Project 1

The hypothesis for this research is that “**Students in technical programs tend to have a higher CGPA than students in non-technical programs.”**

The objective of this project is to examine whether there is a significant difference in the Cumulative Grade Point Average (CGPA) between students enrolled in technical programs (e.g., engineering, computer science, etc.) and those enrolled in non-technical programs (e.g., management, humanities, etc.).

To validate or disprove the hypothesis, I will use the dataset named “Academic performance.csv” that contains academic records of students, including their program of study, gender, graduation year, and performance metrics such as CGPA and SGPA. This research will provide insights into whether the academic performance (CGPA) of students is influenced by their choice of program, with a focus on comparing the performance of students in technical vs. non-technical fields.

Using head to display the columns

A screenshot of a computer screen

AI-generated content may be incorrect.

I selected the columns

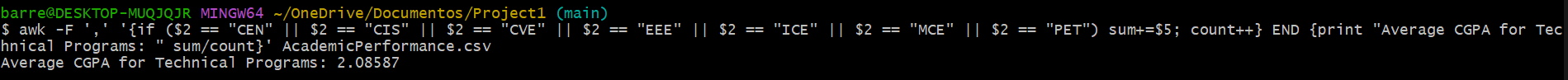
* ID No - Randomly generated number sequence
* Prog Code (Program of Study)
* YoG (Year of Graduation)
* CGPA (Overall Cumulative Grade Point Average)
* CGPA100 - Cumulative Grade Point Average at the end of the first year
* CGPA400 - Cumulative Grade Point Average at the end of the fourth year

I created a filed named “columns\_AP.csv” containing the columns above using awk command and pushed it to GitHub.

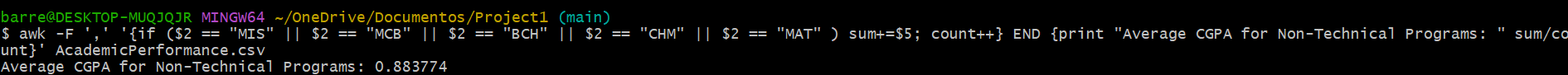


Created an awk command to gather initial data. Since I think students in technical programs have a higher CGPA then those in non-technical programs, I filtered the students between Technical and Non-Technical Students major and compared the average CGPA for both groups.

In the first awk I calculated average CGPA for technical students(CEN - Computer Engineering, CIS - Computer Science, CVE - Civil Engineering, EEE - Electrical and Electronics Engineering, ICE - Information and Communication Engineering, and MCE - Mechanical Engineering)



For the second awk I calculate average CGPA for non-technical students (MIS - Management and Information System, MCB – Microbiology, BCH – Biochemistry, CHM - Industrial Chemistry, MAT – Mathematics)



Based on these initial calculations, the average CGPA for students in technical programs is **2.08587**, which is noticeably higher than the average CGPA of **0.883774** for students in non-technical programs. This suggests that, at least in this dataset, students in technical programs tend to have higher academic performance as measured by CGPA compared to their non-technical counterparts.