Final Project

Data Visualisation using Tableau

Topic - "Visualising the Impact of Lifestyle on Student Mental Health"

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Problem Statement

The mental health of students has become a significant concern, particularly during the shift to online learning prompted by the COVID-19 pandemic. With the sudden change in routine, students experienced increased screen time, reduced physical activity, and heightened academic pressure—all contributing factors to mental health challenges such as stress, anxiety, and disrupted sleep. Understanding how these lifestyle factors interact is crucial for developing strategies to support student well-being.

This project uses a dataset titled **"Student Mental Health Analysis During Online Learning"** sourced from **Kaggle**. It contains information on students' age, gender, sleep duration, screen time, physical activity, anxiety levels, stress, and academic performance change. By leveraging Tableau, an interactive data visualization tool, we explore meaningful correlations between these variables.

The main objective is to uncover insights into how different lifestyle habits affect mental health indicators among students. Specifically, the visualizations aim to answer questions such as:

- How does screen time influence sleep and stress levels?
- What is the relationship between anxiety and academic performance?
- How do stress levels vary across educational stages?
- Which combinations of stress and sleep duration are linked to excessive screen usage?

These insights can help educators, parents, and policymakers better understand student behaviour patterns and implement initiatives to promote mental wellness in academic environments.

Solution Approach

Tools Used:

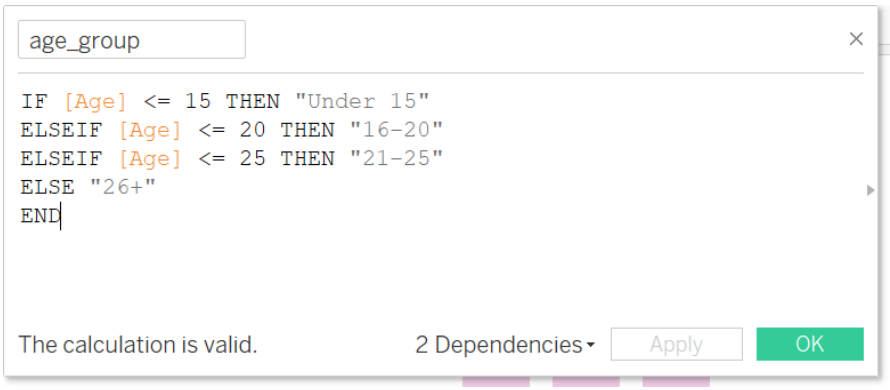
- Tableau Public

Key Charts and Visuals:

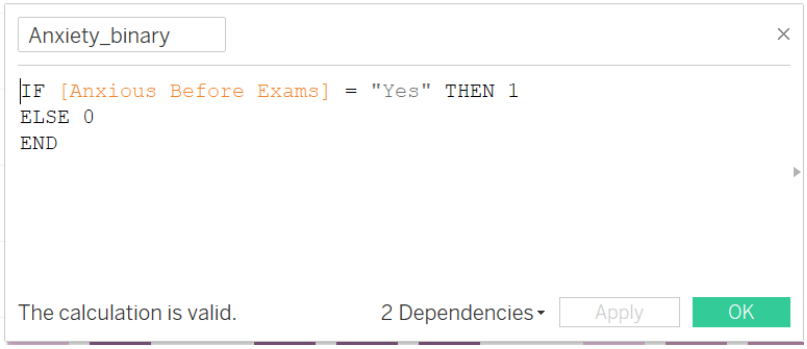
- Bar Chart: Stress Level Distribution by Education Level
- Scatter Plot: Impact of Screen Time on Sleep and Stress
- Bar Chart: Academic Performance Change vs Anxiety
- Heatmap: Lifestyle Factors (Stress Level vs Sleep Duration)

Filters and Calculated Fields:

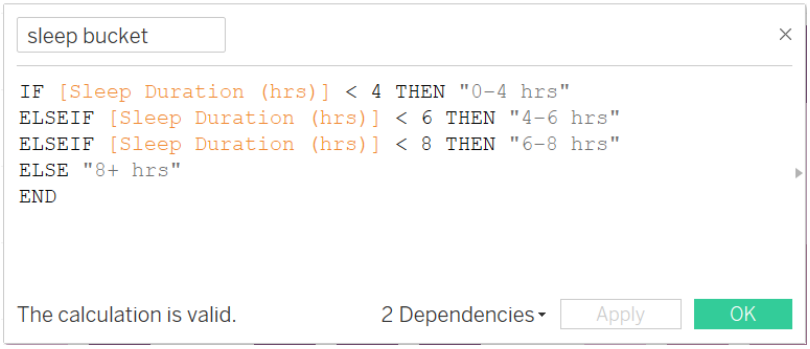
- Filters Used: Gender, Age Group
- Calculated Fields:
  - Age Grouping:



  - Anxiety Binary:



- Sleep Duration Buckets:



Output / Insights

Sheet 1. Stress Level Distribution by Education Level

- Higher education levels (MA, MSc, MTech) show more medium-to-high stress students.
- Undergraduate classes (Class 8–11) show comparatively lower stress levels.

