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TIME, PALS!; AN APPLICATION-BASED TOOL TO REDUCE ACADEMIC PROCRASTINATION AMONG LEARNERS.

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Abstract

Education is very important in shaping the quality of reliable Human Resources Development (HRD) who are ready to face future challenges. However, students often experience difficulties in managing their time, which can cause procrastination, a problem that hampers productivity and academic performance. Procrastination can increase stress levels and have a negative impact on academic achievement, with delayed tasks often completed with unsatisfactory results. With technological advances, mobile applications for time management such as 'Time, Pals!' offer a potential solution through features like a time table, to-do list, and school schedule that are designed using Python, Editor/IDE, and PostgreSQL. This application is designed and is hoped to help in organizing the tasks of students and it is hoped that with the existence of this application, students can reduce procrastination.

Keywords: Education, Time Management, Procrastination, Mobile Application, Student Productivity.

INTRODUCTION

Education is one of the most important aspects of human life, as it plays a crucial role in shaping individuals and society as a whole. In undergoing education, a person must pass through various complex academic stages that require discipline, responsibility, and effective self-management. Throughout this academic process, teaching and learning activities become central elements that involve both teachers and students in achieving educational goals. These activities are expected to improve the quality of Human Resources (SDM), enabling students to develop into competent individuals who will contribute to the future of their families, communities, and even the nation. A country can be considered developed when it possesses high-quality human resources in various aspects, particularly in education.(1) However, in reality, many students experience difficulties in managing their time effectively. Students who are involved in numerous activities, both academic and non-academic, inside and outside of school, often feel overwhelmed when trying to balance their responsibilities. This condition frequently leads to procrastination, which has become one of the most common obstacles faced by students. Procrastination may occur consciously, such as intentionally delaying tasks, or unconsciously due to poor time management and lack of self-regulation.

Procrastination often becomes a major barrier to achieving optimal productivity and academic performance among students. The high prevalence of academic procrastination negatively affects students' psychological well-being and academic achievement. According to Baumeister (1997), procrastination can trigger stress and contribute to psychological dysfunction. Similarly, Solomon and Rothblum (1984) stated that procrastination often results in tasks being unfinished or completed with unsatisfactory quality, which ultimately leads to feelings of anxiety and guilt. Furthermore, procrastination causes students to work under time pressure, increasing the likelihood of mistakes. When assignments are completed in anxious conditions, concentration becomes difficult, leading to decreased learning motivation and reduced self-confidence.(2) mAlong with rapid technological advances, various mobile time management applications have been developed to assist students in organizing their time more effectively and are expected to help reduce procrastination. Applications such as "Time, Pals!" provide features including calendars, task lists, and productivity timers that are specifically designed to improve time efficiency and task prioritization among students. This application offers a range of features that support effective time management, and existing evidence suggests that such applications can help students organize their academic activities more systematically. Evaluations of similar applications indicate that while they are effective in structuring tasks and schedules, their direct impact on reducing procrastination still requires further investigation. Therefore,

additional studies are needed to examine the effectiveness of mobile applications in reducing procrastination and to assess their long-term impact on student productivity, academic performance, and psychological well-being in greater depth.

