

Students' Social Media Addiction

Information Visualisation 25/26

Diogo Fernandes 114137 – 50%
Raquel Vinagre 113736 – 50%



Introduction

Social Media has become a major part of people's lives, especially students.

While these platforms offer opportunities for entertainment, learning and connection, in the past few years its excessive use has raised concerns about addiction and impact on academics and mental health.

Dataset:

www.kaggle.com/datasets/adilshamim8/social-media-addiction-vs-relationships



About the Dataset



Volume

Total of 705 students were surveyed



Population

Students aged 18-24 enrolled in high school, undergraduate, or graduate programs



Timeframe

Data collected via a one-time online survey administered in Q1 2025



Geography

Multi-country coverage

Limitations



Self-reported bias

May be subject to
social-desirability
effects

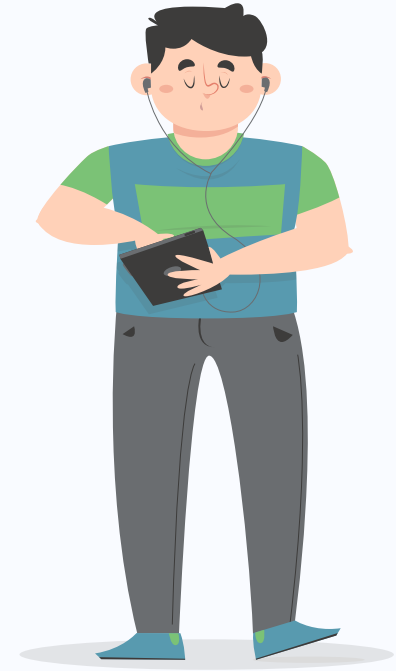


Cross-Sectional Design

One-time survey may
not depict accurate
conclusions

Key variables

Student_ID	Unique Identifier
Age	Age in years
Gender	Male / Female
Academic_Level	High School / Undergraduate / Graduate
Country	Country of residence
Avg_Daily_Usage_Hours	Average hours per day on social media
Most_Used_Platform	Instagram, TikTok, etc...
Affects_Academic_Performance	Impact on academics (Y/N)
Sleep_Hours_Per_Night	Average nightly sleep hours
Mental_Health_Score	Mental Health Score (1=low to 10=high)
Relationship_Status	Single / In Relationship / Complicated
Conflicts_Over_Social_Media	No. of Relationship conflicts due to Social Media
Addicted_Score	Social Media Addiction Score (1=low to 10=high)



Personas

Possible Task:

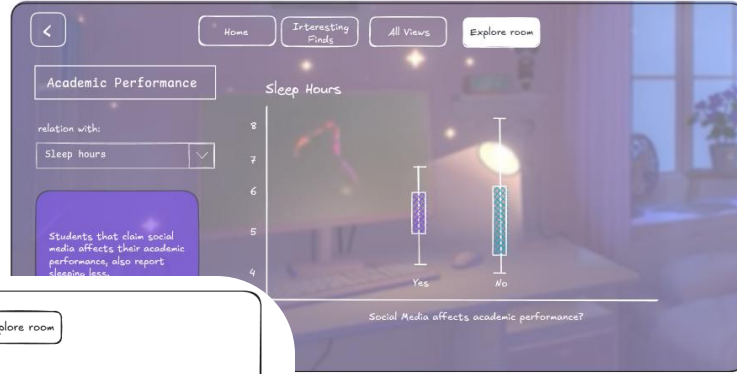
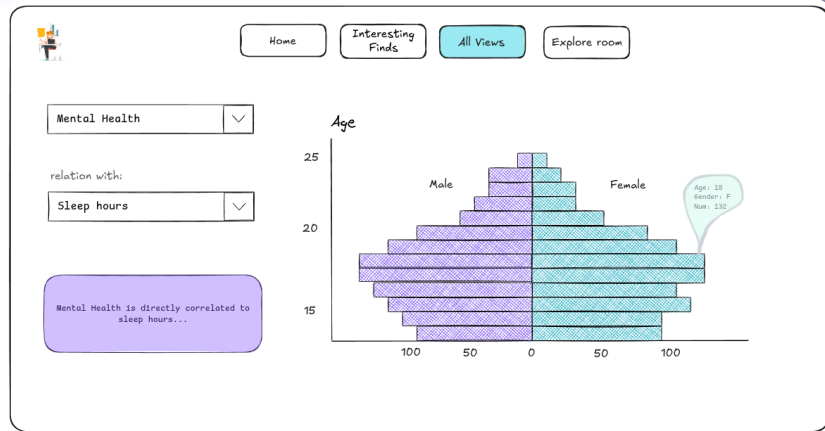
Compare groups of students to see how Social Media affects them differently.



