
```

Mean stress level and college marks-good

Here is the mean for those students with a good stress level

```
# mean for good stress
filtered students = sum students[sum students['stress level '] ==
'Good']
mean good = filtered students['college mark'].mean()
mean good
65.6647222222222
filtered students
   stress_level_
                   college mark \
28
             Good
                            1.00
29
             Good
                            2.00
30
             Good
                            3.00
31
             Good
                            7.50
32
             Good
                           12.00
33
             Good
                           30.00
34
             Good
                           35.00
35
             Good
                           50.00
36
             Good
                           55.00
37
             Good
                           60.00
38
             Good
                           65.00
39
             Good
                           66.30
40
             Good
                           67.00
41
             Good
                           68.00
42
             Good
                           69.00
43
             Good
                           70.00
44
             Good
                           74.00
45
             Good
                           75.00
46
             Good
                           76.00
47
             Good
                           79.00
48
             Good
                           79.50
49
             Good
                           80.00
50
             Good
                           80.87
51
             Good
                           82.00
52
             Good
                           82.96
53
             Good
                           84.00
54
                           85.00
             Good
55
             Good
                           86.00
56
             Good
                           88.00
57
             Good
                           89.00
58
             Good
                           90.00
59
             Good
                           91.00
                           92.80
60
             Good
61
             Good
                           93.00
62
             Good
                           95.00
```

```
63
            Good
                         100.00
                                         daily studying
28
                                              1 - 2 Hour
29
                                          0 - 30 minute
                                              1 - 2 Hour
30
                                              1 - 2 Hour
31
32
                                       More Than 4 hour
33
                                         30 - 60 minute
34
                                              3 - 4 hour
35
    0 - 30 minute1 - 2 Hour0 - 30 minute30 - 60 mi...
                             0 - 30 minute0 - 30 minute
36
37
    1 - 2 Hour30 - 60 minute1 - 2 Hour30 - 60 minu...
    1 - 2 Hour0 - 30 minute0 - 30 minute30 - 60 mi...
38
39
                                              2 - 3 hour
40
                                         30 - 60 minute
41
                                1 - 2 Hour0 - 30 minute
42
                                           0 - 30 minute
    0 - 30 minute30 - 60 minute1 - 2 Hour3 - 4 hou...
43
                                           0 - 30 minute
44
    1 - 2 Hour1 - 2 Hour30 - 60 minute30 - 60 minu...
45
46
                                              2 - 3 hour
47
                                           0 - 30 minute
48
                                           0 - 30 minute
49
    1 - 2 Hour30 - 60 minute2 - 3 hour30 - 60 minu...
50
                                              1 - 2 Hour
51
                                              1 - 2 Hour
                                           0 - 30 minute
52
53
                          30 - 60 minute30 - 60 minute
    1 - 2 Hour1 - 2 Hour1 - 2 Hour3 - 4 ...
54
55
                               1 - 2 Hour30 - 60 minute
                                         30 - 60 minute
56
57
                            0 - 30 minute30 - 60 minute
58
    1 - 2 Hour30 - 60 minute2 - 3 hour2 - 3 hour30...
59
                                              1 - 2 Hour
                                              3 - 4 hour
60
                                              1 - 2 Hour
61
                                              2 - 3 hour
62
                                   1 - 2 Hour3 - 4 hour
63
student behavior
    certification course
                           gender department
                                                height(cm)
                                                             weight(kg) \
0
                              Male
                                           BCA
                                                     100.0
                                                                   58.0
                       No
1
                                                      90.0
                       No
                           Female
                                          BCA
                                                                   40.0
2
                      Yes
                              Male
                                          BCA
                                                     159.0
                                                                   78.0
3
                      Yes
                            Female
                                           BCA
                                                     147.0
                                                                   20.0
4
                       No
                              Male
                                          BCA
                                                     170.0
                                                                   54.0
. .
                               . . .
                                                                    . . .
                      . . .
                                           . . .
230
                                                     170.0
                      Yes
                              Male
                                    B.com ISM
                                                                   76.0
```

231 232 233 234		Yes Yes Yes No	Female (.com ISI BC/ Commerco .com ISI	A 139.0 e 153.0	52.0 33.0 58.0 39.0
	10th_mark \	12th_mark	college_r	mark	hobbies	daily_studying
0	79.0	64.0	8	80.0	Video Games	0 - 30 minute
1	70.0	80.0	•	70.0	Cinema	30 - 60 minute
2	71.0	61.0	!	55.0	Cinema	1 - 2 Hour
3	70.0	59.0	!	58.0 R	eading books	1 - 2 Hour
4	40.0	65.0	:	30.0	Video Games	30 - 60 minute
230	72.0	67.0	(65.0	Video Games	30 - 60 minute
231	72.0	70.0		76.0	Cinema	2 - 3 hour
232	90.0	75.0		70.0	Cinema	30 - 60 minute
233	85.0	74.0		75.0	Cinema	0 - 30 minute
234	45.0	45.0	!	50.0	Sports	3 - 4 hour
0 1 2 3 4	salary_expe	ctation de 40000 15000 13000 1500000 50000	egree_sati	sfaction No Ye: Ye: No Ye:	s s o	er_in_field \ 50% 75% 50% 50% 25%
230 231 232 233 234		7000 25000 20000 20000 10		Ye: Ye: Ye: Ye: No	S S S	50% 75% 50% 75% 75%
	social	_media	COMM	ute str	ess_level_ fir	nancial_status
0	1.30 - 2	2 hour 30	- 60 minu	tes	Bad	Bad
1	1 - 1.30	0 hour 0	- 30 minu	tes	Bad	Bad
2	More than 2	2 hour 30	- 60 minu	tes	Awful	Bad

3	1.30 -	2 hour	0 - 30	minutes	Bad	good
4	1.30 -	2 hour	30 - 60	minutes	Good	good
230	More than	2 hour	30 - 60	minutes	Bad	Bad
231	30 - 60	Minute	30 - 60	minutes	Good	good
232	30 - 60	Minute	2.30	- 3 hour	Bad	good
233	More than	2 hour	2.30	- 3 hour	Awful	good
234	30 - 60	Minute	2.30	- 3 hour	fabulous	good
0 1 2 3 4 230 231 232 233 234		job stre No No No No No No No No No	ss_level	_number 3 3 4 3 2 3 2 3 4 1		2 0 0 5 2
[235	rows x 21	columns]			

Import and use seaborn

I'm importing seaborn as sns which is a common nickname for it. I decided to use a lineplot to view the data. It certainly does look like those with fabulous stress levels study more.

