IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 6, Issue 7, March 2026
Impact Factor: 8.2

DayTrack: A Progressive Web Application for Integrated Productivity and Mood Management

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Abstract: *The system works smoothly across different devices such as smartphones, tablets, and laptops, and even supports offline usage. This means users can continue writing entries, logging moods, or managing tasks without an internet connection, and the data will automatically sync when connectivity is restored. The main aim of DayTrack is to simplify daily life management while helping users become more aware of their emotional patterns. By bringing together productivity tools and mental well- being features, the application offers a balanced and user-friendly solution that supports both efficiency and self-reflection in ev- eryday life. In today's fast-moving digital environment, people often struggle to balance productivity with their emotional well- being. Many individuals rely on multiple applications to manage tasks, track their mood, and record daily experiences, which can be inefficient and time-consuming. DayTrack is designed as a Progressive Web Application (PWA) that combines diary writing, mood tracking, and task scheduling into a single unified platform. The system works smoothly across different devices such as smartphones, tablets, and laptops, and even supports offline usage. This means users can continue writing entries, logging moods, or managing tasks without an internet connection, and the data will automatically sync when connectivity is restored. The main aim of DayTrack is to simplify daily life management while helping users become more aware of their emotional patterns. By bringing together productivity tools and mental well-being features, the application offers a balanced and user- friendly solution that supports both efficiency and self-reflection in everyday life..*

Keywords: DayTrack, PWA, Productivity, Mood Tracking, React, Node.js, MongoDB

I. INTRODUCTION

In recent years, the rapid advancement of digital technology has significantly changed the way people manage their daily lives. Traditional methods such as handwritten diaries, plan- ners, and notebooks are gradually being replaced by digital applications that offer greater convenience, flexibility, and accessibility. These tools allow users to organize tasks, store important information, and access their data anytime and anywhere.

Despite these advantages, most existing applications focus on only one aspect of daily life. Productivity applications are mainly designed to manage tasks, deadlines, and schedules. They help users stay organized and improve efficiency, but they do not consider the emotional state of the user. On the other hand, applications related to journaling and mood tracking allow users to record their thoughts and emotions, but they lack features for task management and planning.

This separation creates a major challenge for users. Managing multiple applications for different purposes can be time consuming and confusing. For example, a user may write about their day in a diary application, track their mood in another app, and manage tasks in a separate productivity tool. This fragmentation reduces efficiency and makes it difficult to understand the relationship between productivity and emotional well-being.

Another important limitation of many existing applications is their dependency on continuous internet connectivity. In real-life situations such as traveling, commuting, or being in low-network areas, users may not have access to the internet. As a result, they are unable to use these applications effectively. In addition, many applications are platform-

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dependent, meaning they are designed specifically for certain operating systems, which limits accessibility across devices.

To address these challenges, DayTrack is developed as an integrated solution that combines multiple functionalities into a single platform. It allows users to maintain a digital diary, track their daily mood, and manage tasks in one place. This integration helps users save time and improves their overall experience.

The use of Progressive Web Application (PWA) technology plays a key role in the development of DayTrack. PWAs provide features such as offline access, fast loading speed, and cross-platform compatibility. Users can install the application directly from their browser without downloading it from an app store. Once installed, it behaves like a native application and provides a smooth user experience.

The main objective of DayTrack is to simplify daily life management while also promoting emotional awareness. By combining productivity tools with mood tracking features, the system helps users understand how their emotions affect their daily performance. This makes the application not only useful for task management but also valuable for personal growth and self-awareness.

Overall, DayTrack aims to provide a simple, efficient, and user-friendly solution that supports both productivity and emotional well-being in a modern digital environment.

II. LITERATURE REVIEW

A wide range of applications have been developed to assist users in managing their daily activities, organizing tasks, and tracking personal well-being. These applications can generally be categorized into three main groups: diary applications, productivity tools, and mood tracking systems.

Diary applications are designed to allow users to record their daily experiences, thoughts, and personal reflections. These tools help users maintain a record of their activities and can be useful for self-expression and memory keeping. However, most diary applications are limited in functionality and do not provide additional features such as task management or emotional analysis. As a result, users cannot connect their daily activities with their emotional patterns.

Productivity tools, on the other hand, are widely used for managing tasks, setting reminders, and organizing schedules. These applications help users improve efficiency by allowing them to plan their work and track their progress. While they are effective for managing deadlines and responsibilities, they focus only on productivity and ignore the emotional well-being of the user. This creates an imbalance, as users may complete tasks but still experience stress or burnout without any way to track or manage it.