Academic researchers

Possible Task:

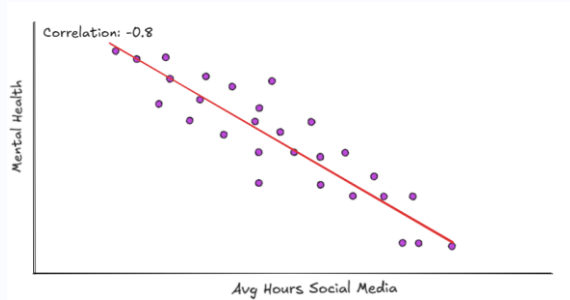
Check if a heavy use of SM impacts mental health and relationship development.



Low-Fidelity Prototype

LF - Visualisation Techniques

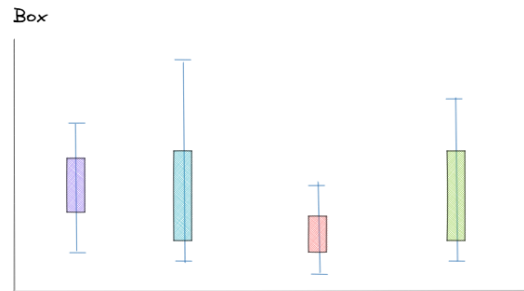
Scatter Plot



Example Usages:

Task - What is the correlation between Mental Health and Social Media average daily hours?

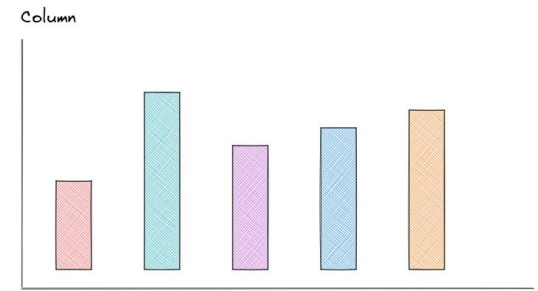
Box Plot



Example Usages:

Task – How does social media affect sleep hours?

Column Chart

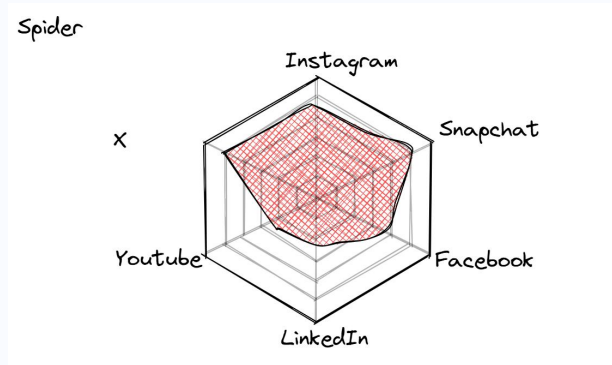


Example Usages:

Student distribution (Age, Academic Level, Gender)

LF - Visualisation Techniques

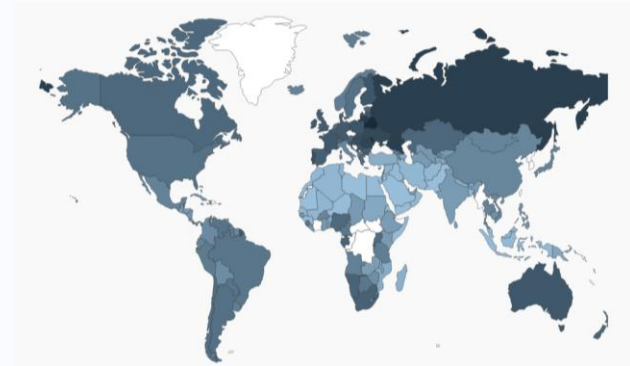
Spider Plot



Example Usages:

Task - Which was found to be the most used Social Media platform?

Map Chart



Example Usages:

Distribution by country (platform, addiction score, ...)

LF - User Evaluation

We asked colleagues to explore, complete tasks and evaluate our Low fidelity prototype.

