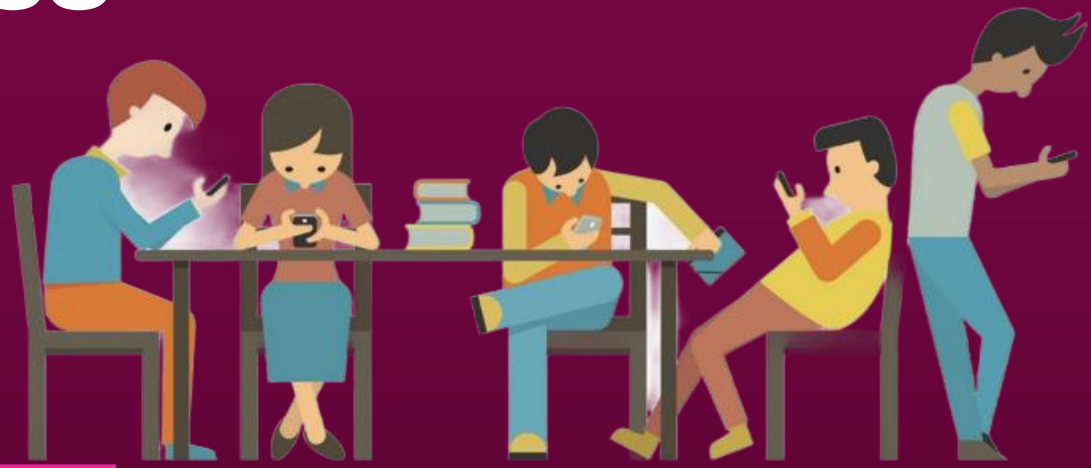
SOCIAL BYTES & WELLNESS



CS2704 DATA ANALYTICS WITH PYTHON
PROJECT PROPOSAL

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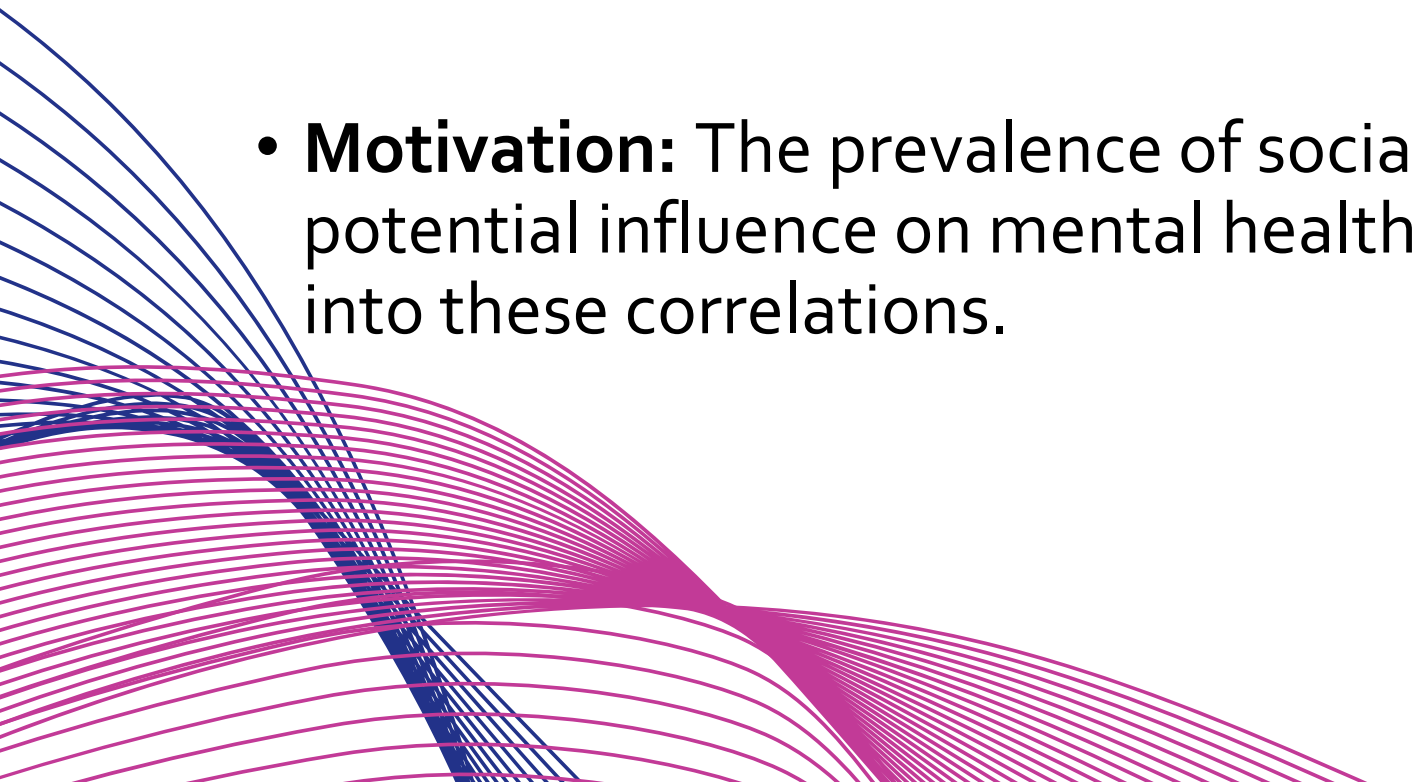
Research Question

