Ctrl+Alt+Analyze

Malika; Kunal; ZuxiLu

Table of contents

0.1 Rebooting Student Success, One Habit at a Time

By: Malika, Kunal, ZuxiLu

ETC5513 – Collaborative & Reproducible Practices ::: {.columns}

- Rebooting learning through daily habits
- **Ctrl** your study time, **Alt** your distractions, **Del** your doubts.

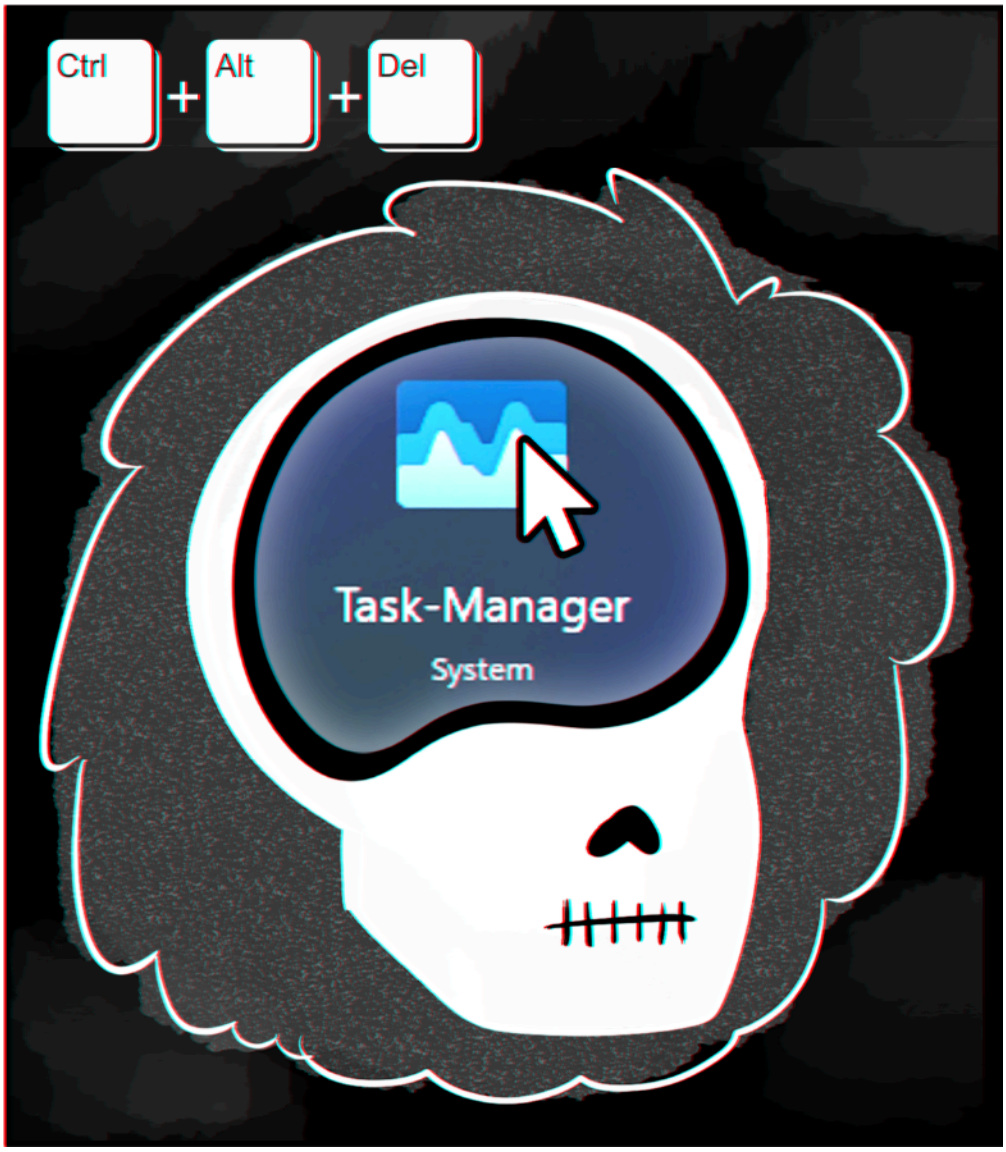

Figure 1: Ctrl + Alt + Del your distractions for academic success

0.2 Problem introduction

- Academic performance is affected by daily habits like:
- Study hours per day, Classroom attendance, Sleep hours
- On the other hand, spending too much time on:
- Social media, Streaming platforms like Netflixmay reduce focus and study time.
- Research Objective:Quantify the relationship between student habits and academic performance using correlation analysis.
- We aim to discover which habits support academic success and which habits hinder it.

0.3 Dataset description

- The dataset includes **100 students** and **16 variables** covering lifestyle habits and exam performance.
- Main variables include:
  - Study hours per day
  - Class attendance (%)
  - Sleep hours
  - Social media hours
  - Netflix hours
  - Exam score
- Main variables are grouped into:
  - **Good habits:**
    `StudyHours`, `AttendanceRate`, `SleepHours`
  - **Bad habits:**
    `SocialMediaHours`, `NetflixHours`
- Target variable:
  `ExamScore` (numeric score for student performance)
- Data was cleaned and renamed for clarity before analysis.