5 Participants (4M – 1F)

Questions:

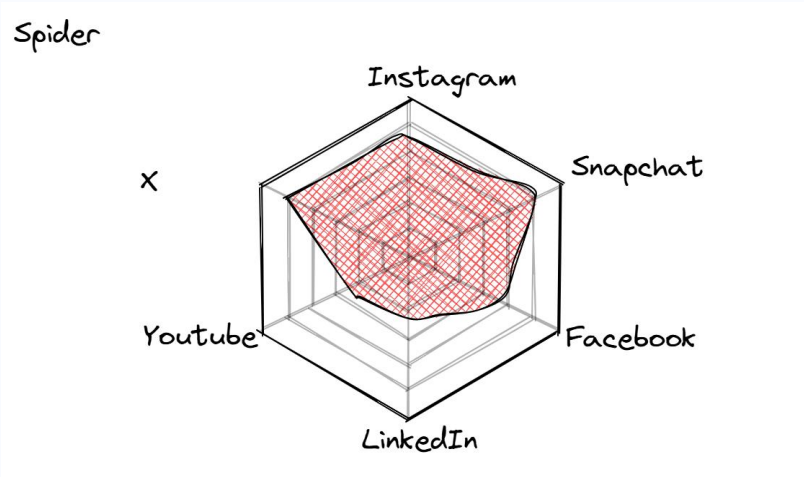
SpiderChart – What is the most used platform?

ScatterPlot – What is the correlation value between Mental Health VS Daily Usage

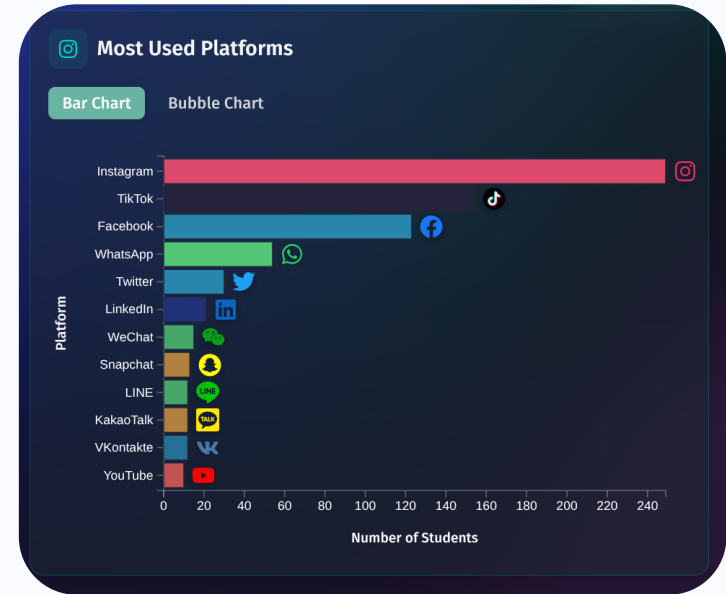
BoxPlot – How does social media affect sleeping hours?

LF - Feedback

SpiderPlot– What is the most used Platform?

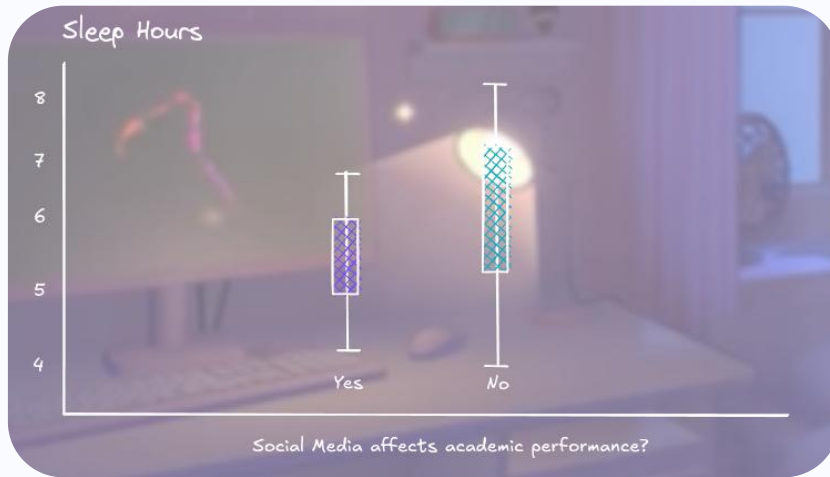


Harder to verify which one is the most used
Doesn't work if there are a lot of platforms



