SOCIAL MEDIA ADDICTION ANALYZER
PROJECT REPORT

UNDERGRADUATE IN COMPUTER SCIENCE AND ENGINEERING

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SEMESTER: 3RD

SECTION: B-2

SUBJECT: DATA STRUCTURES IN C

UNDER THE SUPERVISION OF DR. GYANRANJAN SHIAL

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Department of Computer Science And Engineering

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DECLARATION

I hereby declare that the project titled *"*Social Media Addiction Analyzer*"* has been carried out by me under the guidance of Dr. Gyanranjan Shial. This project work is the result of my own effort and study, and it has not been submitted to any other institution or university for the award of any degree or diploma.

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INTRODUCTION:

In the digital era, social media platforms such as Instagram, WhatsApp, YouTube, and Twitter have become deeply embedded in our daily lives. While they serve as powerful tools for communication, education, and entertainment, excessive usage often leads to **digital addiction** - impacting productivity, focus, and mental health.

The **Social Media Addiction Analyzer** is a C-based console application designed to monitor, analyse, and report a user's social media usage patterns. It helps identify excessive engagement periods, provides statistical breakdowns per app and time slot, and suggests ways to improve digital habits.

This project showcases the integration of **structured programming, data management, and analytical computation** in C, simulating a real-world behavioral tracking system. It emphasizes modular programming, file persistence, and report generation — forming a strong foundation for future conversion into a full-stack analytics platform.

OBJECTIVE:

The primary objective of the Social Media Addiction Analyzer project is to design and develop a system capable of recording, analysing, and evaluating a user's daily engagement on various social media platforms. The project aims to help individuals become aware of their digital behaviour patterns and identify possible signs of excessive or unproductive usage.

The detailed objectives are as follows:

1. **User Data Management:**
   To create an efficient user registration system that assigns unique IDs and stores user information for persistent tracking. The data should be retrievable and updatable without redundancy, enabling multiple users to operate independently.

2. **Usage Monitoring and Recording:**
   To develop a structured method to log the duration of usage across different social media applications and categorize them into daily time slots such as *Morning*, *Afternoon*, and *Night*. This classification allows time-based behaviour assessment.

3. **Behavioural Analysis:**
   To perform automated analysis on the recorded data, calculating the total time spent on each application and in each time slot. The goal is to generate clear insights into which apps or times contribute most to prolonged usage, signalling potential addiction patterns.

4. **Personalized Suggestions:**
   To provide intelligent, data-driven suggestions encouraging healthy digital habits. These

recommendations help users minimize excessive screen time, balance social interactions, and improve productivity.

5. **Persistent Storage and Reporting:**
   To implement robust file handling techniques ensuring that user data, usage logs, and analytical reports are permanently stored in organized folders (data/ and reports/). This persistence allows for historical analysis and user progress tracking over time.

6. **Scalable and Modular Design:**
   To design the project using modular programming principles, enabling scalability and easy extension into a GUI-based or full-stack web application in the future.

7. **Awareness and Self-Regulation:**
   Ultimately, to promote **digital well-being** by helping users self-assess their social media habits through data visualization and periodic feedback, making them more conscious of how their digital behaviour affects their time management and mental health.

TOOLS AND DATA STRUCTURES USED:

1. **C Language**
2. **VS Code**
3. **struct User**
4. **struct Usage**
5. **File handling(I/O)**
6. **Linked List**

WORKING PRINCIPLE :

The working principle of the Social Media Addiction Analyzer revolves around user data collection, analysis, and feedback generation through a structured and modular approach. The program begins by allowing users to register with a unique name, after which their usage details are tracked and stored. Whenever a user logs the time spent on a particular social media application, the data is recorded along with the corresponding time slot, such as morning, afternoon, or night. This data is organized using linked lists for dynamic storage and efficient traversal. The program then processes this information to calculate total usage time, app-specific durations, and distribution across time slots. Once the analysis is complete, the system generates a summarized report containing usage statistics and meaningful suggestions to promote healthy screen habits. All user information, including daily logs and analytical reports, is stored persistently in separate files under structured directories. The core logic ensures that each new usage entry updates the user's record without overwriting previous data, maintaining continuity. The modular design allows independent handling of user management, usage tracking, file

operations, and suggestion generation, making the system robust and easily extendable to a graphical or full-stack environment in the future.

FUTURE SCOPE:

The future scope of the Social Media Addiction Analyzer lies in transforming it from a command-line-based system into a fully functional full-stack application. By integrating frontend and backend technologies, the project can evolve into a user-friendly and interactive platform accessible through both web and mobile interfaces. On the backend, databases like MySQL or MongoDB can be employed to store and manage user data more efficiently, allowing multi-user access and real-time analytics. The frontend can be developed using modern frameworks such as React or Angular to provide visually appealing dashboards displaying time usage patterns, charts, and personalized recommendations.