Sheet 2. Impact of Screen Time on Sleep and Stress

- As average screen time increases, average sleep duration tends to reduce.
- Many students with higher screen time also report high or medium stress levels.

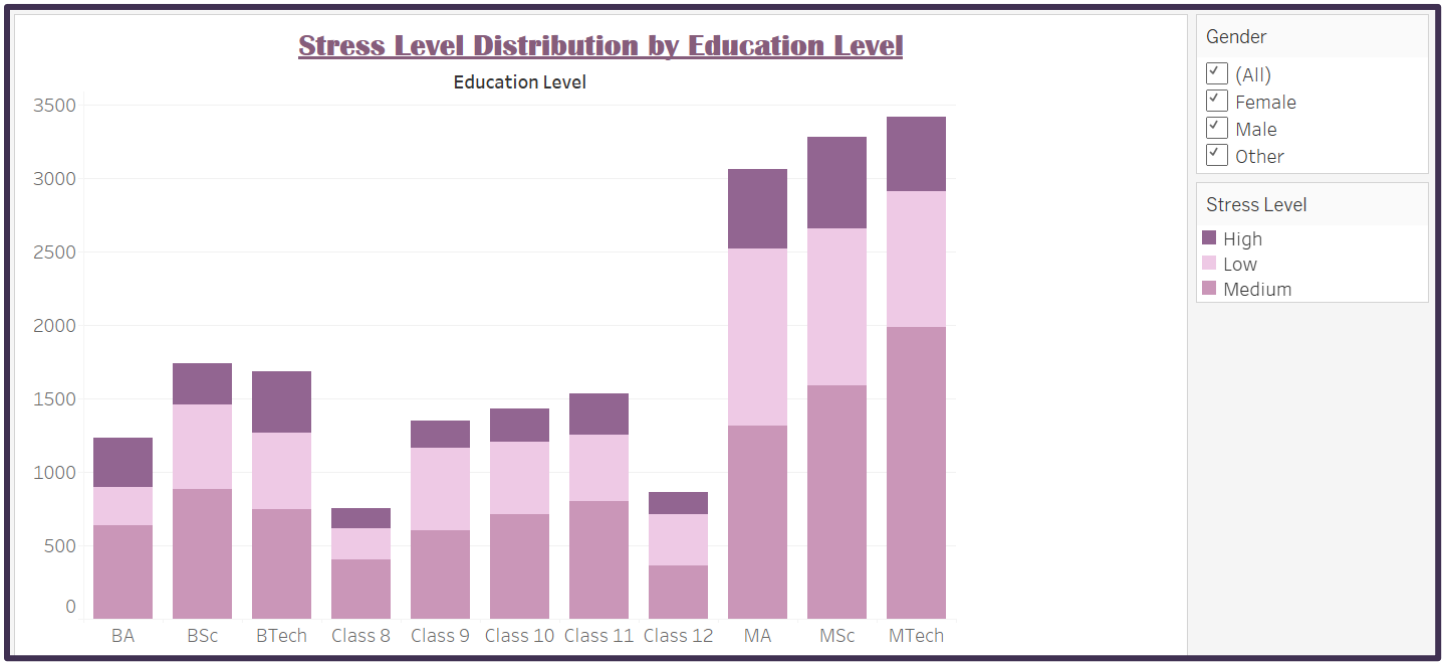
Sheet 3. Academic Performance Change vs Anxiety