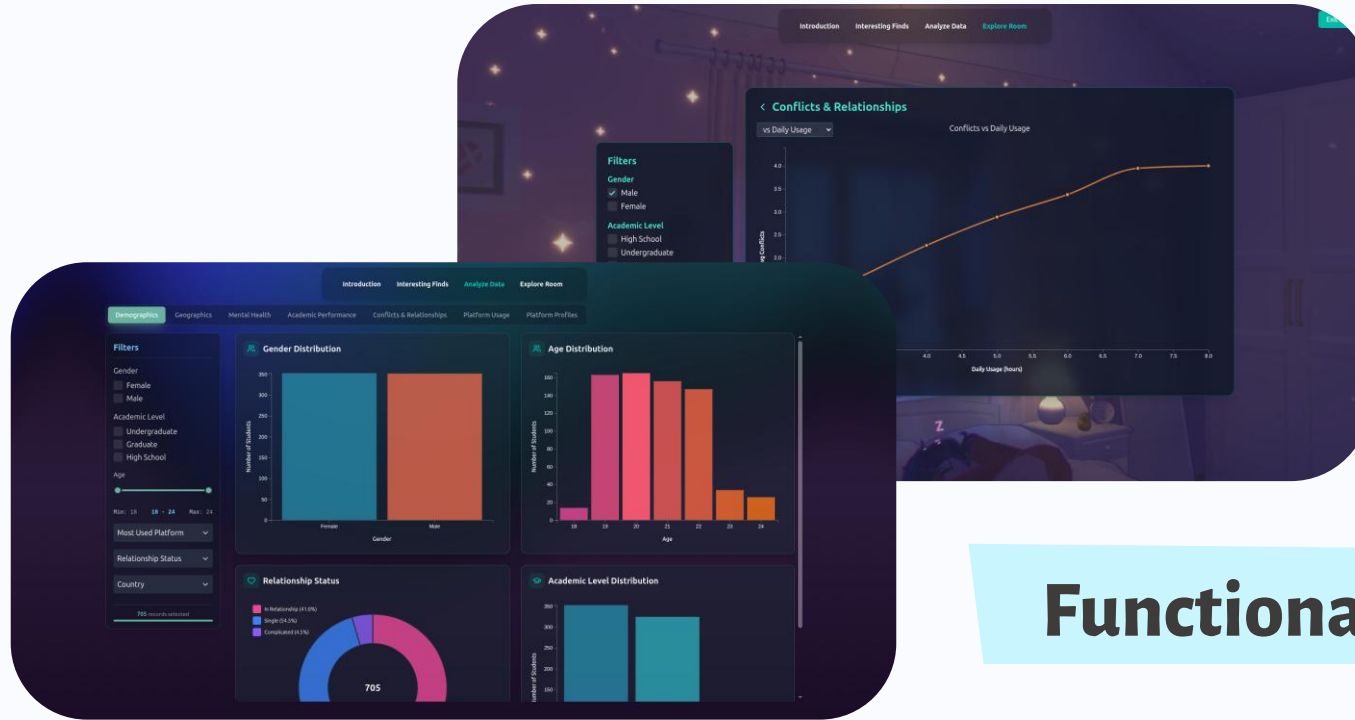
LF - Feedback

BoxPlot – How does social media affect sleeping hours?