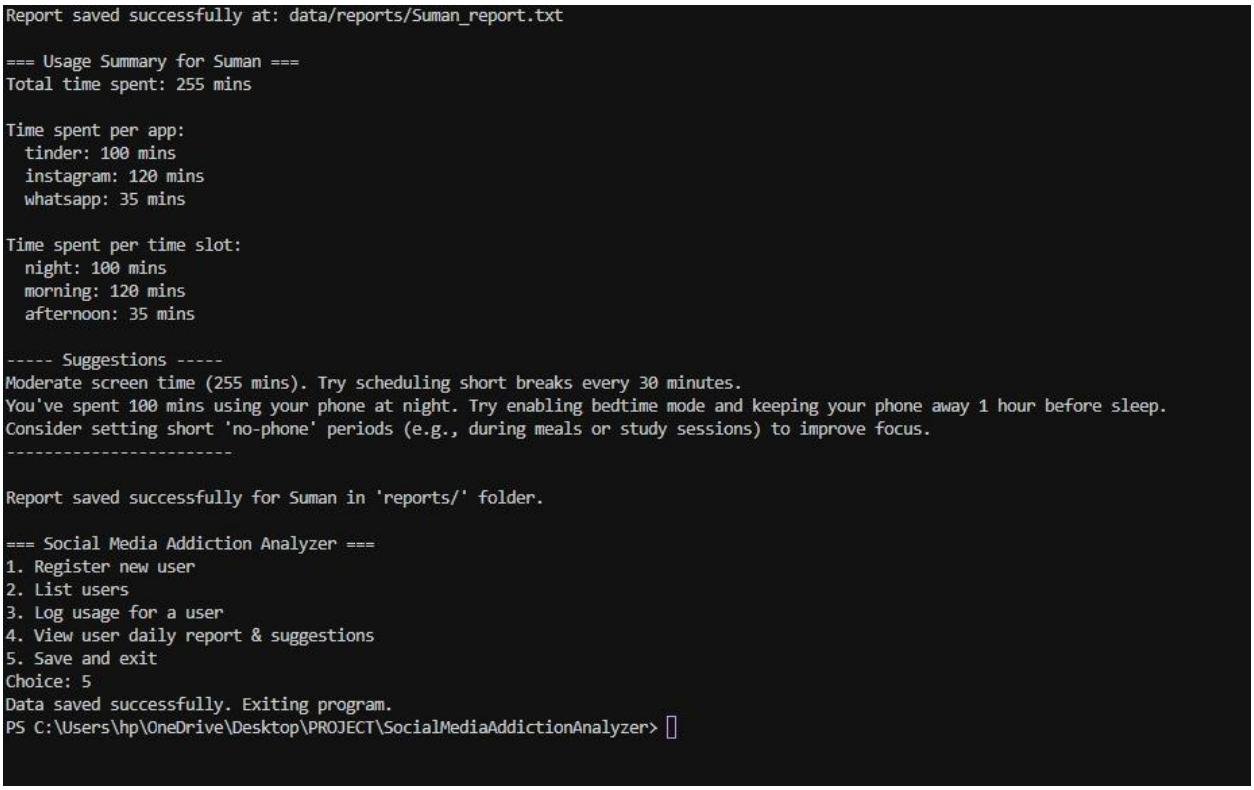
In addition to interface improvements, the system can incorporate advanced data analytics and artificial intelligence to automatically detect unhealthy usage trends and predict potential addiction risks. Machine learning models could analyze user behavior over time and generate tailored suggestions for digital well-being, such as recommending app breaks, mindfulness activities, or time limits.

The project can also integrate with smartphones via APIs to automatically fetch real-time app usage data instead of relying on manual inputs, enhancing accuracy and convenience. Moreover, a notification or alert system can be added to remind users when they exceed healthy screen time limits. In the long run, the platform could serve as a digital wellness assistant, helping users maintain a balanced lifestyle and even offering parental monitoring features or institutional reports for educational settings. Thus, the project holds great potential to grow into a comprehensive digital health and productivity management tool.

RESULTS / OUTPUT :

```
PS C:\Users\hp\OneDrive\Desktop\PROJECT\SocialMediaAddictionAnalyzer> ./addictionAnalyzer

=== Social Media Addiction Analyzer ===
1. Register new user
2. List users
3. Log usage for a user
4. View user daily report & suggestions
5. Save and exit
Choice: 1
Enter new user name: Suman
User 'Suman' created with ID 3.

=== Social Media Addiction Analyzer ===
1. Register new user
2. List users
3. Log usage for a user
4. View user daily report & suggestions
5. Save and exit
Choice: 2
Registered users:
ID: 1, Name: aryan_r
ID: 2, Name: virat_kohli
ID: 3, Name: Suman
```

```
1. Register new user
2. List users
3. Log usage for a user
4. View user daily report & suggestions
5. Save and exit
Choice: 3
Enter user name: Suman
Enter app name (e.g., Instagram): Instagram
Enter duration minutes: 120
Enter time slot (Morning/Afternoon/Night): Morning
Usage for app 'instagram' added successfully for Suman.

=== Social Media Addiction Analyzer ===
1. Register new user
2. List users
3. Log usage for a user
4. View user daily report & suggestions
5. Save and exit
Choice: 3
Enter user name: Suman
Enter app name (e.g., Instagram): Whatsapp
Enter duration minutes: 35
Enter time slot (Morning/Afternoon/Night): Afternoon
Usage for app 'whatsapp' added successfully for Suman.

=== Social Media Addiction Analyzer ===
1. Register new user
2. List users
3. Log usage for a user
4. View user daily report & suggestions
5. Save and exit
Choice: 4
Enter user name: Suman

=== Analysis for Suman ===
Total Social Media Time: 255 minutes

--- App Usage ---
tinder: 100 minutes
instagram: 120 minutes
whatsapp: 35 minutes

--- Time Slot Distribution ---
night: 100 minutes
morning: 120 minutes
afternoon: 35 minutes

Analysis completed successfully.
```



CONCLUSION:

The Social Media Addiction Analyzer project provides an effective way to help users track and analyze their social media usage, promoting healthier digital habits. By efficiently managing user data and generating insightful usage reports, the system raises awareness about excessive screen time and encourages responsible online behavior. This project not only demonstrates practical implementation of data handling and analysis techniques but also serves as a step toward addressing the growing issue of social media addiction in today's digital age.