0.4 Methods

0.4.1 Analysis method

Correlational analysis used to test how student lifestyle habits relate to academic performance

0.5 Technique

- **Pearson correlations** drawn using `cor()` in R
- Created **bubble-style** plots using `corrplot()` to visualize magnitude and direction of relationships
  Blue = positive
  Red = negative
  Circle size = strength

0.6 Table 1: Good Habits Correlation Table

	StudyHours	AttendanceRate	SleepHours	ExamScore
StudyHours	1.00	0.03	-0.03	0.83
AttendanceRate	0.03	1.00	0.01	0.09
SleepHours	-0.03	0.01	1.00	0.12
ExamScore	0.83	0.09	0.12	1.00

0.7 Table 2: Bad Habits Correlation Table

	SocialMediaHours	NetflixHours	ExamScore
SocialMediaHours	1.00	0.01	-0.17
NetflixHours	0.01	1.00	-0.17
ExamScore	-0.17	-0.17	1.00

0.8 Results

- **Study hours** shows a **strong positive correlation** with exam scores

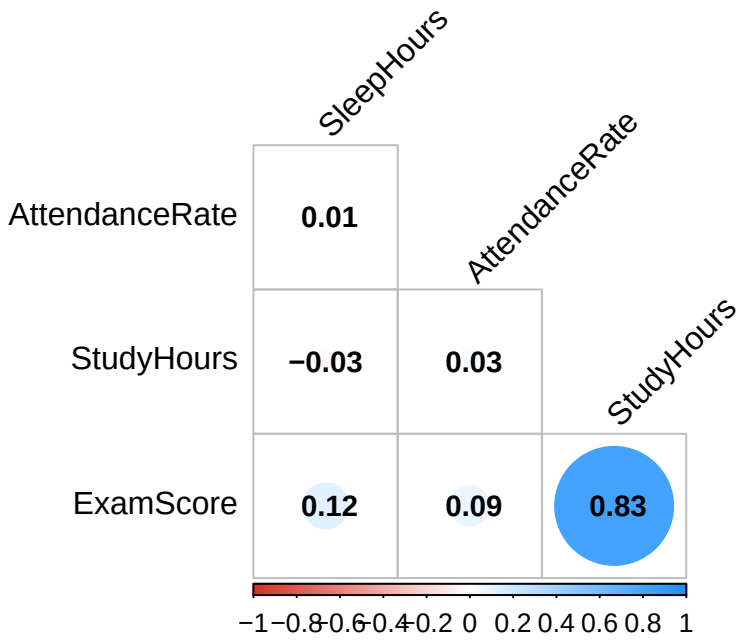

Figure 2: Bubble-style correlation matrix of student habits and exam score

0.9 Results Continued

- *Social media hours* and *Netflix hours* show only **weak negative correlation** with exam scores
- *Attendance rate* and *Sleep hours* also show only **weak positive correlation** with exam scores

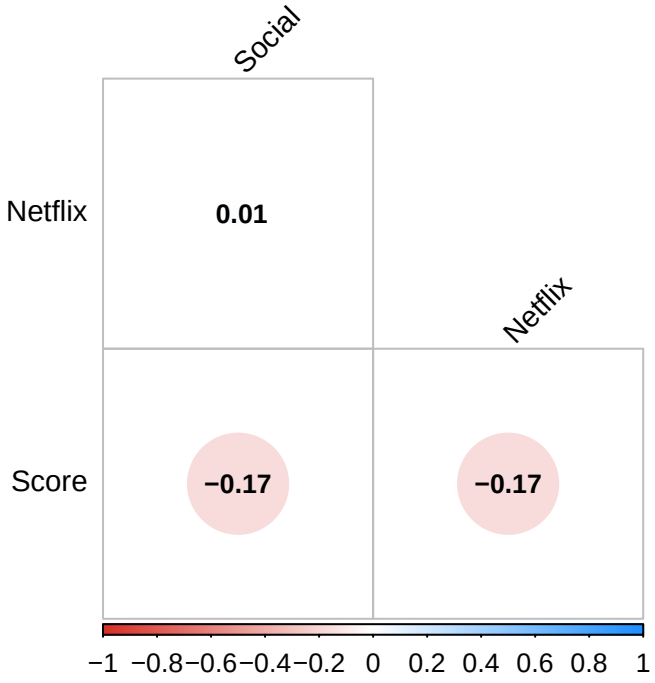

Figure 3: Bubble-style correlation matrix of student habits and exam score

0.10 Conclusions & Recommendations

- **StudyHours** has a **strong positive correlation** with ExamScore (r = 0.83).
- **AttendanceRate** (r = 0.09) and **SleepHours** (r = 0.12) show **weak positive links**.
- **SocialMediaHours** and **NetflixHours** each have a **weak negative correlation** (r = -0.17) with scores.
- These results suggest **study time is the most reliable predictor** of academic success.