



جامعة مصر للمعلوماتية  
EGYPT UNIVERSITY  
OF INFORMATICS

Egypt University of Informatics  
Computer and Information Systems  
Data Analysis Course

# The Analysis of the Performance of Data Analysis Students

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## Introduction

This report analyzes data on students' study habits — whether they study alone or with friends — to explore correlations with their Cumulative Grade Point Average (CGPA) and overall performance level. By investigating these connections, the report aims to provide concise insights into effective learning strategies. The findings aim to contribute valuable information for educators and stakeholders, fostering an environment conducive to academic success and personal growth.

## Research Question

1. How does studying with friends or alone correlate with students' overall CGPA?
2. Are there significant differences in the performance levels of students who prefer group study compared to those who prefer studying alone?
3. Is there a noticeable difference in the study habits of students at different academic performance levels?
4. To what extent does the frequency of group study sessions impact students' CGPA?

## Hypothesis

Students who prefer studying with friends will exhibit a statistically significant difference in their overall CGPA compared to those who prefer studying alone.

## Population of Interest:

University Students

## Sampling Method:

Using a google form survey, I conducted a 6 question survey about the study habits. I used convenience sampling to only collect data from university students and exclude school students and post graduate students.

## Bias Identification:

### **Selection Bias:**

The survey is conducted online, it attracted a specific demographic that is more comfortable with or has better access to technology.

## Survey Questions:

What is your university level?

What do you study?

Do you study out with friends?

How often do you study with friends?

If yes, what impact do you notice on your academic performance when you study with your friends?

What is your CGPA (0-4)?

Online survey link:

<https://docs.google.com/spreadsheets/d/1nmSQzBFMiat77XaqB092XixSax-SjvtuHg0jLJmZScE/edit>

Number of samples collected: 39

## Analysis:

Pearson Correlation between the performance and CGPA is : 0.1847780300755038

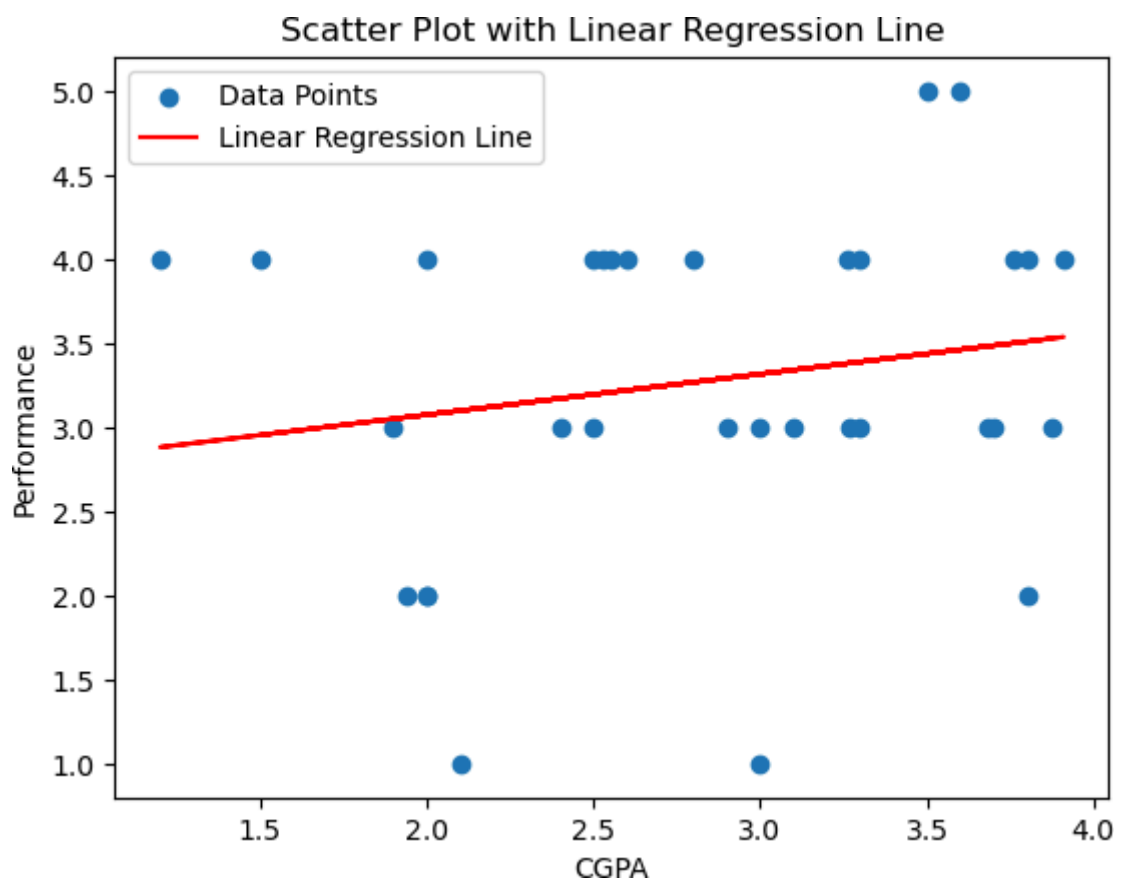
It appears that there is positive weak correlation between the two variables.

