SOCIAL MEDIA AND MENTAL HEALTH ANALYSIS BY PYTHON

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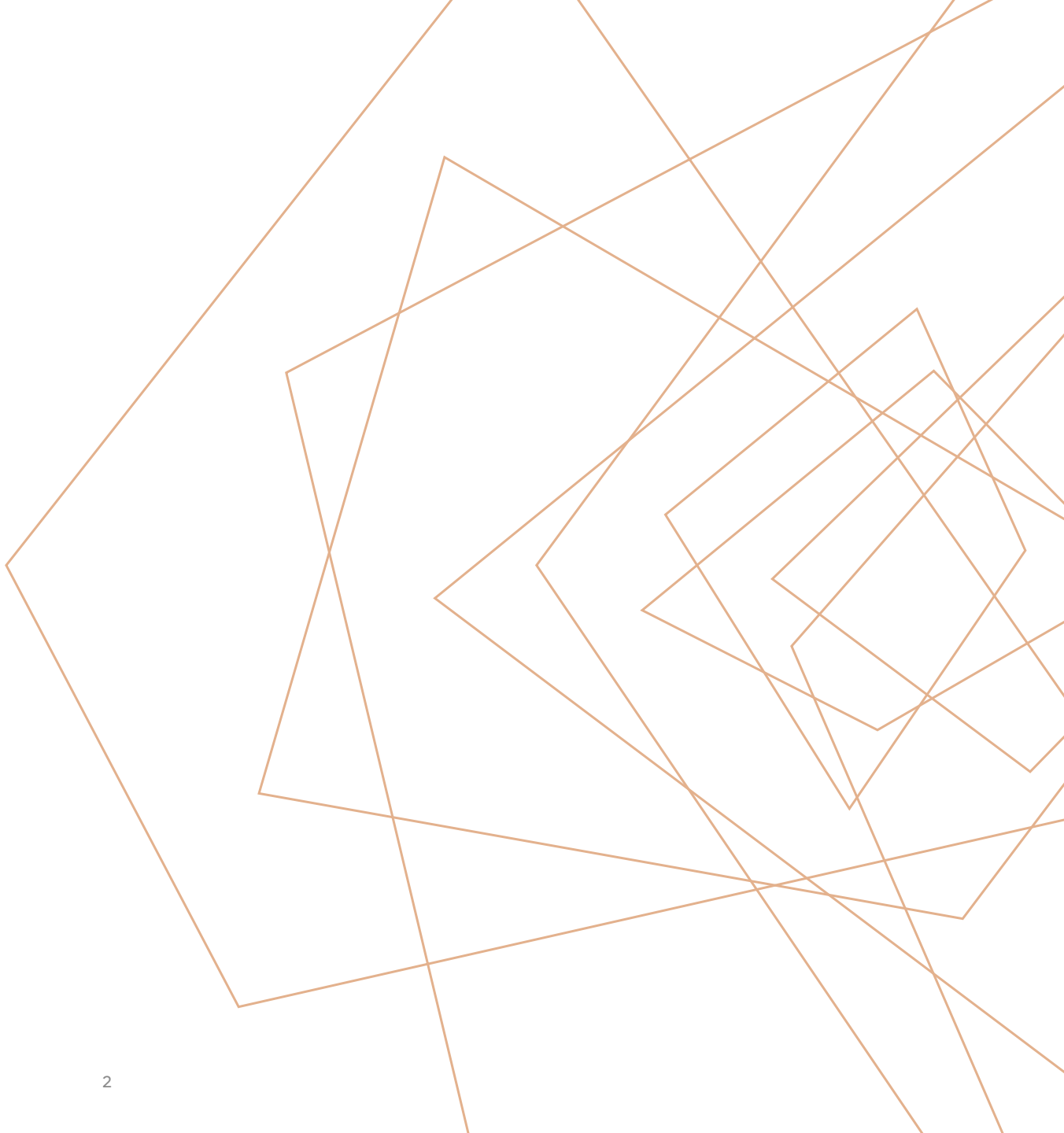
ABOUT PROJECT

This project explores the impact of social media on mental health by analyzing user behavior and platform usage patterns. With the growing prevalence of social media in daily life, understanding its effects on mental well-being is essential.