Questions in labels

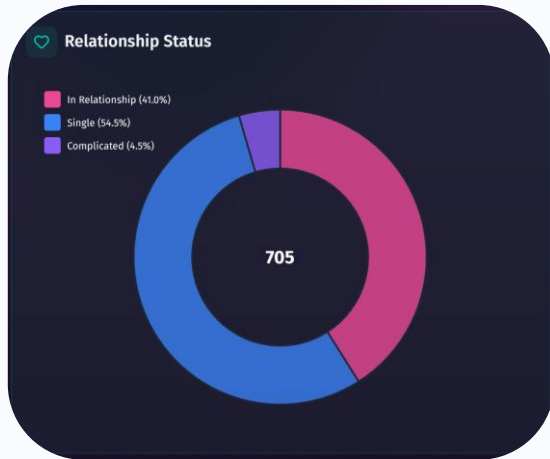
Low visibility



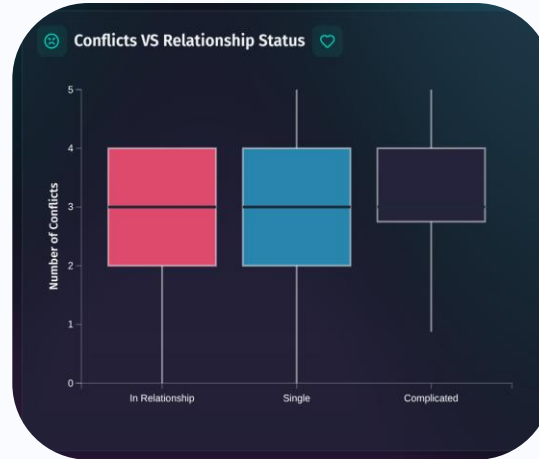
Functional Prototype

HF - Visualisation Techniques

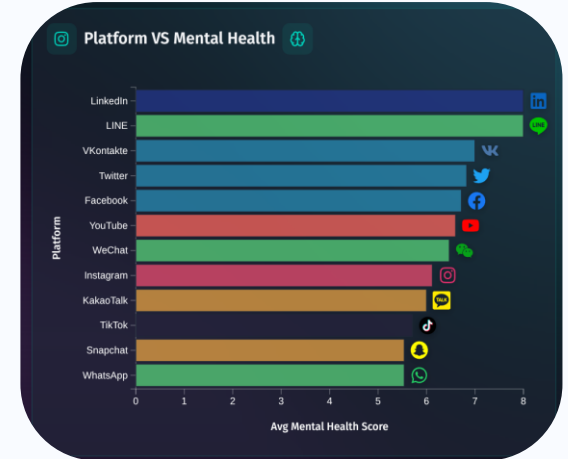
Pie/Donut Plot



Box Plot

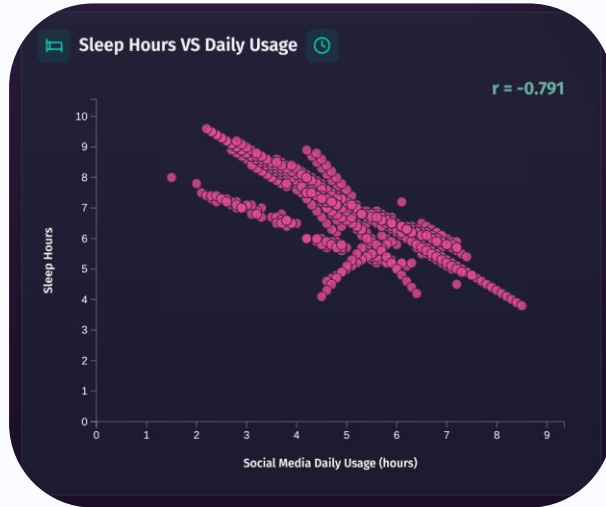


Bar Chart

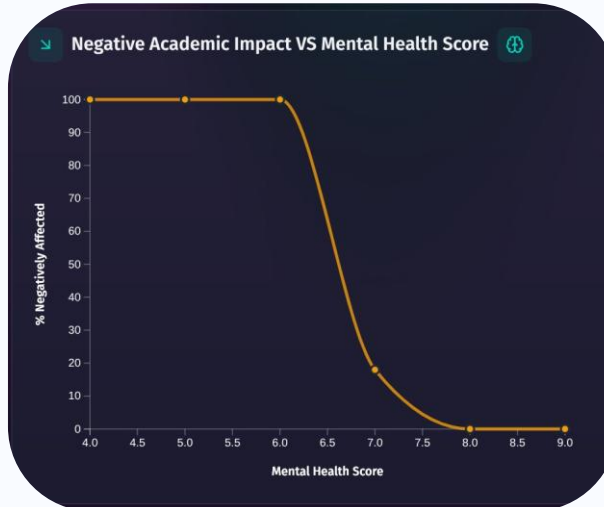


HF - Visualisation Techniques

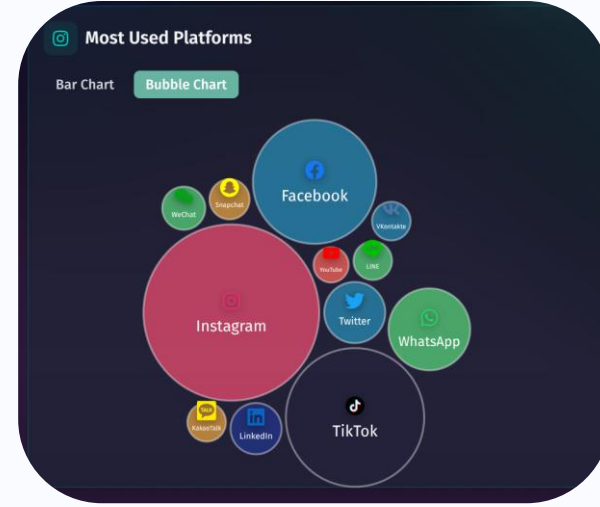
Scatter Plot



Line Chart

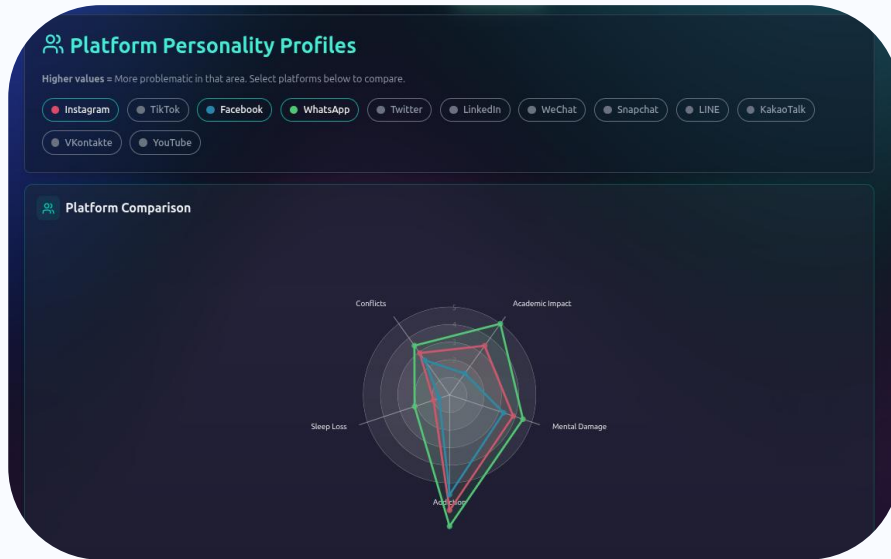


Bubble Chart



HF - Visualization Techniques

Spider Plot



Map Chart



HF - Visualisation Techniques

Filters

Filters

Gender

☐ Female

☐ Male

Academic Level

☐ Undergraduate

☐ Graduate

☐ High School

Age

Min: 1818 - 24Max: 24

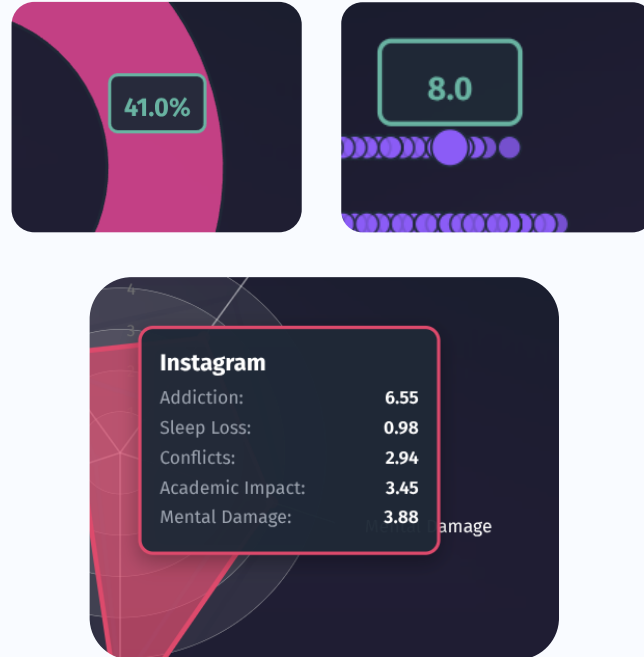
Most Used Platform

Relationship Status

Country

705 records selected

Tooltips



Heuristic Evaluation

Nielsen's 10 Usability Heuristics

Severity Rate:

- 0 – Not a usability problem
- 1 – Cosmetic problem
- 2 – Minor usability problem
- 3 – Major usability problem
