**Data Analyst Specialist**

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**Social Dilemma**

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# **Abstract**

# This project analyzes social media usage patterns across various demographics, platforms, and times of day, with a focus on addiction levels, content preferences, and productivity impacts. Using a clean dataset of social media interactions and user behaviors, the analysis was conducted through dashboards built in Tableau. The findings reveal key insights into platform preferences by age group, addiction patterns by time of day, and gender-based content consumption. The project highlights significant differences in user behavior and offers recommendations for optimizing content strategies based on these insights.

# **Dataset Overview**

This comprehensive dataset, sourced from Kaggle, delves into the “dark side” of social media, examining the multifaceted impacts of excessive use. It highlights how prolonged engagement can lead to significant time wastage, diminished productivity, and even addiction. The dataset is robust, featuring 31 columns and 1,000 rows, providing a wealth of detailed insights into various aspects such as user demographics, social media habits, and behavioral patterns. Key areas of focus include **user engagement**, **screen time**, **mental health**, **productivity loss**, **addiction symptoms**, **behavioral analysis**, and **demographic trends**. This rich dataset is invaluable for researchers and analysts aiming to understand the negative consequences of social media usage and develop strategies to mitigate these effects.

**Keywords:** Engagement, Productivity, Addiction, …

### Introduction**:**

In today’s digital age, social media platforms play a crucial role in shaping content consumption and user habits. Understanding user behavior across different platforms, devices, and demographic groups is essential for marketers, content creators, and platform designers. This project aims to explore social media usage patterns, addiction levels, and platform preferences using a comprehensive dataset. By leveraging data visualization tools, this analysis provides actionable insights into content engagement trends, helping stakeholders optimize strategies to maximize user engagement and productivity.

### Methodology:

The methodology of this project includes several steps:

1. **Data Collection and Cleaning**: The dataset used for this analysis was pre-cleaned and we checked using python, R and Excel, we divided it into fact tables and dimensions using SQL, enabling a seamless analysis.
2. **Data Analysis & Visualization**: Excel as well as Tableau were chosen for its powerful visualization capabilities, allowing us to explore trends and patterns in user behavior.
3. **Key Performance Indicators (KPIs)**: KPIs were defined based on platform preferences, time spent, addiction levels, and video consumption across various user demographics. These KPIs were central to understanding engagement trends and productivity losses.
4. **Dashboard Development**: Multiple dashboards were designed to visually tell the story of user interactions across different platforms and devices, with filters added for deeper analysis.

# Structure and Description of Columns:

## **User Demographics**:

* + **UserID**: Unique identifier for each participant.
  + **Age**: The age of the user, ranging from young adults to older individuals.
  + **Gender**: The user's gender (e.g., Male, Female).
  + **Location**: Country of residence (e.g., Pakistan, Mexico, United States).
  + **Income**: Annual income of the user, reflecting their financial status.
  + **Debt**: Indicates if the user has any debt (True/False).
  + **Owns Property**: Shows if the user owns property (True/False).
  + **Profession**: The user's profession, providing insights into their occupation (e.g., Engineer, Artist, Manager).
  + **Demographics**: Whether the user resides in a rural or urban area.

## **Social Media Usage:**

* + **Platform**: Social media platforms used (e.g., Instagram, Facebook, YouTube, TikTok).
  + **Watch Time**: The usual time of day the user engages with social media (e.g., 9:00 PM).
  + **DeviceType**: Type of device used for accessing social media (e.g., Smartphone, Computer, Tablet).
  + **OS**: Operating system of the device (e.g., Android, iOS).
  + **ConnectionType**: Type of internet connection (e.g., Wi-Fi, Mobile Data).

## **Behavioral Insights:**

* + **ProductivityLoss**: A scale (likely 1-10) indicating the extent of productivity loss due to social media usage.
  + **Satisfaction**: The level of satisfaction felt by the user after using social media, on a similar scale.
  + **Watch Reason**: The primary reason for engaging with social media (e.g., Procrastination, Habit, Entertainment, Boredom).
  + **Self Control**: A self-reported measure of how much self-control the user has regarding their social media usage.
  + **Addiction Level**: An indicator of how addicted the user feels to social media, with a higher number suggesting a greater sense of addiction.

## **Current Context**:

* + **CurrentActivity**: The user's typical activity while using social media (e.g., Commuting, At school, At home).

# Key Data Insights:

* **User Demographics and Social Media Usage**: Users come from diverse backgrounds, with varying ages, professions, and financial statuses. These demographic factors can influence their social media habits, such as the platform they use, the time they spend on it, and their reasons for usage.
* **Productivity and Self-Control**: The dataset captures the negative impact of social media on productivity. There are varying levels of productivity loss across users, influenced by factors like self-control and addiction level.
* **Reasons for Usage**: The data reveals common reasons for social media use, including procrastination, habit, and entertainment. This suggests that many users turn to social media as a distraction or a way to fill their free time.
* **Time and Device Patterns**: Usage patterns, such as the time of day and the device used, offer insights into when and how users prefer to access social media. For instance, many users seem to engage with social media during the evening, often through smartphones.

# Visible Patterns:

1. **Age and Addiction**: Younger users might show higher addiction levels and lower self-control, indicating a possible correlation between age and susceptibility to social media's negative effects.
2. **Income and Platform Choice**: Users with higher income may prefer certain platforms, reflecting trends in platform demographics and the influence of financial status on social media preferences.
3. **Productivity Loss**: A clear pattern emerges where high social media usage leads to a noticeable drop in productivity. This is particularly evident among users who report using social media for procrastination or boredom.
4. **Time of Day**: Evening hours seem to be the most common time for social media use, possibly when users are free from daily responsibilities.

# Tools

* Excel
* Python
* Tableau
* R
* MYSQL

# Methods:

1. **Data Segmentation**: The dataset was divided into key demographic groups (age, gender, profession) and by platform usage (YouTube, Instagram, TikTok).
2. **KPI Identification**: Key metrics such as average time spent, addiction levels, and platform preferences were tracked.
3. **Visualization in Tableau**: Multiple dashboards were created to analyze and display patterns, such as platform preference by age, content consumption by gender, and peak engagement times.
4. **Analysis & Insights**: Insights were drawn from trends observed in the dashboards. Each dashboard allowed the user to filter by demographics, platform, device, and other variables to derive meaningful conclusions.

# Contribution

**Project title: Social Dilemma.**

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| **Tasks** | **Student Name** |
| 1.Data analysis using R  2.Documentation | Mahmoud |
| 1.Data analysis using python  2.Documentation | Ahmed |
| 1.Data analysis using Excel  2.Documentation | Shahd |
| 1.Data Visualization using Tableau  2.Documentation | Salma |
| 1.Data Modeling using SQL  2.Documentation | Maya |