Data was collected and analyzed to provide actionable insights into the relationship between social media usage and mental health, aiming to promote healthier digital habits and awareness among users. The findings contribute to ongoing discussions about digital well-being in today's connected world.



PROJECT CONTENT

Data Preparation

The process of gathering and organizing raw data to ensure it is ready for analysis.

Data Cleaning

Refining the dataset by removing inconsistencies, errors, and irrelevant information to enhance accuracy.

Extract Useful insights

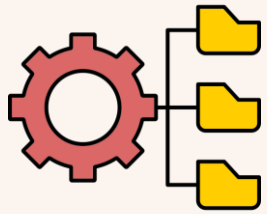
Analyzing the data to uncover meaningful patterns, trends, and relationships that inform decision-making.

Conclusion

Contact

DATA PREPARATION

PREPARATION STEPS



```python
#Importing Libraries
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
```

Importing the required libraries like Pandas For data manipulation , Numpy for some data calculations and Matplotlib for visualization of data

```python
#Getting Data
data=pd.read_csv(r'F:\Projects\Python_Hotle_Dashboard\smmh.csv')
```

Reading the Data files

Columns (21)

- Timestamp
- What is your age?
- Gender
- Relationship Status
- Occupation Status
- What type of organizations are you affiliated with?
- Do you use social media?
- What social media platforms do you commonly use?
- What is the average time you spend on social media every day?
- How often do you find yourself using Social media without a specific purpose?
- How often do you get distracted by Social media when you are busy doing something?
- Do you feel restless if you haven't used Social media in a while?
- On a scale of 1 to 5, how easily distracted are you?
- On a scale of 1 to 5, how much are you bothered by worries?
- Do you find it difficult to concentrate on things?
- On a scale of 1-5, how often do you compare yourself to other successful people through the use of social media?
- Following the previous question, how do you feel about these comparisons, generally speaking?
- How often do you look to seek validation from features of social media?
- How often do you feel depressed or down?
- On a scale of 1 to 5, how frequently does your interest in daily activities fluctuate?
- On a scale of 1 to 5, how often do you face issues regarding sleep?

DATA CLEANING

DATA CLEANING

```
#Getting data types
print(data.dtypes)
```

Validate columns data type

```
#Check for missing values
print(data.isnull())
```

Checking for missing values

```
#Check for duplicates
print(data.duplicated())
```

Checking for duplicates

```
data['Timestamp']=pd.to_datetime(data['Timestamp'])
```

Handling Date Column

Data cleaning is the process of fixing or removing incorrect, corrupted, incorrectly formatted, duplicate, or incomplete data within a dataset

EXTRACT USEFUL INSIGHTS

INSIGHTS

Average Hours finding yourself using Social media **without** a specific purpose.

How frequently do you allow social media to **distract** you when you should be concentrating on important tasks?

How often do you find yourself struggling to **concentrate** on tasks?

INSIGHTS

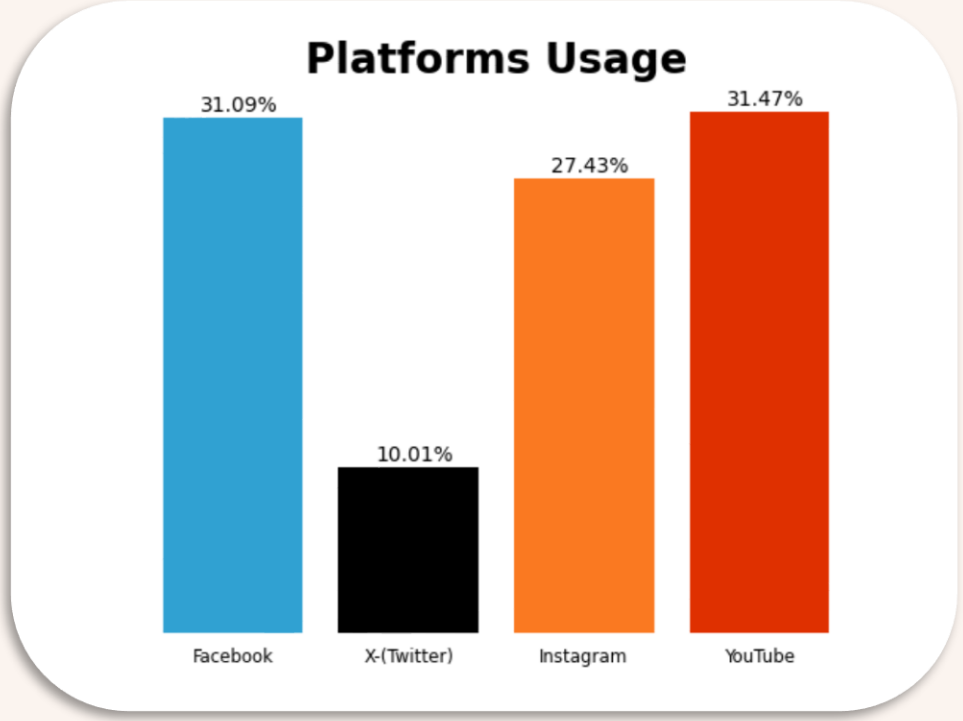
How often do you reflect on your journey by **comparing** it to the success stories you see on social media?