Pearson Correlation between the studying habit with friends and the CGPA is: -0.12955522682769433

It appears that there is negative weak correlation between the two variables.

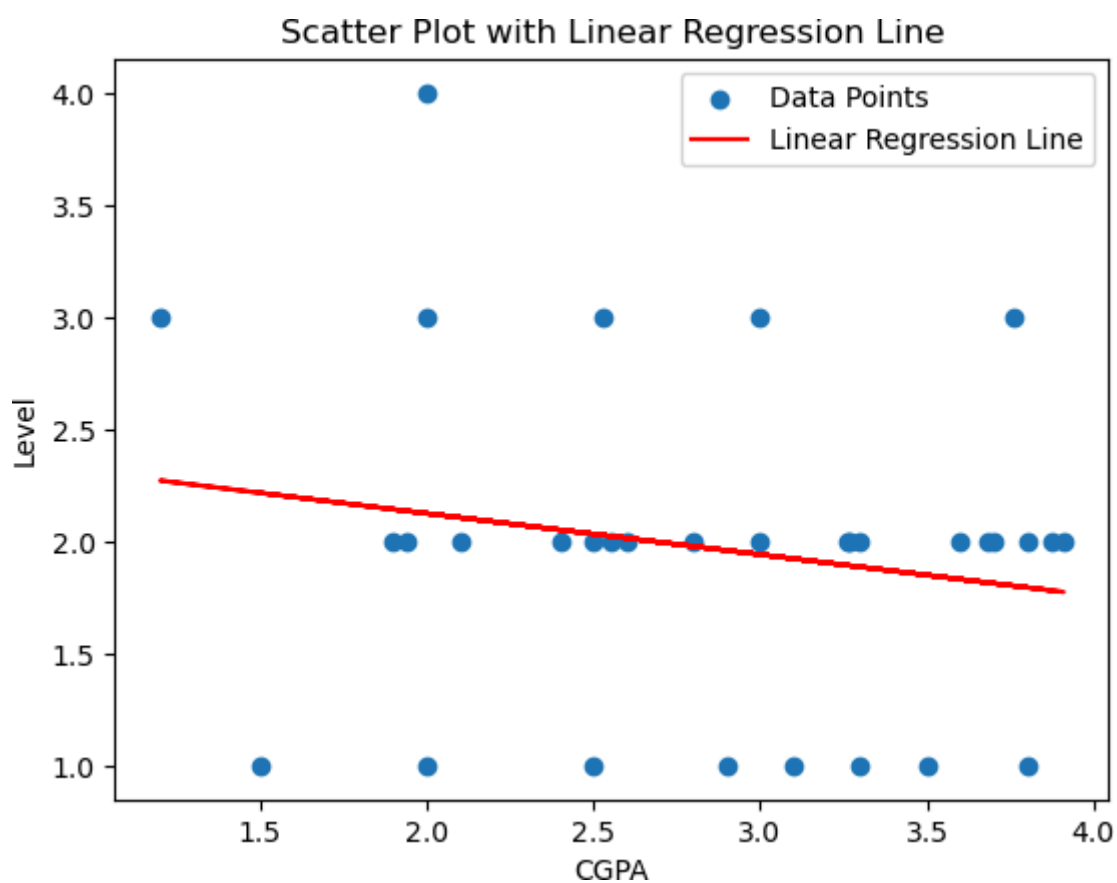
	Level	Study with friends	How often	Performance	CGPA
count	32.000000	32.000000	32.000000	32.000000	32.000000
mean	1.968750	0.625000	1.531250	3.281250	2.852281
std	0.739851	0.491869	0.671271	0.991394	0.757105
min	1.000000	0.000000	0.000000	1.000000	1.200000
25%	1.750000	0.000000	1.000000	3.000000	2.325000
50%	2.000000	1.000000	2.000000	3.000000	2.950000
75%	2.000000	1.000000	2.000000	4.000000	3.525000
max	4.000000	1.000000	2.000000	5.000000	3.910000

Above is the basic descriptive statistics of my study.