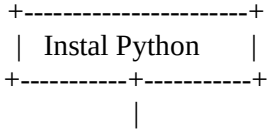
LITERATURE REVIEW

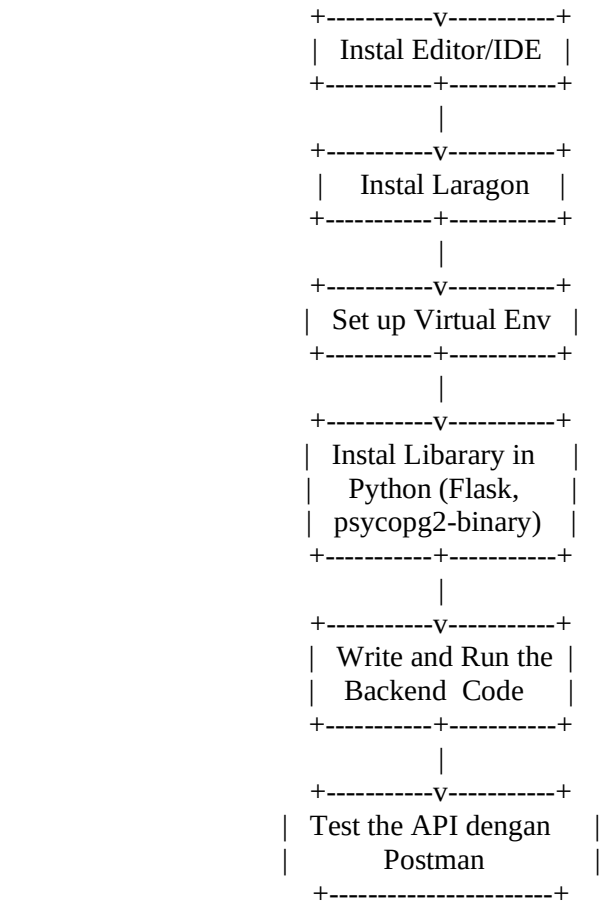
Applications can be categorized into three main platforms: desktop, web, and mobile. Currently, mobile applications are the most dominant and widely used globally. Rapid advancements in smartphone technology have enabled the development of mobile applications to become increasingly sophisticated and functional. Mobile application development can be done through various methods, such as native development, hybrid, and progressive web apps (PWA), each with its own advantages. The popularity of mobile applications not only enhances the user experience but also drives technological innovation to meet the ever-growing market needs. (3) Python is a programming language often used to develop applications across various platforms, including desktop, web, and mobile. Python is popular among large companies and developers due to its flexibility and ease of use. This language is also widely studied by students, especially in IT-focused educational institutions. Although learning programming can be a challenge, this process can be made easier by starting from basic concepts such as sequences, branching, and loops. An IDE (Integrated Development Environment) like Visual Studio Code (VSCode) is often used to write Python code and supports various operating systems, including Windows, Linux, and Mac. Library study and experimental methods can be used to understand and implement basic algorithms in Python programming using VSCode. (4)

Laragon is open-source software that supports various operating systems and functions as a local server or localhost. With Laragon, you can set up a web development environment on your own computer easily. Laragon offers various essential services and tools for development, including the Apache web server, PHP server, as well as caching systems like Memcached and Redis. Additionally, Laragon is equipped with various useful tools such as Composer for dependency management, Xdebug for debugging, and PHPMyAdmin for database administration. Laragon also provides Cmder as an advanced terminal and supports integration with the Laravel framework, making it easier for developers to start and manage their web projects efficiently. (5) The term “procrastination” originates from Latin, formed from the combination of two words: “pro”, which means “forward,” “in favour of,” or “ahead,” and “crastinus”, which means “tomorrow.” When these two terms are combined, they form the word “procrastination,” which refers to the tendency to delay tasks or actions that should be completed in the present and instead postpone them until a later time. In Indonesian, this term is translated as “procrastination,” which can be understood as a habitual behaviour of deliberately or unintentionally delaying work until tomorrow. This behaviour often involves avoiding tasks despite being aware of their importance and potential consequences, reflecting difficulties in self-regulation and time management. As a result, procrastination is not merely a matter of laziness, but a complex psychological phenomenon that can affect an individual’s productivity, emotional well-being, and overall performance. (6)

METHOD

This study employs a mixed-methods approach, which combines quantitative and qualitative research methods to produce more comprehensive and well-rounded results. Quantitative data, such as numerical data and statistical findings, are first collected to identify general patterns and trends. These findings are then explored in greater depth through qualitative analysis, including interviews with relevant informants. By integrating both types of data, this approach enables the researcher to obtain a broader perspective as well as a deeper understanding of the research topic. At present, there are numerous time management applications that are easily accessible, such as Notes and Google Calendar, which assist users in organizing their daily activities and schedules. However, the distinctive advantage of the Time, Pals! application lies in its user-friendly design, which is intentionally made more intuitive and accessible for a wide range of users. In addition, Time, Pals! integrates key features commonly found in existing applications into a single platform. This integration offers a more practical and efficient solution, allowing users to manage, plan, and organize their time more effectively while reducing the complexity often associated with using multiple applications simultaneously.





Flowchart perancangan Aplikasi Time, Pals!

Here is the design procedure for the Backend, API, and Frontend of the application 'Time, Pals!': The first thing that needs to be done is to install the required tools. The required tools include Python, an Editor/IDE (Visual Studio Code), and Laragon. The second stage in creating the 'Time, Pals!' application is to prepare the application development environment (Virtual Environment). After preparing the Virtual Environment, download the Python libraries using the code **'pip install Flask psycopg2-binary'**. Flask is used as a web framework for building the API, and psycopg2-binary is used to connect the Python application with Laragon.