Mood tracking applications focus specifically on helping users understand their emotional state. These systems allow users to log their mood using simple inputs such as emojis, colors, or short descriptions. Some applications also provide basic insights into emotional patterns over time. However, they do not include features for managing tasks or planning daily activities. This limits their usefulness, as users must rely on other tools to organize their work.

In addition to these limitations, many existing applications depend heavily on internet connectivity. This means users cannot access their data or use the application in offline situations. Furthermore, most applications are developed as native mobile apps, which require separate versions for different operating systems. This increases development complexity and reduces accessibility for users who switch between devices.

Recent advancements in web technologies have introduced Progressive Web Applications (PWAs), which combine the advantages of web and mobile applications. PWAs offer features such as offline access, faster loading times, and crossplatform compatibility. They can be accessed through a web browser and installed on devices without requiring an app store. These features make PWAs a promising solution for modern application development.

Despite these advancements, there is still a lack of systems that integrate diary writing, mood tracking, and task management into a single platform. Most existing solutions address only one aspect of user needs, forcing users to switch between multiple applications.

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Therefore, there is a clear need for a unified system that combines these functionalities in a simple and efficient manner. DayTrack is developed to fulfill this need by providing an integrated platform that supports both productivity and emotional well-being.

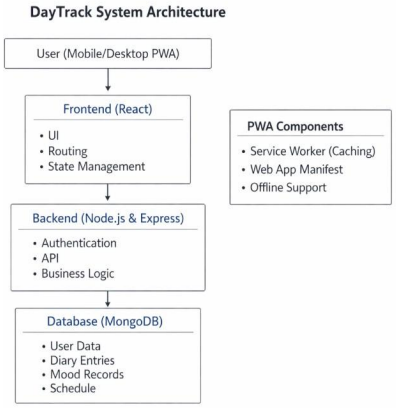

Fig. 1. 1

III. SYSTEM ARCHITECTURE

DayTrack is designed using a client-server architecture that ensures smooth interaction between the user interface, backend processing, and data storage. The system is structured in a way that allows efficient performance, easy scalability, and reliable data management.

A. Client Layer

The client layer represents the user interface of the application. It is accessed through a web browser and provides a responsive design that works across different devices such as mobile phones, tablets, and desktops. Users can easily write diary entries, track moods, and manage tasks through this interface.

B. Frontend Layer

The frontend is developed using React, which helps in building dynamic and interactive components. It allows realtime updates without refreshing the page, making the user experience smooth and fast. Features such as form inputs, task lists, and mood selection are handled in this layer.

C. Backend Layer

The backend is built using Node.js and Express. It manages the core functionality of the system, including handling user requests, processing data, and managing authentication. It also connects the frontend with the database through API calls.

D. Database Layer

MongoDB is used as the database to store user data such as diary entries, mood logs, and task schedules. It provides flexibility in storing different types of data and ensures fast retrieval of information.

E. PWA Integration

The system uses Progressive Web App features to improve performance and usability. Service workers allow offline access by caching important data, while the web app manifest enables users to install the application on their device like a native app.

This layered architecture ensures that DayTrack remains fast, reliable, and accessible across multiple platforms.

IV. REVIEW METHODOLOGY

The development of DayTrack was carried out using a practical and user-focused approach. The first step involved studying and analyzing different types of existing applications, including diary applications, productivity tools, and

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mood tracking systems. These applications were evaluated based on their features, usability, performance, and limitations.

During this analysis, it was observed that most applications focused only on a single purpose and lacked integration with other functionalities. Many of them also required constant internet connectivity and did not provide a smooth experience across different devices.

Based on these observations, the key features required for DayTrack were identified. The system was designed to combine diary writing, mood tracking, and task management into a single platform. The goal was to provide a simple and efficient solution that reduces the need for multiple applications.

For implementation, modern technologies were selected. The frontend was developed using React to ensure a responsive and interactive user interface. The backend was built using Node.js and Express to handle data processing and communication. MongoDB was used as the database due to its flexibility in storing different types of data.

After development, the application was tested on multiple devices and browsers to ensure compatibility and performance. Basic user testing was also conducted to check usability and identify areas for improvement.

This step-by-step methodology helped in developing a reliable and user-friendly system that meets real-world requirements.

V. ANALYSIS OF EXISTING TECHNIQUES

Existing applications used for productivity and personal management are generally divided into separate categories such as diary applications, task management tools, and mood tracking systems. While each category provides useful features, they are often limited in scope and do not offer a complete solution.