- 4 – Usability catastrophe

- 1: Visibility of System Status – **1: No warning for empty data (ex.: very specific filter combinations)**
- 2: Match Between the System and the Real World – **No Issue**
- 3: User Control and Freedom – **2: Only filter grouping and no side-by-side comparison**
- 4: Consistency and Standards – **1: Some colours are not standardized**
- 5: Error Prevention – **No issue**

Heuristic Evaluation

Nielsen's 10 Usability Heuristics

6: Recognition Rather than Recall – **No issue**

7: Flexibility and Efficiency of Use – **No issue**

8: Aesthetic and Minimalist Design – **No issue**

9: Help Users Recognize, Diagnose, and Recover from Errors – **No issue**

10: Help and Documentation – **No issue**

Severity Rate:

0 – Not a usability problem

1 – Cosmetic problem

2 – Minor usability problem

3 – Major usability problem

4 – Usability catastrophe

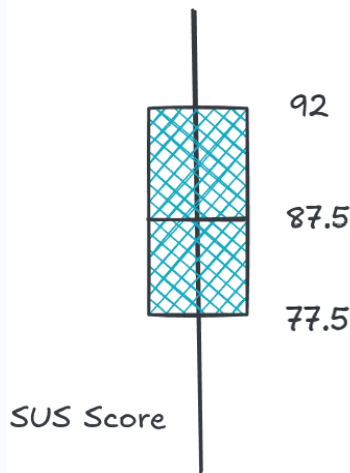
System Usability Scale (SUS)

We asked colleagues to explore, complete tasks and evaluate our system.

