

Student

Mental

Health

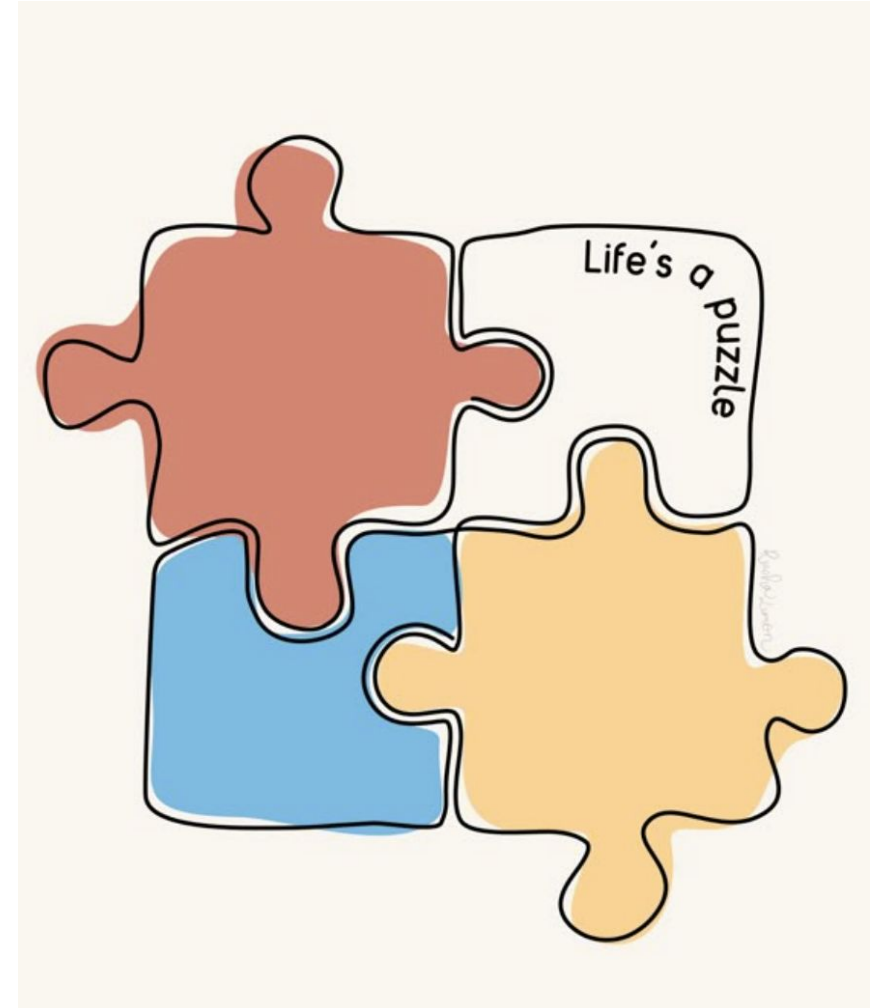
EDA



- **MENTAL HEALTH INTRODUCTION**
- **MENTAL HEALTH FACTORS**
- **IMPORT DATA AND LIBRARIES**
- **DATA WRANGLING**
- **DATA VISUALIZATIONS**
- **CONCLUSION**

What is Mental Health ?

- **Mental health includes our emotional, psychological, and social well-being.**
- **It affects how we think, feel, and act as we cope with life. It also helps determine how we handle stress, relate to others, and make choices.**
- **Mental health is important at every stage of life, from childhood and adolescence through adulthood and aging.**



Why should it be prioritized?

**Academic
Performance**



**Social
Development**



**Reduces Risk
Behaviors**



**Improves
Attendance &
Grades**



**Future
Success**



**Healthy School
Environment**



**Reduces
Stigma**



**Improved
Quality of Life**





Chronic Illness

Students with chronic health conditions tend to show high levels of depression and stress.



Social Support

The level of perceived support from others significantly influences mental health, with those lacking support exhibiting higher stress.



Counseling Service Use

Students who regularly use counseling services report notably different levels of stress, depression, and anxiety compared to those who never use them.



Diet Quality

A good diet is associated with better mental well-being, with poor diet quality linked to higher depression and stress.



Physical Activity

Activity levels correlate with better mental health; students with higher physical activity tend to report lower mental health issues.