- Does the amount of time individuals spend on social media have a discernible impact on their mental health?
- The pervasive influence of social media in modern society prompts an exploration of its potential implications for mental well-being.
- We aim to analyze and quantify the association between social media engagement patterns and various mental health indicators.

Hypothesis

"Our Hypothesis states that increased social media usage is associated with specific mental health outcomes, influencing factors such as stress levels, anxiety, and overall well-being"

- **Motivation:** The prevalence of social media in daily life suggests a potential influence on mental health, prompting our investigation into these correlations.



- **Expected Patterns**: We expect to observe patterns indicating that certain mental health metrics will exhibit noticeable changes as social media engagement increases.

- **Scope of Analysis**: Our analysis will consider various mental health indicators, allowing for a nuanced exploration of the potential impact of social media habits.

Dataset

- Dataset source from Kaggle: Social Media and Mental Health Dataset

```
[4] data = pd.read_csv('smmh.csv')
```

```
data.head()
```

	Timestamp	1. What is your age?	2. Gender	3. Relationship Status	4. Occupation Status	5. What type of organizations are you affiliated with?	6. Do you use social media?	7. What social media platforms do you commonly use?	8. What is the average time you spend on social media every day?	9. How often do you find yourself using Social media without a specific purpose?	...	11. Do you feel restless if you haven't used Social media in a while?	12. On a scale of 1 to 5, how easily distracted are you?	13. On a scale of 1 to 5, how much are you bothered by worries?	14. Do you find it difficult to concentrate on things?	15. On a scale of 1-5, how often do you compare yourself to other successful people through the use of social media?	16. Following the previous question, how do you feel about these comparisons, generally speaking?	17. How often do you look to seek validation from features of social media?	18. How often do you feel depressed or down?	19. On a scale of 1 to 5, how frequently does your interest in daily activities fluctuate?	20. On a scale of 1 to 5, how often do you face issues regarding sleep?
0	4/18/2022 19:18:47	21.0	Male	In a relationship	University Student	University	Yes	Facebook, Twitter, Instagram, YouTube, Discord...	Between 2 and 3 hours	5	...	2	5	2	5	2	3	2	5	4	5
1	4/18/2022 19:19:28	21.0	Female	Single	University Student	University	Yes	Facebook, Twitter, Instagram, YouTube, Discord...	More than 5 hours	4	...	2	4	5	4	5	1	1	5	4	5
2	4/18/2022 19:25:59	21.0	Female	Single	University Student	University	Yes	Facebook, Instagram, YouTube, Pinterest	Between 3 and 4 hours	3	...	1	2	5	4	3	3	1	4	2	5
3	4/18/2022 19:29:43	21.0	Female	Single	University Student	University	Yes	Facebook, Instagram	More than 5 hours	4	...	1	3	5	3	5	1	2	4	3	2
4	4/18/2022 19:33:31	21.0	Female	Single	University Student	University	Yes	Facebook, Instagram, YouTube	Between 2 and 3 hours	3	...	4	4	5	5	3	3	3	4	4	1

5 rows × 21 columns

Plan for Hypothesis Testing

Data Cleaning: Thoroughly clean and preprocess the dataset to ensure accurate and reliable analysis.

Exploratory Data Analysis (EDA): Conduct EDA to gain initial insights into the distribution of variables and identify patterns or outliers.

Correlation Analysis: Utilize statistical methods to explore relationships between social media usage metrics and mental health indicators.

Regression Analysis: Apply regression techniques to model the potential predictive power of social media habits on mental health outcomes.

Visualization: Use visualizations such as scatter plots, correlation matrices, and regression plots to enhance interpretation and presentation.

Statistical Significance: Apply appropriate statistical tests to determine the significance of observed correlations and regression coefficients.

Expected Output

- **Correlation Patterns**: Anticipate statistically significant correlations between social media usage metrics and various mental health indicators.
- **Well-being Impact**: Expect changes in overall well-being, stress levels, and anxiety corresponding to prolonged social media engagement.
- **Differential Effects**: Anticipate differentiated impacts on mental health, recognizing that distinct indicators may respond uniquely to different aspects of social media usage.
- **Insight for Interventions**: The expected output holds significance for formulating insights into the nuanced relationship between social media habits and mental health, providing valuable information for future interventions.