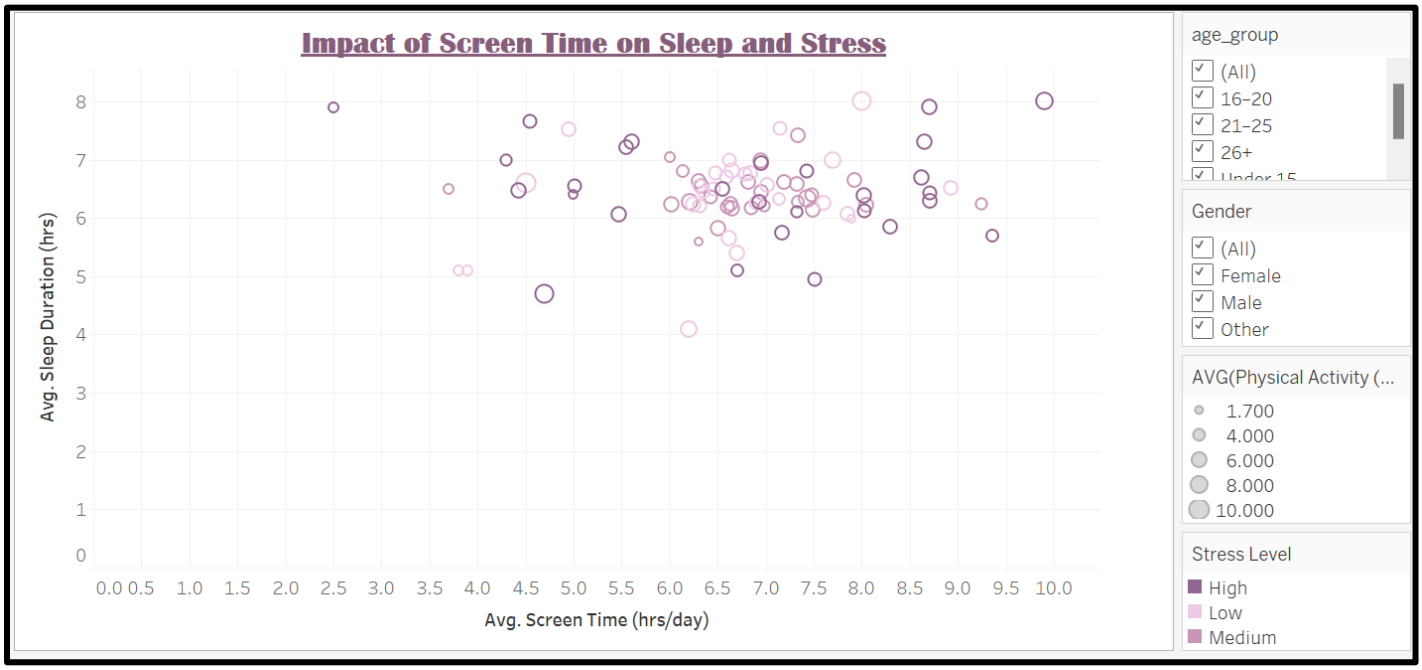
- Students reporting anxiety had a more varied academic performance.
- Majority with anxiety showed 'Same' or 'Improved' performance, possibly due to stress-driven motivation.