Factors



Import

Libraries & Data

Dataset Link: <https://www.kaggle.com/datasets/sonia22222/students-mental-health-assessments>

Libraries

```
import pandas as pd
import numpy as np
import seaborn as sns
import matplotlib.pyplot as plt
```

Load Data

```
file_path =
'students_mental_health_survey.csv'

df =
pd.read_csv('students_mental_health_survey.csv')
```

Explore the Data

```
df.head()
df.shape
df.info()
df.describe()
df.columns.tolist()
df.dtypes
```

Missing Values

```
df.isnull().sum()
```

Unique Values

```
df.nunique().sort_values(ascending=True)
```

Duplicate Values

```
df.duplicated()
```

```
# Clean the Data
```

```
for col in df.select_dtypes(include='object'):  
    df[col] = df[col].astype(str).str.strip().str.title()
```

```
# Drop rows with missing CGPA or Substance_Use (small count)  
df = df.dropna(subset=['CGPA', 'Substance_Use'])
```

```
# Handle outliers (e.g., CGPA capped at 4.0)  
df = df[df['CGPA'] <= 4.0]
```

```
df.drop_duplicates()
```



Data

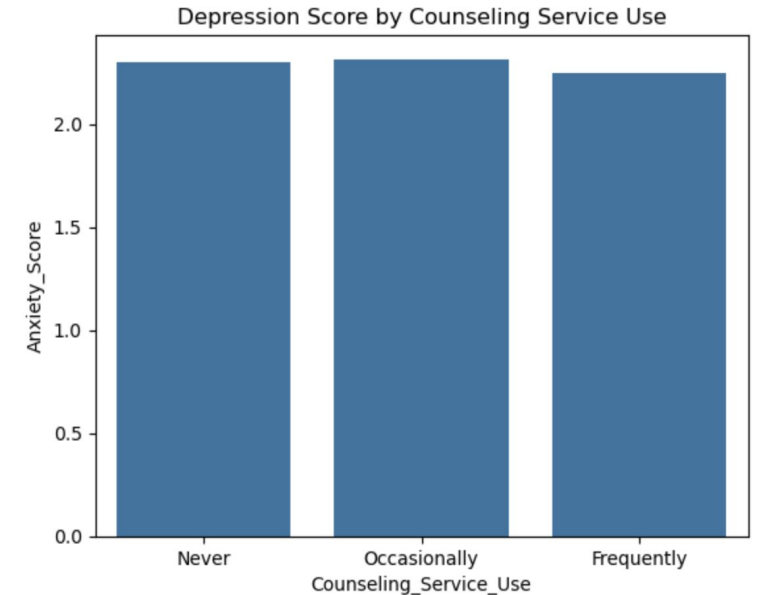
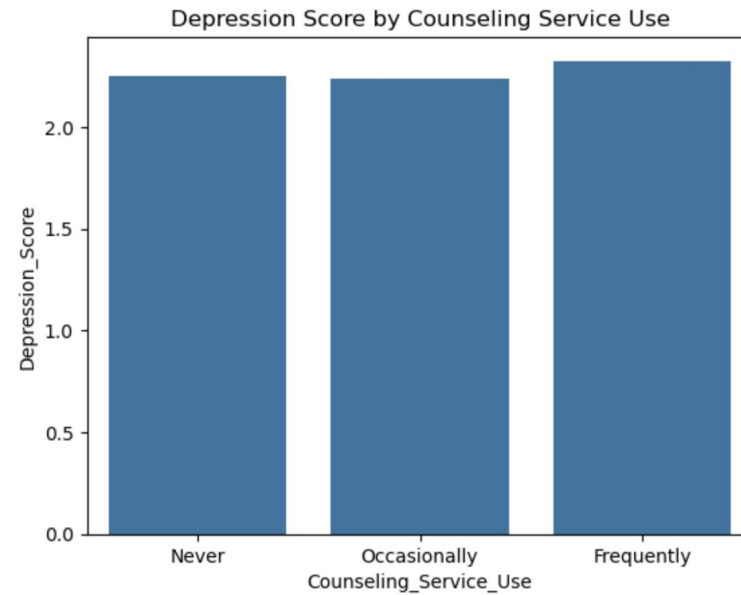
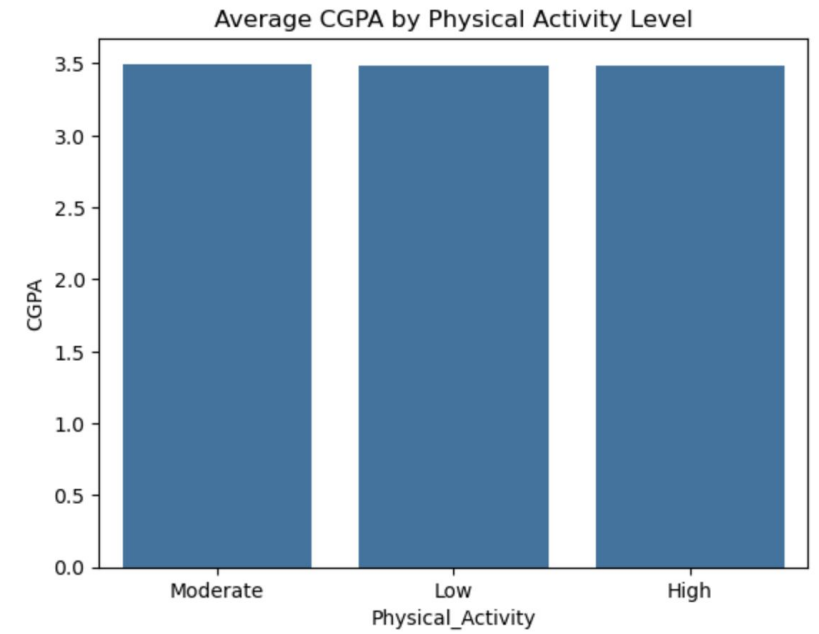
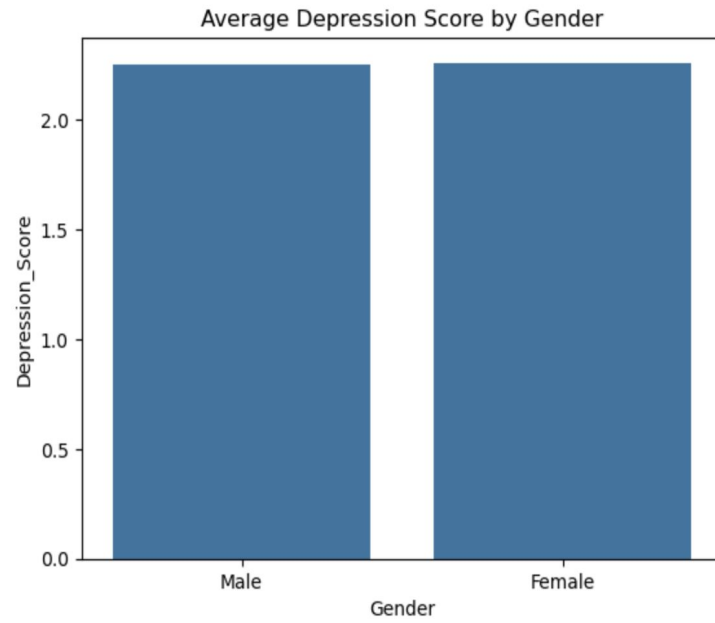
Wrangling