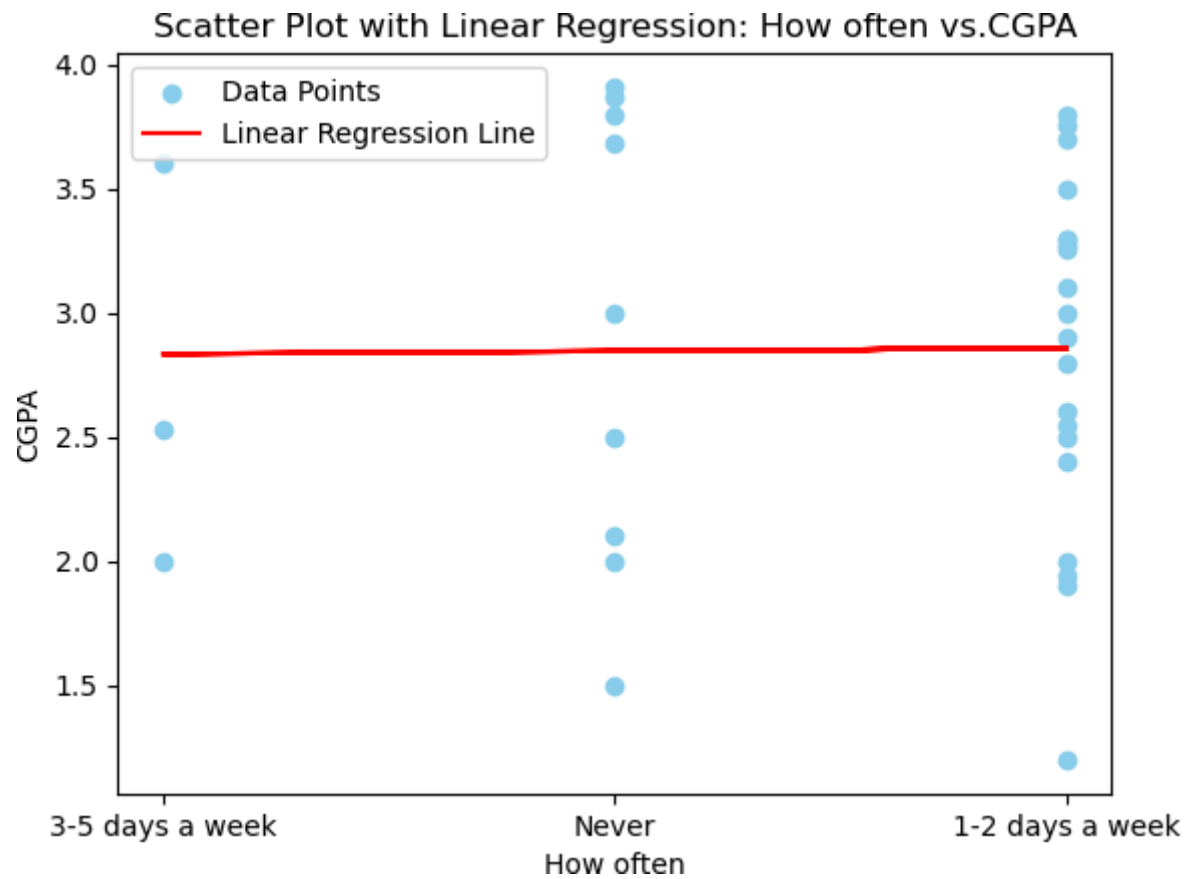
Above is the scatter plot with linear regression line that measures the performance while studying with friends to the CGPA.

As shown in the graph, there is a weak positive correlation between both variables.



Above is the scatter plot with linear regression line that measures the level of the students who studies with friends to the CGPA.

