Student Mental Health Analysis Report

# 1. Introduction

This project analyzes mental health issues among students using a dataset titled 'Student Mental health.csv'.   
The goal is to explore the relationship between mental health conditions (depression, anxiety, and panic attacks) and factors such as gender, year of study, and CGPA.  
We also propose strategies to address the issues based on the findings.

# 2. Data Cleaning and Preparation

The following steps were taken to clean and standardize the dataset:  
- Column names were converted to lowercase and formatted with underscores for consistency.  
- Leading and trailing whitespaces were stripped.  
- Gender values were standardized (e.g., 'male', 'female').  
- Missing values in the 'Age' column were filled with the mean age.  
- Mental health-related columns were converted to title case.  
- CGPA values were extracted and converted to numeric format.

# 3. Visual Analysis and Findings

## 3.1 Mental Health by Gender

Bar charts showed that:  
- Females reported higher levels of depression, anxiety, and panic attacks compared to males.  
- The difference is visually significant, indicating gender-based mental health trends.

## 3.2 Trends by Year of Study

Line plots of depression, anxiety, and panic attacks by year of study revealed:  
- An increasing trend in reported mental health issues from lower to higher academic years.  
- Students in higher years might be under more pressure, indicating a need for support systems as they progress.

## 3.3 CGPA and Depression

Boxplots showed that:  
- Students with depression tend to have slightly lower CGPAs than those without.  
- The relationship between academic performance and mental health is evident, although not extremely strong.

## 3.4 Overall Depression Distribution

A pie chart of depression responses indicated:  
- A considerable portion of students reported experiencing depression.  
- This supports the need for preventive mental health care and awareness programs.

## 3.5 Correlation Matrix

The correlation matrix revealed:  
- A slight negative correlation between CGPA and all three mental health issues (depression, anxiety, panic attacks).  
- This suggests that poor mental health could be linked to reduced academic performance.

# 4. Recommendations and Conclusion

Based on the insights gained, the following strategies are recommended to reduce mental health issues among students:  
  
1. \*\*Implement Campus Wellness Programs\*\*: Regular mental health screenings, counseling, and workshops.  
2. \*\*Peer Support Groups\*\*: Create peer-led initiatives to support students dealing with stress and mental pressure.  
3. \*\*Stress Management Training\*\*: Offer sessions on mindfulness, time management, and study-life balance.  
4. \*\*Gender-Sensitive Support\*\*: As females showed higher rates, provide targeted outreach and support programs.  
5. \*\*Academic Flexibility\*\*: Allow for academic accommodations for students with ongoing mental health issues.  
6. \*\*Continuous Monitoring\*\*: Establish systems to track student well-being throughout their academic journey.  
  
\*\*Conclusion\*\*:  
Mental health is a growing concern among students and can significantly impact academic performance. With targeted interventions and support systems, institutions can foster healthier, more supportive environments.