Data Visualizations



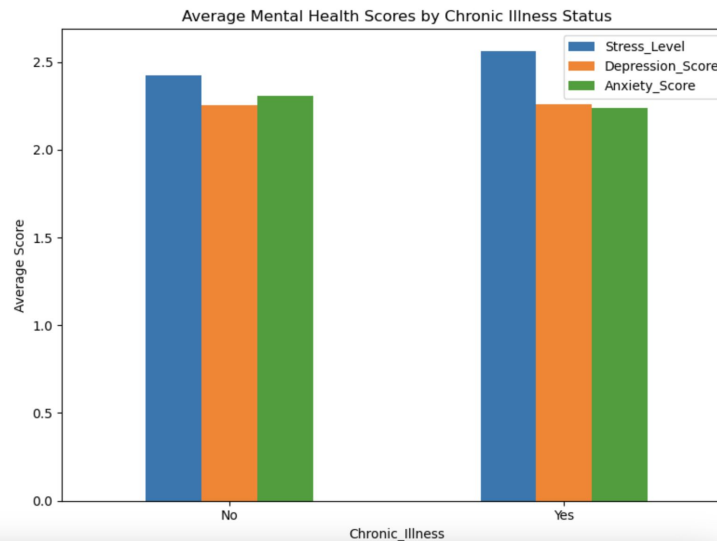
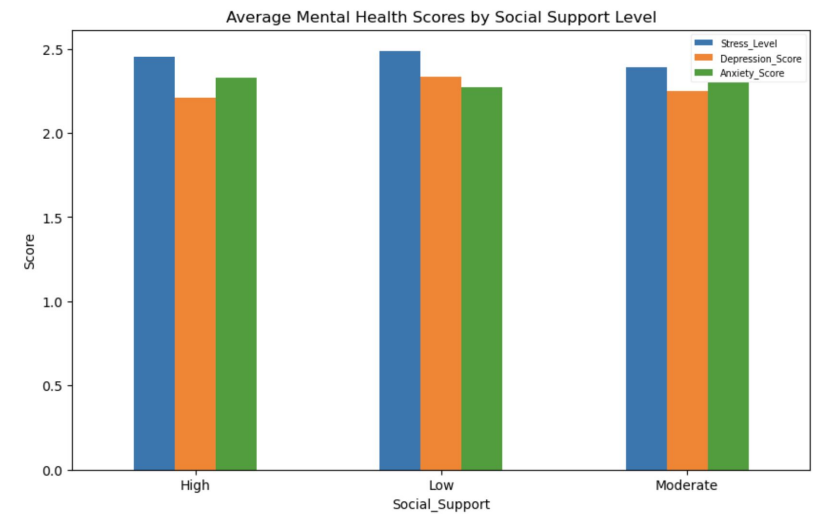
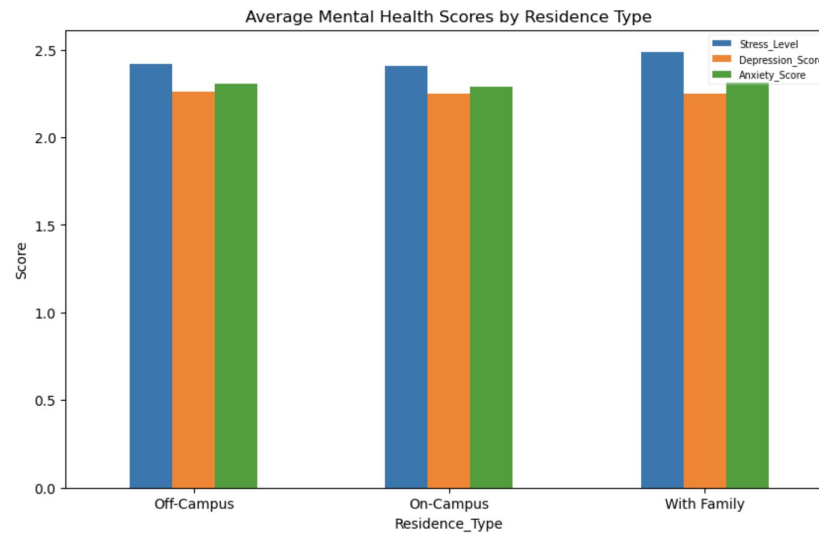
- Data visualizations play a crucial role in transforming complex information into clear, accessible insights.
- Allows us to detect patterns, spot outliers, and communicate findings in a way that's more impactful than raw numbers alone,
- Visualizations help bridge the gap between individual experiences and broader trends.

