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Digital Webeling System For Laptop Monitoring And Management

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Abstract:

The Webeling System aims to monitoring, track, and manage the digital usages of laptop in the real-time, providing insights into app usage, system performance, and promoting overall digital Webeling.

The system using the Python and PyQt5 for a comprehensive graphical interface and generates reports. It is promoting the healthy usages laptop.

The recently proposed framework is evolving as the fundamental need of the industry for monitoring, control, security and wellbeing of various exercises. The monitoring framework incorporates sensors like fire sensor, smoke sensor, ultrasonic sensor, moisture and temperature sensor, current and voltage with Wi-Fi module for control operations. With the benefits of unusual exercises, reasonable activities will be activated. This framework can likewise be controlled by using remote server with application in PC/Laptop.

Keywords:

Digital Webeling, Python, PyQt5, System Monitoring, Laptop Usages, Report Generation, App Monitoring, Real-Time Monitoring, User Interface.

Introduction:

Digital Webeling System is an increasingly critical concern in environmental, where excessive digital usages can impact the focus and productivity. This Paper presents the design and implementation of Webeling System which monitors app usage, provides system performance tracking, and generates report. The system also offers real-time monitoring of active processes and allows. This paper presents the design and implementation of the Webeling System, an intelligent digital wellbeing solution aimed at monitoring application usage, tracking system performance, and generating comprehensive usage reports. The system continuously logs active processes, evaluates screen time, and analyses user activity to detect patterns of

overuse. It provides real-time graphical dashboards displaying critical metrics such as CPU, RAM, and disk usage, offering insights into device load and efficiency.

In today's digitally driven world, excessive and unregulated usage of laptops and computing devices has become a growing concern, particularly in academic and professional environments. This overuse often leads to reduced productivity, eye strain, mental fatigue, and even long-term health issues. Therefore, there is a pressing need for systems that not only monitor but also promote healthier digital usage patterns. Digital wellbeing is no longer just a personal concern but a broader environmental and institutional responsibility.

The **Digital Webeling System** addresses this need by offering a comprehensive solution for monitoring and managing laptop usage. It is designed to observe app usage patterns, monitor system performance in real-time, and log active processes for analysis. The system continuously tracks screen time and user activity, detecting potential signs of overuse or prolonged idleness. It further aims to provide actionable insights through visual dashboards that represent CPU, RAM, and disk usage, helping users and administrators understand device workload and user behaviour.

Built using **Python** and **PyQt5**, the system includes a graphical user interface for intuitive interaction and live performance tracking. Data is stored in a **MySQL** database, allowing for report generation and long-term data analysis. The system also features configurable break reminders that encourage users to take regular pauses, thus reducing strain and improving digital health.

What makes this system unique is its focus on **real-time monitoring**, **centralized data storage**, and **user-friendly design**, making it highly applicable in educational institutions, corporate offices, and individual use cases. Furthermore, the system supports digital discipline by tracking unauthorized app usage and generating usage reports that can be analysed by supervisors or IT administrators. The framework can be extended to support cloud-based monitoring, AI-driven behaviour analysis, and network usage tracking, thus paving the way for smarter and more secure digital environments.

This paper presents the design, methodology, implementation, and future prospects of the **Digital Webeling System**, emphasizing its role in promoting balanced and healthy laptop usage, especially in environments where productivity and digital discipline are critical

Literature Review

Digital wellbeing systems have gained considerable attention with the increasing usage of digital devices in both personal and professional environments. Most of the existing literature focuses on mobile-based digital wellbeing applications, whereas laptop and desktop systems remain underexplored.

1. Mobile-Focused Digital Wellbeing Solutions

Dienlin and Johannes (2020) emphasized the psychological effects of prolonged digital exposure, particularly among adolescents, highlighting the necessity for tools that monitor and reduce screen time. Similarly, Al-Mansoori et al. (2023) proposed a digital wellbeing framework designed specifically for mobile devices. Their system included features such as app usage tracking, blocking, and real-time feedback. Although these approaches effectively encourage healthier digital habits, they are primarily focused on smartphones and lack adaptability to laptops or desktop environments.

2. Application Usage Tracking

Smith and Thomas (2021) investigated the influence of screen time feedback on user behaviour. Their research revealed that when users receive insights about their app usage, they are more likely to become self-aware and consciously reduce non-essential digital activity. Despite its relevance, this study does not present a concrete system for laptop usage tracking. Moreover, it lacks essential features such as centralized monitoring, real-time system performance evaluation, and cross-device integration, which are crucial for comprehensive digital wellbeing.

3. Industrial and Institutional Monitoring Systems

Existing research in industrial and institutional settings often revolves around physical environment monitoring using sensors such as fire, smoke, temperature, and moisture detectors. These systems are primarily designed for safety and infrastructure control, offering limited focus on digital interactions and software usage.

Proposed Work:

- Previous work in the field of digital Wellbeing systems has focused on mobile devices, but there is limited research dedicated on managing laptop usages, particularly laptops.
- Existing System include monitoring solutions but few offer real-time data reporting, app usage tracking, and performance management.