4 Participants (3M – 1F)

21 years old

Average SUS score: **87.5**



Social Media Addiction VI - Usability Test

This form consists of 3 tasks, created to assess the usability of our prototype for our Visualisation of Information project. **You can give up at any time.**

Não partilhado

* Indica uma pergunta obrigatória

Task 1 - What is the **second most** used platform by undergraduate males with **20 years or less** *

A sua resposta

Task 2 - What is the correlation between **Mental Health** VS **Daily Usage**? *

A sua resposta

Task 3 - How many **undergraduate female** older than 20 years old claimed to have 2 or less conflicts due to social media? *

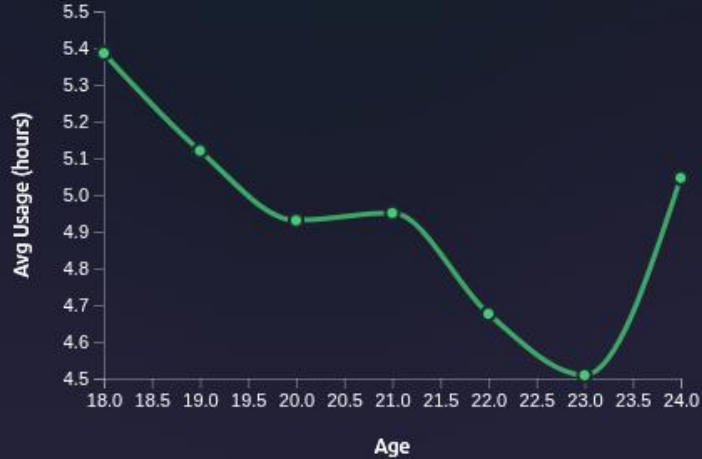
A sua resposta

Task 4 - In the explore room section, what is the **correlation between Sleep Hours and Daily Usage** for females older than 20?