```
#more visualization with a line plot
import seaborn as sns

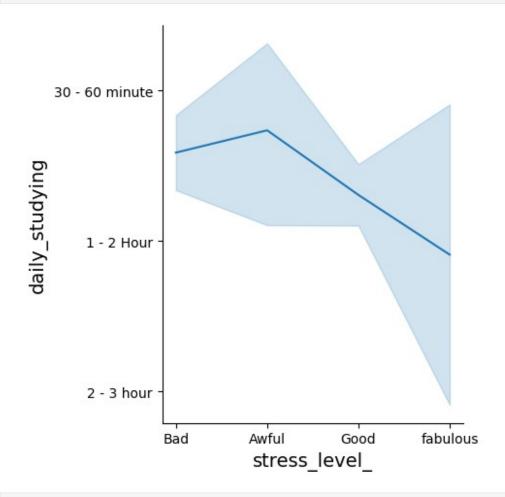
sns.relplot(x='stress_level_', y='daily_studying', kind='line',
data=student_behavior)

C:\Users\itali\anaconda3\Lib\site-packages\seaborn\_oldcore.py:1119:
FutureWarning: use_inf_as_na option is deprecated and will be removed
in a future version. Convert inf values to NaN before operating
instead.
   with pd.option_context('mode.use_inf_as_na', True):
C:\Users\itali\anaconda3\Lib\site-packages\seaborn\_oldcore.py:1119:
```

FutureWarning: use_inf_as_na option is deprecated and will be removed in a future version. Convert inf values to NaN before operating instead.

with pd.option_context('mode.use_inf_as_na', True):

<seaborn.axisgrid.FacetGrid at 0x2db3b4e6790>



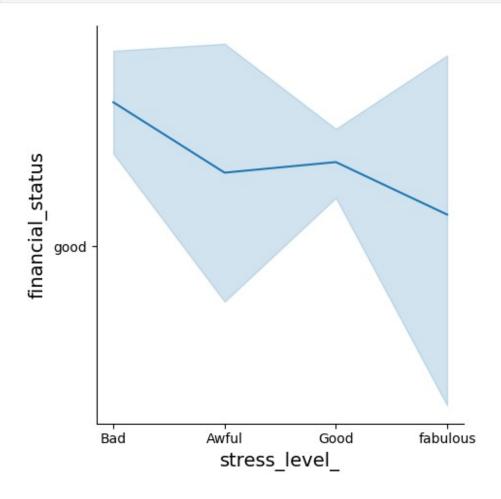
#line plot

sns.relplot(x='stress_level_', y='financial_status', kind='line',
data=student behavior)

C:\Users\itali\anaconda3\Lib\site-packages\seaborn_oldcore.py:1119: FutureWarning: use_inf_as_na option is deprecated and will be removed in a future version. Convert inf values to NaN before operating instead.

with pd.option_context('mode.use_inf_as_na', True): C:\Users\itali\anaconda3\Lib\site-packages\seaborn_oldcore.py:1119: FutureWarning: use_inf_as_na option is deprecated and will be removed in a future version. Convert inf values to NaN before operating instead.

with pd.option_context('mode.use_inf_as_na', True):



Counting the stress levels

I wanted to see the students and how long they studied overall. Most students studied between 30-60 minutes. Few studies more than 4 hours (8).

```
#groupby daily studying and stress level
#TODO - this just counts stress level column entries, reagrdless of
actual value, so below data isn't meaningful in regards to stress
level
groupby mention =
pd.DataFrame(student behavior.groupby(['stress level ',
'daily_studying'])['stress_level_'].count())
groupby_mention
                                stress_level_
stress_level_ daily_studying
Awful
              0 - 30 minute
              1 - 2 Hour
                                            5
              3 - 4 hour
                                            1
```

```
30 - 60 minute
                                              5
                                              1
              More Than 4 hour
Bad
              0 - 30 minute
                                             10
              1 - 2 Hour
                                             17
              2 - 3 hour
                                              4
                                              3
              3 - 4 hour
              30 - 60 minute
                                             33
              More Than 4 hour
                                              1
Good
              0 - 30 minute
                                             26
              1 - 2 Hour
                                             38
              2 - 3 hour
                                             18
              3 - 4 hour
                                              9
              30 - 60 minute
                                             41
                                              5
              More Than 4 hour
                                              3
fabulous
              0 - 30 minute
                                              1
              1 - 2 Hour
                                              2
              2 - 3 hour
                                              2
              3 - 4 hour
              30 - 60 minute
                                              2
              More Than 4 hour
                                              1
student_behavior
```

Conclusions

It's interesting how study time could have an impact on stress levels. It makes sense, if you study longer, you might feel better going in to take an exam or write a paper.

There's more for future analysis options. Consider asking students other poll questions. I'd love to dig deeper about commute time and grades.

Thank you for taking a look.