How frequently do you feel **sad** or **depressed** because of your experience with social media?

How frequently do social media **distractions** impact your ability to get a good night's **sleep**?

INSIGHTS

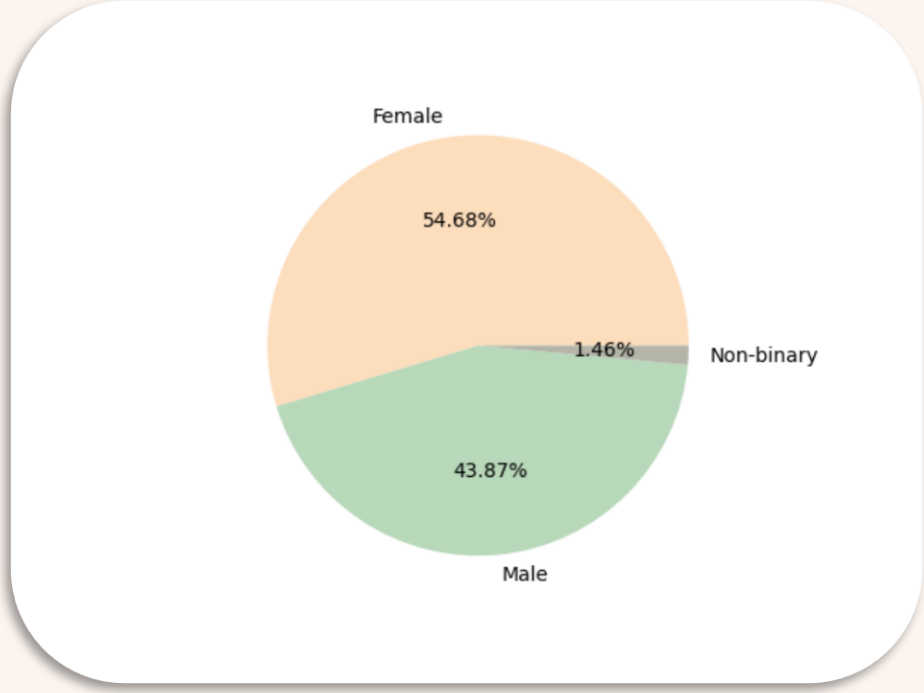
```
fig,ax=plt.subplots()
data['Facebook']=data['7. What social media platforms do you commonly use?'].str.contains('Facebook')
data['X-Twitter']=data['7. What social media platforms do you commonly use?'].str.contains('Twitter')
data['Instagram']=data['7. What social media platforms do you commonly use?'].str.contains('Instagram')
data['YouTube']=data['7. What social media platforms do you commonly use?'].str.contains('YouTube')
value_count=[sum(data['Facebook']),sum(data['X-Twitter']),sum(data['Instagram']),sum(data['YouTube'])]
colors=['#30A1D2','black','#FA7921','#DF3000']
ax.bar(['Facebook','X-(Twitter)','Instagram','YouTube'],value_count,color=colors)
ax.set_title('Platforms Usage',fontsize=20,fontweight='bold',color='#3D5014')
ax.tick_params(axis='x',labelsize=8.5)
ax.spines[['top','right','left','bottom']].set_visible(False)
ax.yaxis.set_visible(False)
ax.xaxis.set_ticks_position('none')
for i in ax.patches:
    plt.text(i.get_x()+.21,i.get_height()+5,str(round(((i.get_height())/sum(value_count))*100,2))+'%')
plt.show()
```