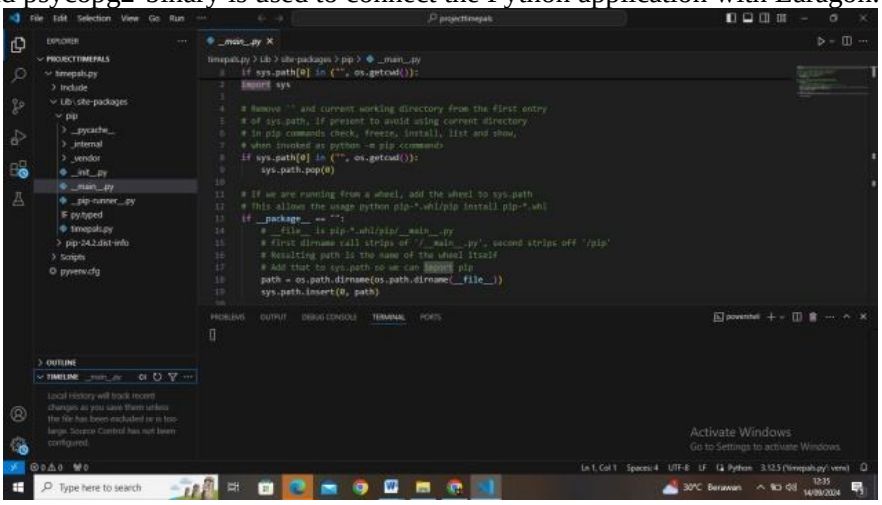


Image 1: Creating a virtual environment and installing python libraries in visual studio code.

The third step to be carried out is writing the code for the Backend (API), which functions to add tasks to the database. After the code is run, to launch the application, you need to create the todo_db database and the tasks table. The application will run by default.

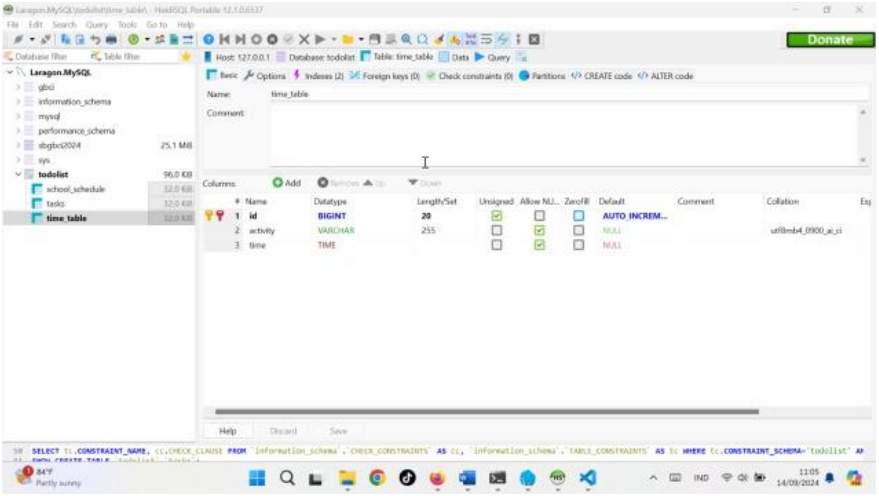


Image 2: Database form in Laragon.

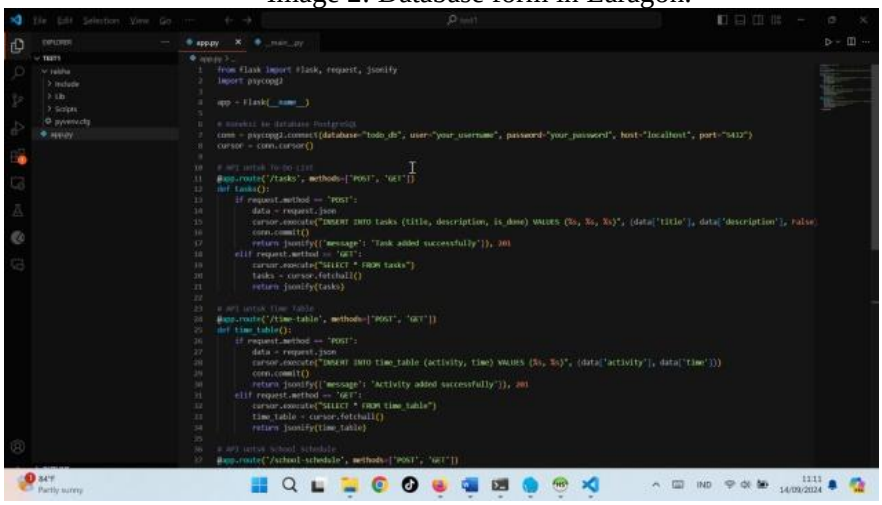


Image 3: Database form in visual studio code.