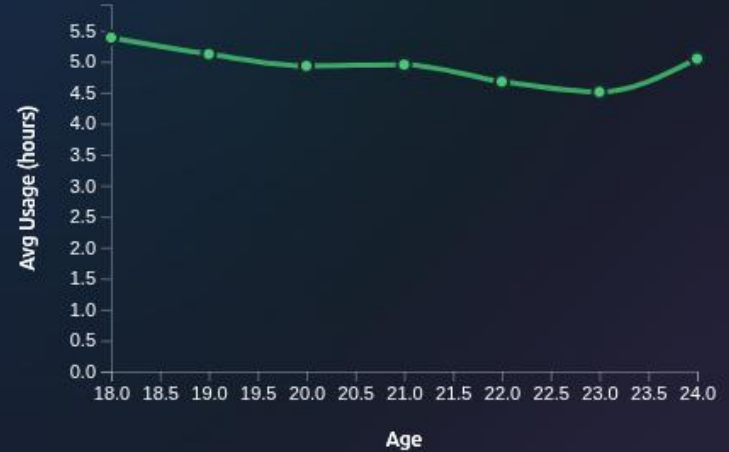
A sua resposta

User feedback and improvements

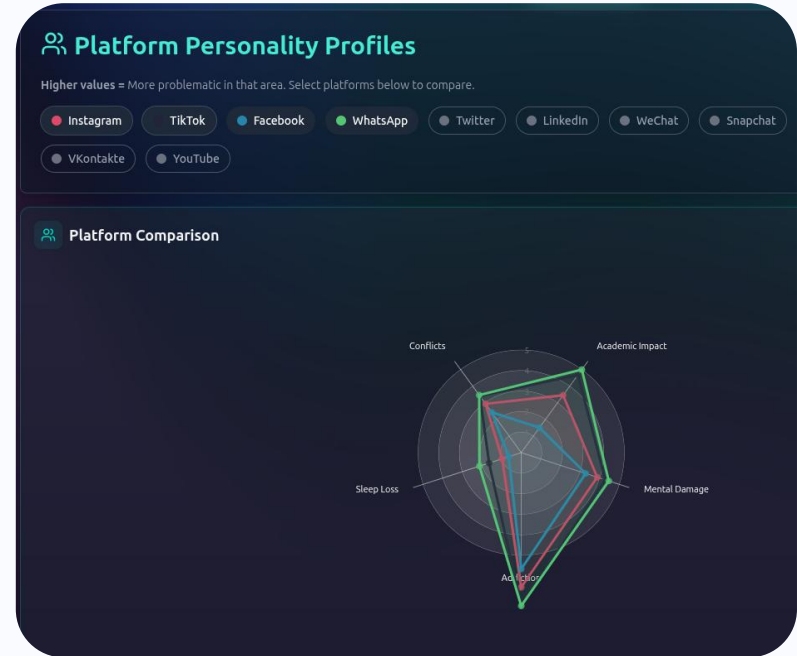
Usage by Age Trend



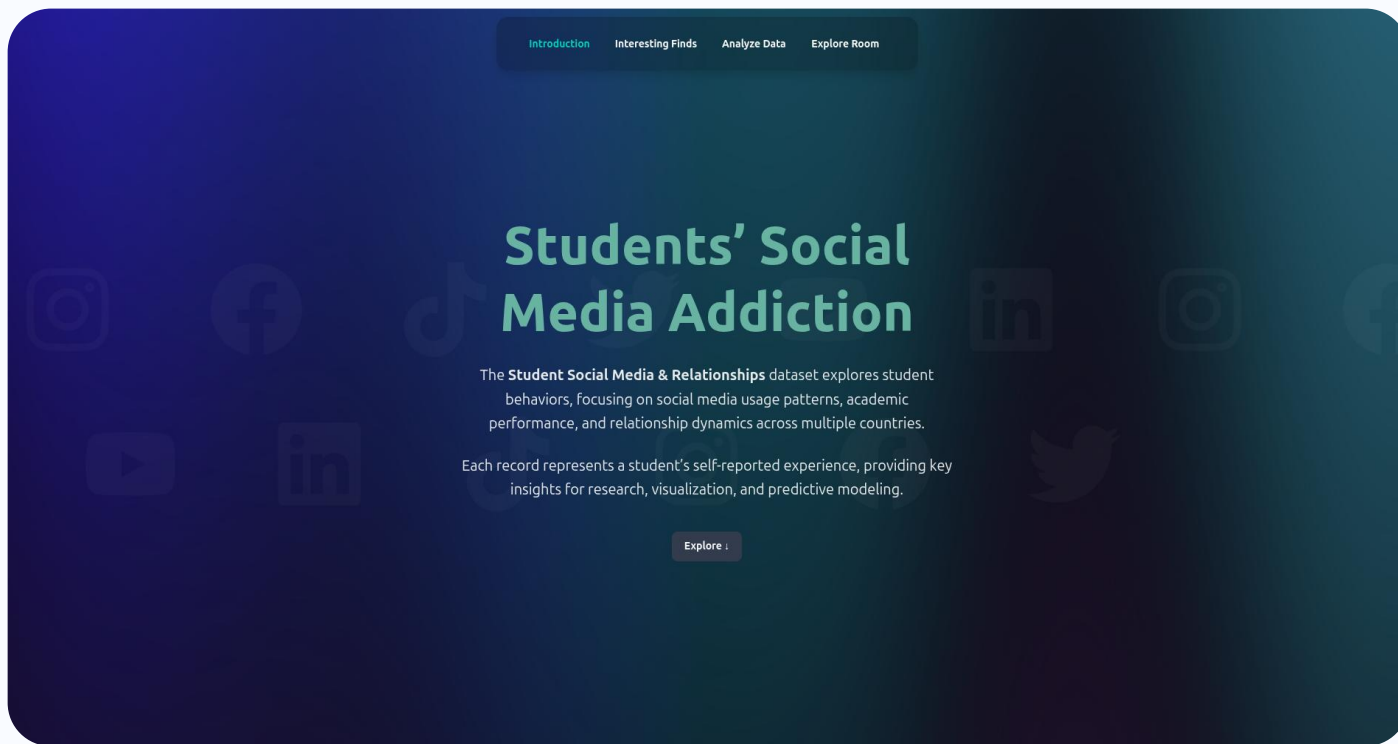
Usage by Age Trend



User feedback and improvements



Functional Prototype - Demo



Conclusions

Excessive Social Media usage impact:

- **Worse** academic performance
- **Less** sleep hours
- **Worse** mental health
- **Higher** number of conflicts

Interesting finds:

- **Average Daily Usage Hours: 4.92h**
- **Average Daily Sleep Hours: 6.9h**
- **Average Mental Health Score: 6.2/10**

Most problematic platforms:

- **Lower Mental Health: Whatsapp**
- **Most Addictive: Snapchat**
- **Biggest Negative Academic Impact: Whatsapp**



Thanks!

Information Visualisation 25/26

Website: 114137 – 50%
Raquel Vinagre 113736 – 50%



Check out our project!

Website: social-media-addiction.github.io

Code: github.com/social-media-addiction