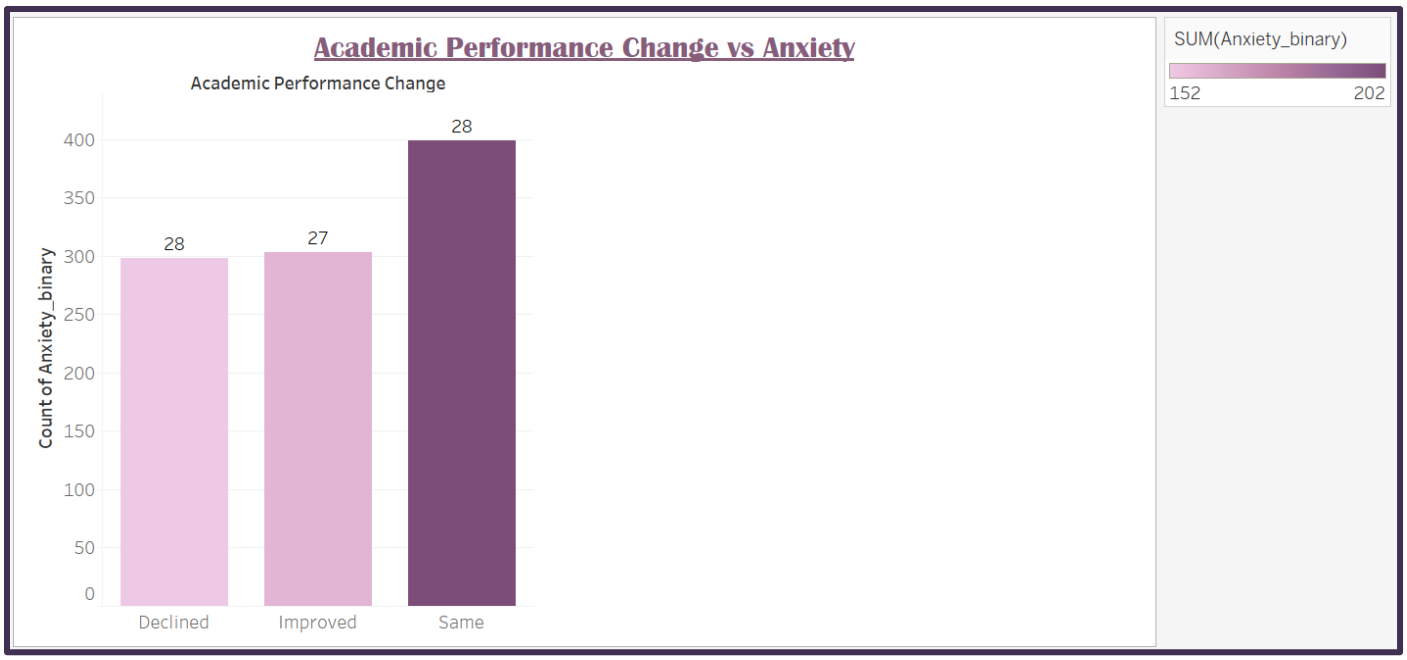
Sheet 4. Heatmap of Lifestyle Factors

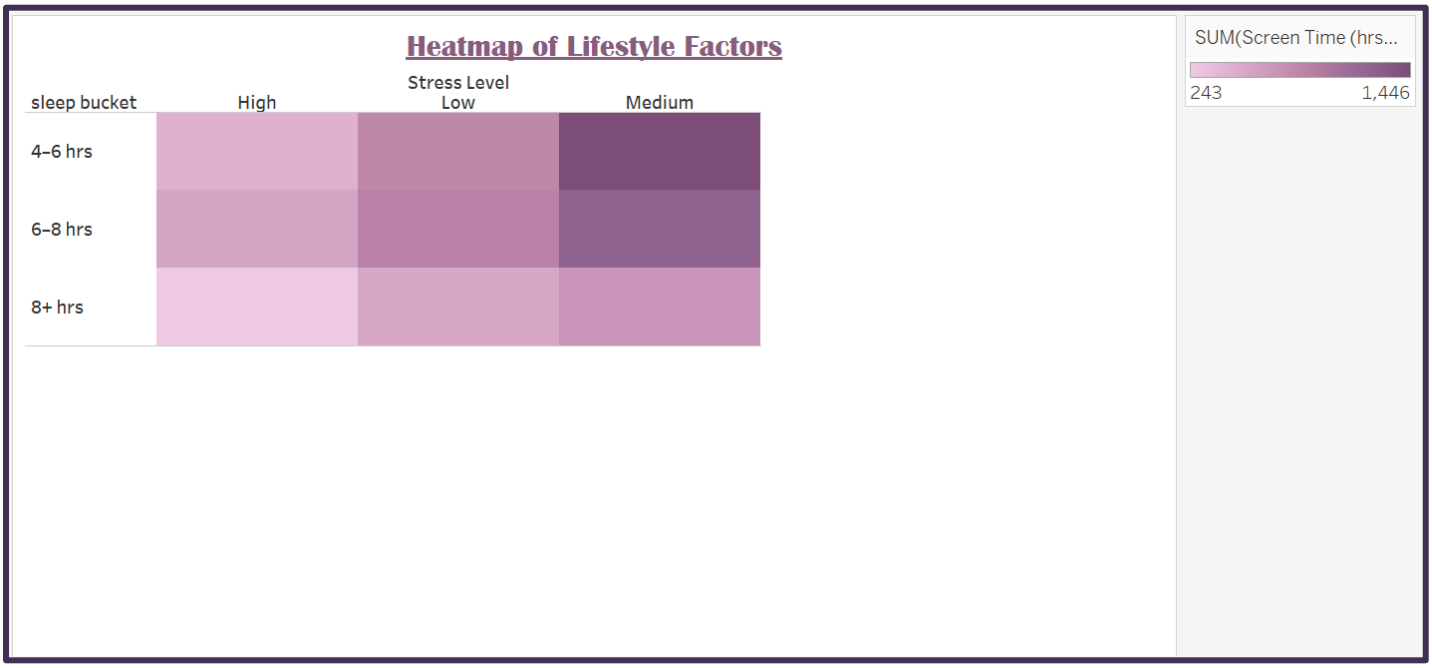
- Students with **low stress** and **6–8 hrs** of sleep had moderate screen time.
- **High stress + 4–6 hrs sleep** combination showed the **highest average screen time**.
- Shows how reduced sleep + high stress leads to more screen exposure.