Diary applications mainly focus on writing and storing personal experiences. They allow users to record their daily activities but do not provide features for task planning or emotional analysis. As a result, users cannot connect their daily experiences with their productivity or mood patterns.

Productivity tools are widely used for managing tasks, setting reminders, and organizing schedules. These applications are effective in improving efficiency but do not consider the emotional condition of the user. This can lead to situations where users complete tasks but still experience stress or lack motivation.

Mood tracking applications help users record their emotional states and sometimes provide basic insights into their feelings over time. However, they do not include features for managing tasks or organizing daily activities. This limits their overall usefulness.

Another major limitation of existing techniques is their dependency on internet connectivity. Many applications do not work properly without an active connection, which reduces their usability in real-life situations such as travel or lownetwork areas.

Additionally, most applications are platform-specific and may not work consistently across different devices. This creates inconvenience for users who prefer flexibility.

These limitations highlight the need for a unified system like DayTrack, which integrates multiple features into a single platform and provides a more complete and efficient solution.

VI. DISCUSSION AND RESEARCH GAPS

After studying different types of existing applications, it becomes clear that although many tools are available, they do not fully meet the daily needs of users. Most applications are designed with a single purpose in mind, which creates a gap when users try to manage different aspects of their lives together.

One of the main issues is the lack of connection between productivity and emotional well-being. Some applications help users complete tasks and manage their schedules, while others focus only on tracking moods or writing personal thoughts. However, in real life, both of these aspects are closely related. For example, a person's mood can affect how well they complete their tasks, and their workload can influence their emotional state. Since existing applications do not combine these features, users are unable to clearly understand this connection.

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Another important gap is the dependency on internet connectivity. Many applications stop working or lose functionality when there is no internet connection. This can be inconvenient in situations such as traveling, commuting, or being in areas with weak network signals. Users expect applications to be reliable at all times, but this is often not the case with current systems.

In addition, users often face difficulties due to the need to switch between multiple applications. For example, they may use one app for writing notes, another for tracking mood, and a different one for managing tasks. This not only wastes time but also breaks the flow of work, making the overall experience less efficient.

User interface design is another area where improvements are needed. Some applications are too complex, with many features that are difficult to understand, especially for new users. A simple and clear interface is important so that users can easily interact with the application without confusion.

Platform limitations also create challenges. Some applications work only on specific devices or operating systems, which reduces accessibility. Users prefer solutions that can work smoothly across different devices such as mobile phones, tablets, and laptops.

DayTrack is designed to address these gaps by bringing everything together into a single, easy-to-use platform. It combines diary writing, mood tracking, and task management so that users do not need to rely on multiple applications. It also provides offline functionality, allowing users to continue using the system even without an internet connection.

Overall, the goal is to create a system that is simple, reliable, and useful in real-life situations. By focusing on user needs and removing unnecessary complexity, DayTrack aims to provide a better and more complete solution compared to existing applications.

VII. CONCLUSION AND FUTURE DIRECTIONS

DayTrack is developed as a simple and practical solution to help users manage their daily activities while also staying aware of their emotional well-being. In today's fast-paced life, people often rely on different applications for tasks, journaling, and mood tracking. This makes the process complicated and time-consuming. DayTrack solves this problem by combining all these features into a single platform.

The application allows users to write diary entries, track their mood, and organize tasks in one place. This helps users save time and improves their overall experience. Another important feature of DayTrack is its ability to work even without an internet connection. Users can continue using the application in offline mode, and their data is automatically updated when the connection is restored.

The system is designed to be simple and easy to use so that anyone can use it without difficulty. It works across different devices such as mobile phones, tablets, and computers, which makes it more accessible and flexible for users.

Looking towards the future, there are many ways in which DayTrack can be improved. One possible improvement is the use of smart features that can analyze user data and provide helpful suggestions. For example, the system could identify patterns in mood and suggest ways to improve daily habits.

Another useful feature could be reminder notifications that help users stay consistent with their tasks and mood tracking. Visual reports such as charts and graphs can also be added to help users understand their progress over time.

The system can also be connected with other devices or applications to provide more detailed information. For example, linking with health or fitness apps can help users understand how their physical activity affects their mood.

In addition, support for multiple languages can make the application accessible to a wider range of users. Cloud storage and synchronization can also be improved to ensure that data is updated instantly across all devices.

In conclusion, DayTrack provides a balanced approach to managing productivity and emotional well-being. It shows how modern technology can be used to create simple and effective solutions for everyday problems. With further improvements and additional features, it has the potential to become a powerful tool for helping users manage their daily lives more effectively.

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