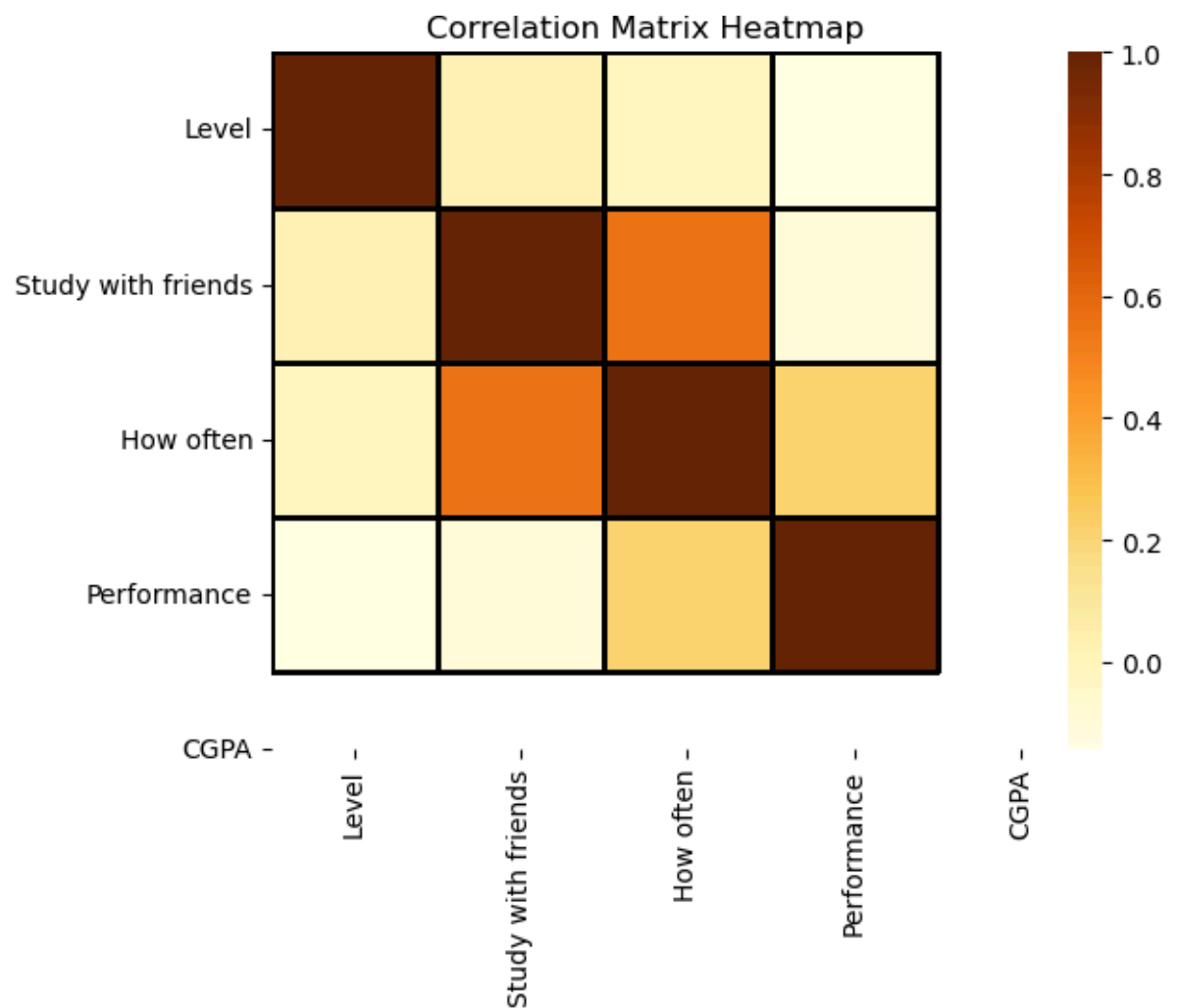
As shown in the graph, there is a moderate negative correlation between both variables.



Above is the scatter plot with linear regression line that measures how often the student studies with friends a week and the CGPA.

As shown in the graph, there is a moderate negative correlation between both variables.

## Conclusion



Above is the correlation matrix heatmap of the data collected.

As shown in the graph, there is a weak to no correlation between all the variables.

In conclusion, after analysing the data there is no correlation between studying with friends and how often they do it and the performance and CGPA.

## Any potential issues

Collecting categorical data was challenging to analyse when it came to how often they study with friends.

The data was collected were mostly people from EUI and not from universities across Egypt.

The bigger percentage of people participating in the survey were year 2 students.

Some CGPA were written in the german form, so I converted them to 0-4 CGPA.