The data showcases the distribution across four popular social media platforms: **Facebook** and **YouTube** have the highest usage, demonstrating their dominance among users. **Instagram** follows closely, maintaining a strong presence. **X (formerly Twitter)** has the lowest usage, highlighting its relatively smaller user base than the other platforms. The chart provides a clear overview of user preferences and engagement across these platforms.

INSIGHTS

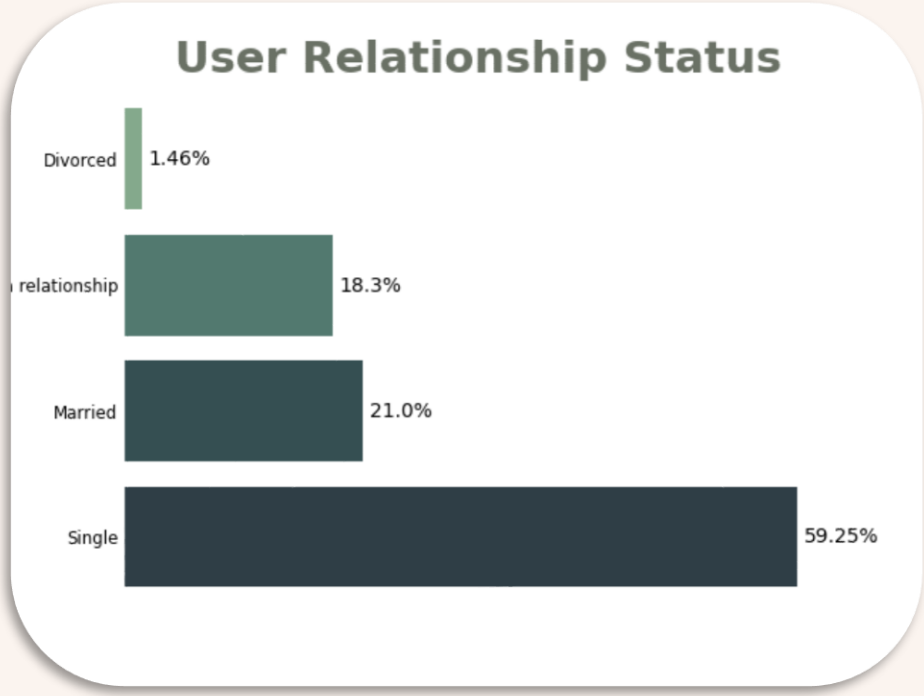
```
fig,ax=plt.subplots()
data['2. Gender']=[ i if i in ['Male','Female'] else 'Non-binary' for i in data['2. Gender'] ]
colors=['#FCDDBC','#B8D8BA','#B4B5A8']
gender_counts = data['2. Gender'].value_counts()
ax.pie(gender_counts,labels=gender_counts.index,autopct='%1.2f%%',colors=colors)
plt.show()
```



The data indicate that **women** have the **highest** level of social media usage, although there has been a significant increase in usage among **men**.