Bar Graphs

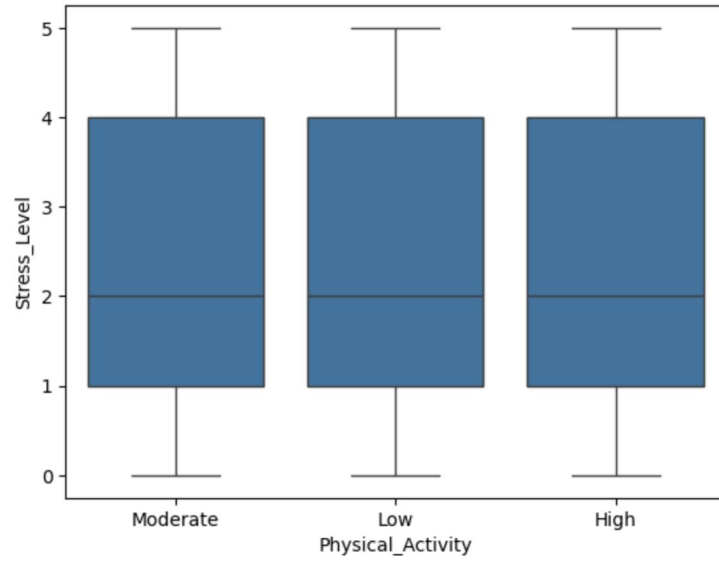


Bar

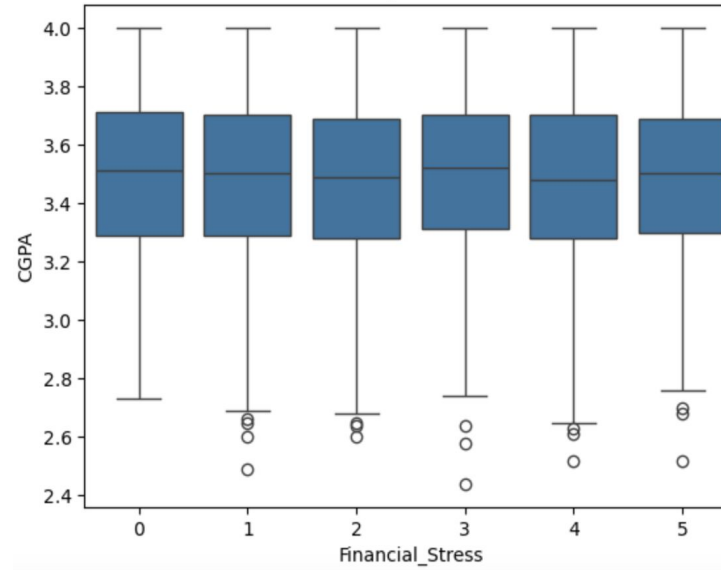
Graphs (groupby)



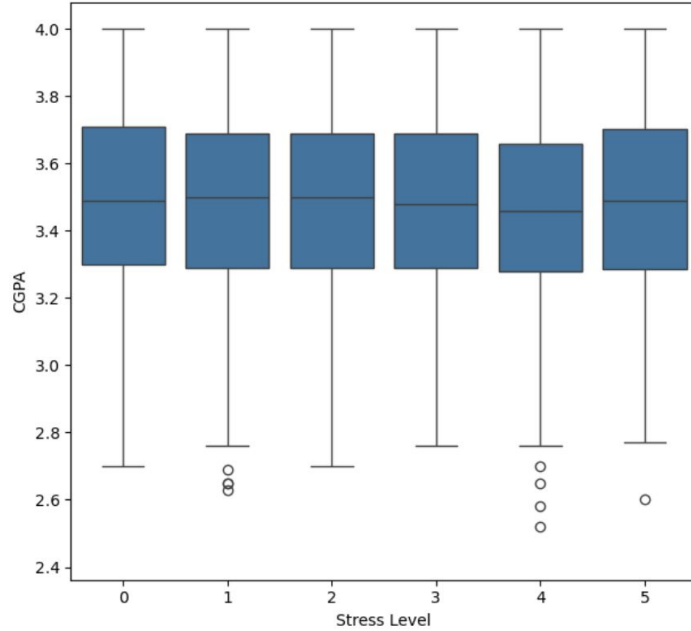
Stress Level Distribution by Physical Activity



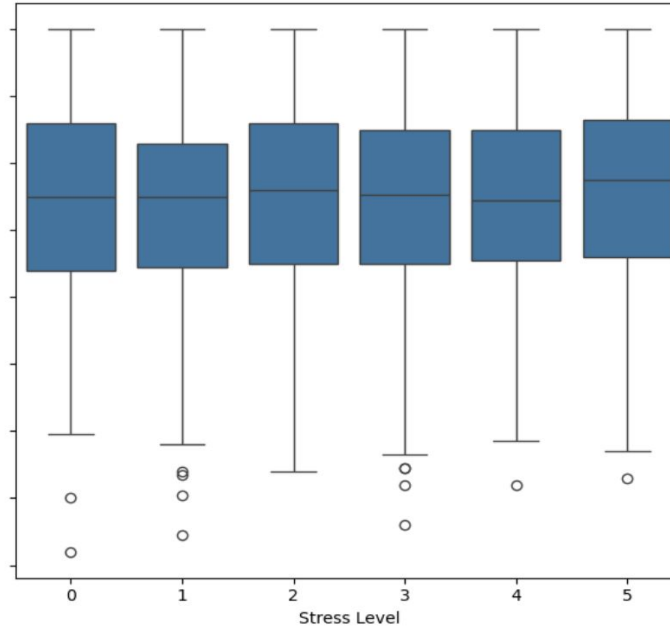
CGPA Distribution by Financial Stress Level