Methodology

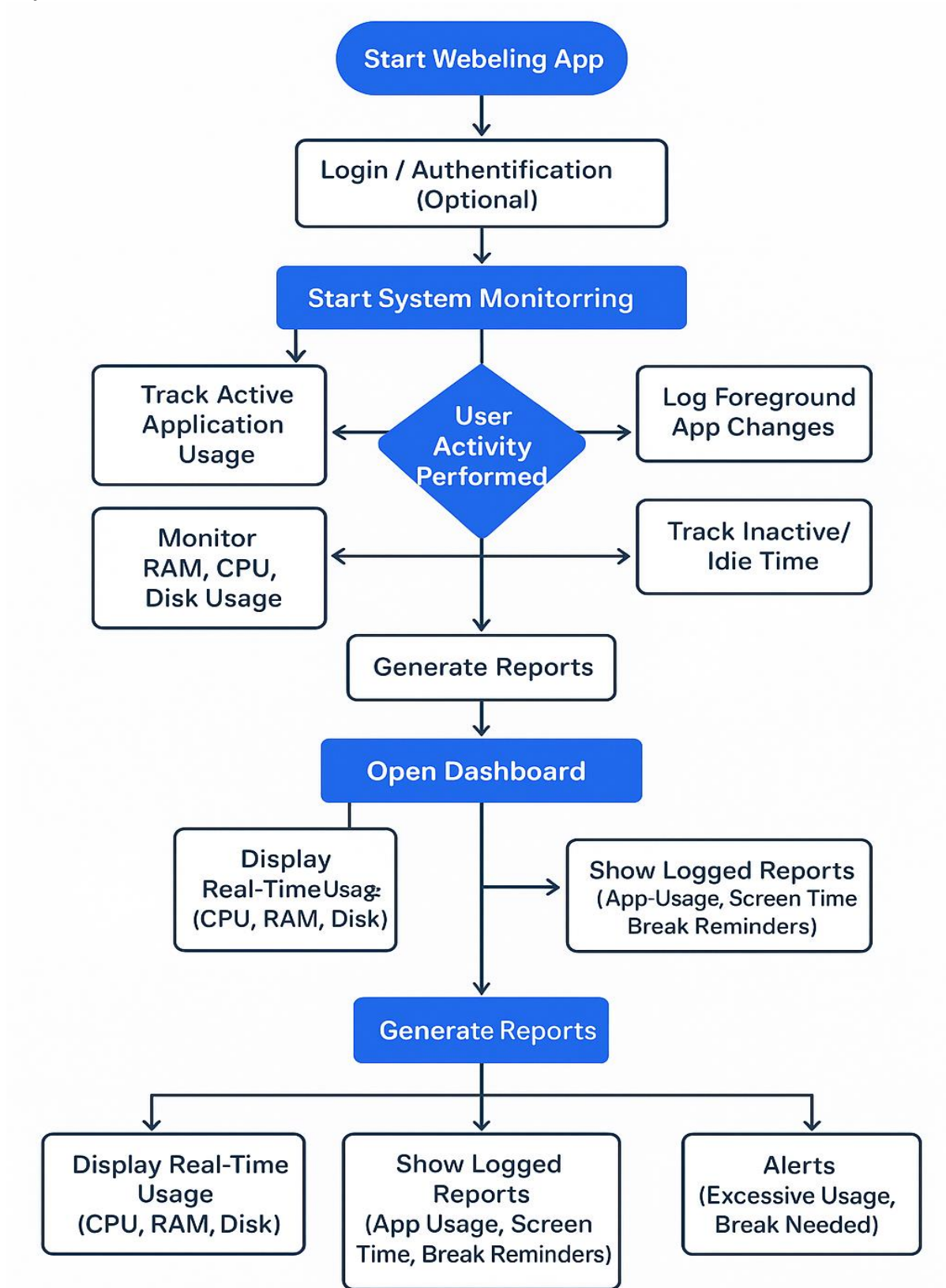
The digital Wellbeing System is built using the following components:

- Frontend: PyQt5-based graphical user interface (GUI) for monitoring CPU and memory usage, app usage, and generating reports.
- Backend: Python libraries for system monitoring, data collection, and storage.
- Database: MySQL for storing app usages statistics, allow for live data display.

Objective

- To monitor active & Background Application.
- To provide the break reminds for eyes protection.
- To calculate the daily log activity
- To implement a centralized monitoring system.

System Architecture



System Design:

- App monitoring: The system records app usages times, active applications, and generates usage patterns.
- Real-Time CPU and Memory Usage: The system tracks and displays CPU usage, RAM utilization, and SSD usage in real-time- in monitoring performance.
- Break Reminders: The system includes configurable break reminders to promote digital usages
- Data Storage: Usages Data is stored in MySQL, providing persistence and enabling report generation

Implementation

- The system was implemented using Python 3.x, PyQt5 for the GUI and MySQL for data storage.
- Python libraries like psutil were used for system monitoring, while, matplotlib was employed for visualizing data.
- The main components of System
- App Use Tracker: Monitors the applications running on the laptop
- Performance Tracker: Display Real-time CPU, memory, and storage usage.
- User Interface: A simple yet efficient GUI that displays reports, usage statistics and notification.

Future Scope:

- Detect the Unauthorized app in system.
- Generate detailed reports.
- Predictive Maintenance Of Laptop
- Track network data usage per app
- Monitor laptop hardware health and predict issues in advance.

Conclusion:

The Webeling System offers an effective solution for monitoring laptop usage in the educational environment. By providing real-time data on app usage and system performance, the system helps display the laptop health. Future work focus adding more features, such as integration with performance graphs alert system and monitoring unauthorized application & virus.

In this paper, a comparative analysis on various systems developed for the controlling and monitoring system for the industry is proposed. Design and implementation of the existing system is also discussed. After review in the existing studies, a cost efficient system has been proposed for industrial monitoring and controlling

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