INSIGHTS

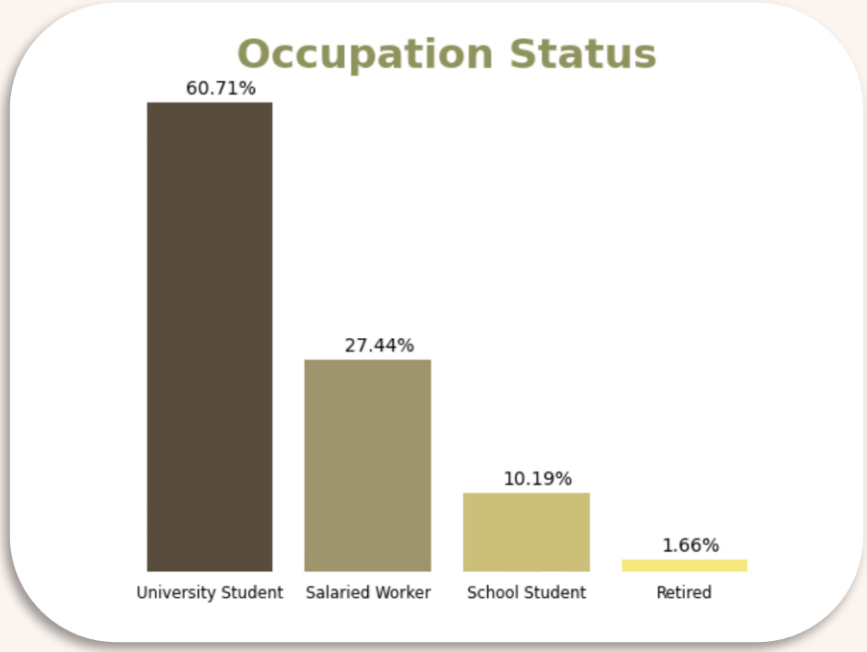
```
#User Status
fig,ax=plt.subplots()
group_count=data['3. Relationship Status'].value_counts()
colors=['#2F3E46','#354F52','#52796F','#84A98C']
ax.barh(group_count.index,group_count,color=colors)
ax.set_title('User Relationship Status',fontsize=22,color='#6a7165',fontweight='bold')
ax.spines[['top','right','left','bottom']].set_visible(False)
ax.xaxis.set_visible(False)
ax.yaxis.set_ticks_position('none')
ax.tick_params(axis='y',labelsize=8.5,pad=0)
for i in ax.patches:
    plt.text((i.get_width())+3,(i.get_y())+.35,str(round(((i.get_width())/sum(group_count))*100,2))+'%')
plt.show()
```



The frequency of social media usage significantly differs based on an individual's social status. Data shows that **singles** engage with social media platforms more than any other group, showcasing a vibrant online presence. In contrast, **divorced** individuals tend to participate the least, reflecting a potential shift in their social connectivity and engagement.

INSIGHTS

```python
#Occupation Status
figm,ax=plt.subplots()
group_count=data['4. Occupation Status'].value_counts()
colors=['#584d3d','#9F956C','#CBBF7A','#f4e87c']
ax.bar(group_count.index,group_count,color=colors)
ax.spines[['top','right','left','bottom']].set_visible(False)
ax.yaxis.set_visible(False)
ax.xaxis.set_ticks_position('none')
ax.set_title('Occupation Status',fontweight='bold',fontsize=22,color='#8E935D')
ax.tick_params(axis='x',labelsize=8.5)
for i in ax.patches:
    plt.text(i.get_x()+.25,i.get_height()+5,str(round((i.get_height()/sum(group_count))*100,2))+'%')
plt.show()
```



The percentage of social media usage differs significantly across various professions. **University students**, who often rely on these platforms for communication, networking, and academic collaboration, exhibit the highest levels of engagement. In contrast, **retirees** tend to use social media the least, often preferring to engage in more traditional forms of communication and leisure activities. This disparity highlights the varying needs and habits of different age groups and professional backgrounds in their interaction with social media.

CONCLUSION

The findings of this project emphasize the significant impact of social media on mental health, both positively and negatively. Platforms such as Facebook, Instagram, YouTube, and X (formerly Twitter) play a crucial role in influencing users' emotional and psychological well-being. While these platforms offer opportunities for connection, self-expression, and information sharing, excessive or unbalanced use can lead to stress, anxiety, and feelings of isolation.

This analysis highlights the importance of being aware of and using social media mindfully. Users should be encouraged to establish healthy boundaries, prioritize offline interactions, and seek professional help when necessary to reduce negative effects. Additionally, social media companies have a responsibility to create platforms that promote well-being and discourage harmful behaviors.

In an increasingly digital world, it is essential to cultivate a balanced relationship with social media. Doing so is vital for maintaining mental health and ensuring that these platforms serve as tools for positive social engagement.

THANK YOU

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