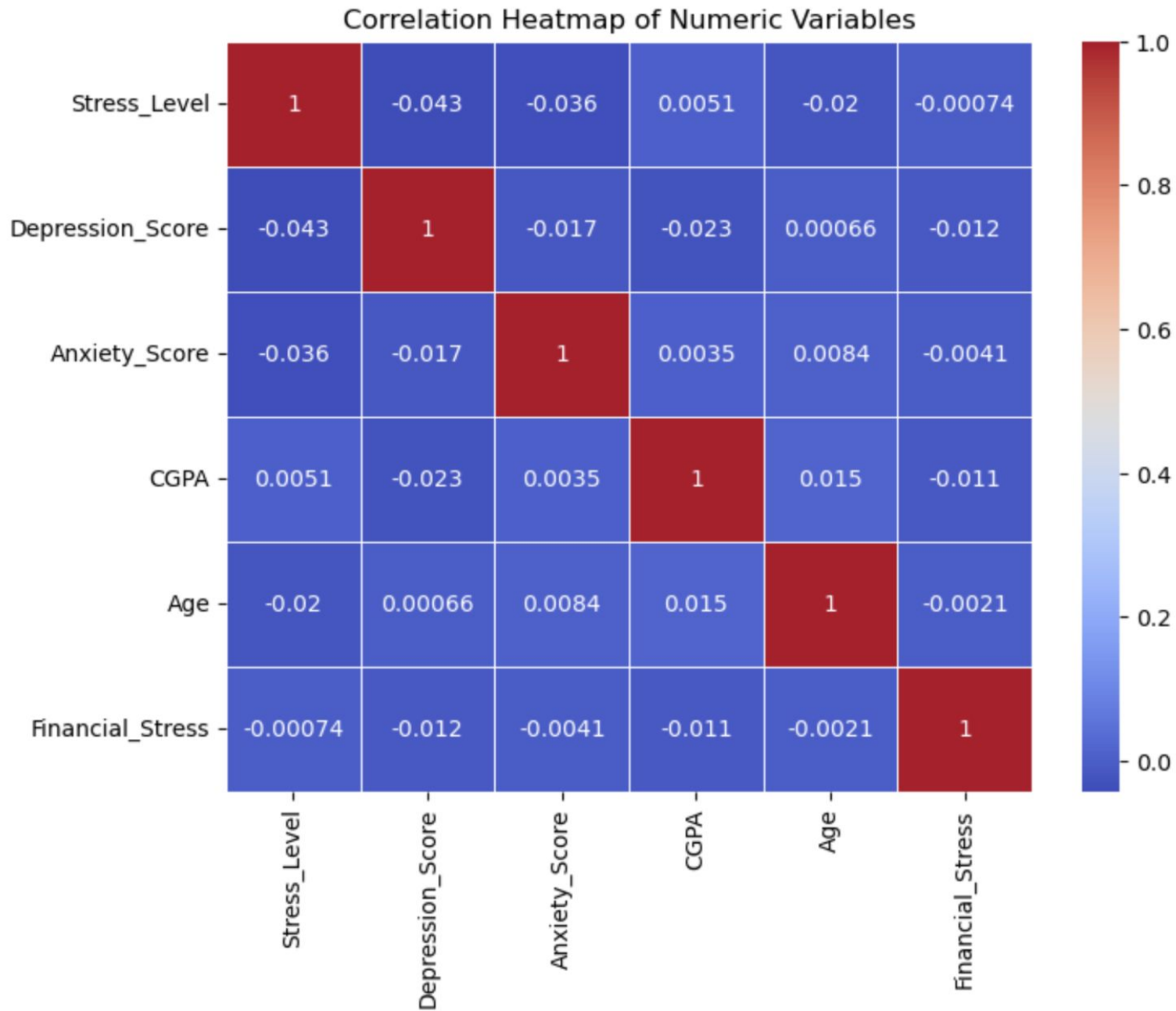
Male Students: CGPA by Stress Level



Female Students: CGPA by Stress Level



Box Plots



Correlation

Heatmap



Conclusion:

Student Mental

Health

EDA

- **Students with chronic illness, low social support, or who don't use counseling services report high levels of stress, anxiety, and depression.**
- **Physical activity and healthy diet are linked to better mental health outcomes.**
- **Financial stress and academic pressure negatively impact both GPA and emotional well-being.**
- **Differences in mental health are also observed across gender and residence type.**
- **The correlation heatmap revealed subtle relationship between CGPA, financial stress, and mental health scores.**
- **Findings highlight the need for holistic student support systems that address both mental and academic challenges..**