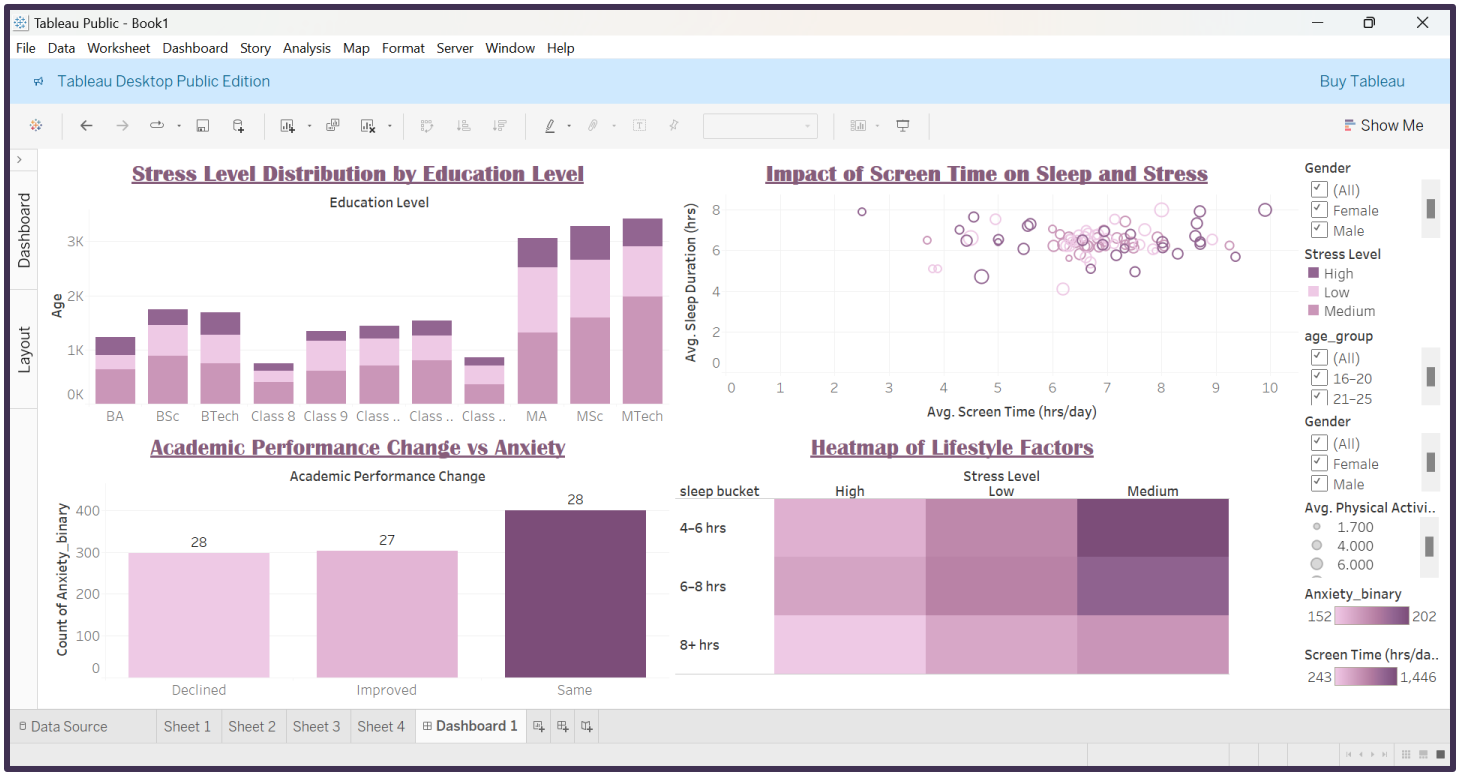
Output Snapshots






Academic Performance Change vs Anxiety
Academic Performance Change
Count of Anxiety_binary
400
350
300
250
200
150
100
50
0
28
27
28
Declined
Improved
Same
SUM(Anxiety_binary)
152
202


Heatmap of Lifestyle Factors
Stress Level
sleep bucket
High
Low
Medium
4–6 hrs
6–8 hrs
8+ hrs
SUM(Screen Time (hrs...
243
1,446



DASHBOARD LINK - View Tableau Dashboard – Mental Health Analysis