Next, access and test the API. Use tools such as Postman to test the /tasks endpoint. {"title": "Time, Pals!", "description": "To-Do List"} If successful, the API will return the following response: { "message": "Task added successfully" } The next stage is API integration with Flutter, which can be carried out more quickly and efficiently. There are several steps that can be followed. First, use state management such as Provider to separate business logic from the user interface (UI). This will make application management and maintenance easier. Next, use packages such as http or dio in Flutter to simplify the process of sending API requests. In addition, it is recommended to use dummy data on the frontend during the early stages of development to test the UI, while the backend can be connected later. To speed up the development process, tasks can be divided between the frontend and backend teams so that both can work in parallel. Before connecting the API to Flutter, conduct API testing using tools such as Postman or Insomnia. In this process, it is advisable to focus on integrating the main features first so that the project continues to run smoothly and according to plan.

RESULTS AND DISCUSSION

In this fast-paced era, time management has become a crucial factor for students to achieve optimal productivity and life balance. With increasingly diverse demands and responsibilities, many students find it difficult to stay focused and overcome procrastination. The "Time, Pals!" application emerges as an innovative solution to help users manage their time more efficiently. Time Pals is equipped with features designed to improve the way users manage their time. With To-Do List, Time Table, and School Schedule, users can plan and organize their activities according to their respective needs and preferences. The To-Do List allows users to record and organize important tasks, while the Time Table helps in structuring and monitoring daily schedules systematically. The School Schedule facilitates the management of school timetables or academic activities. Additionally, the automatic reminder system ensures that no deadlines or crucial tasks are missed, enabling users to remain organized and productive without worrying about negligence or forgetfulness.

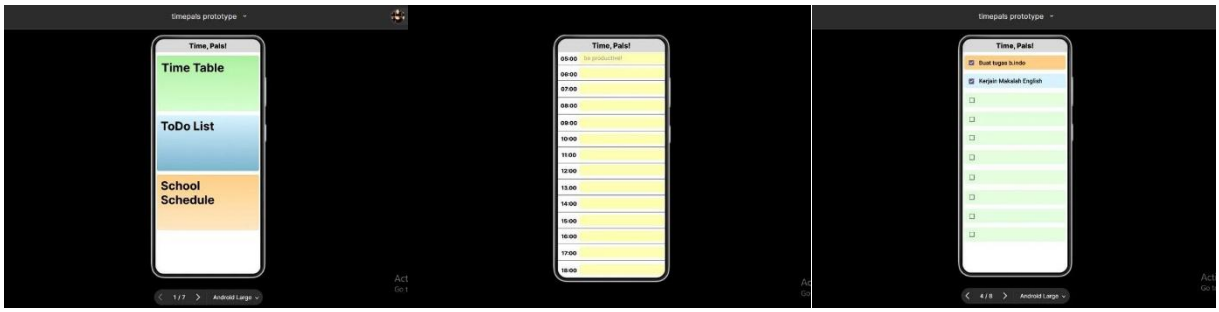


Image 5: The "Time, Pals!" Dashboard and Feature Interface

According to a survey conducted through questionnaires among students of SMA Negeri 1 Dewantara, the majority of respondents believed that this application would make them more productive and able to complete their tasks on time. Out of a total of 180 respondents, 62.8% stated that the application would help improve their productivity and enable them to finish their assignments punctually.

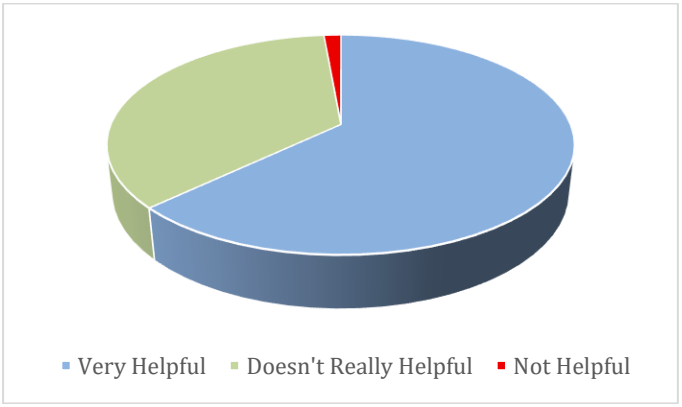


Diagram: Questionnaire distributed at Dewantara 1 State Senior High School

Respondents also indicated that the reminder feature provided by the application was highly beneficial in supporting more efficient and systematic time management. This feature helped students remain aware of their schedules and upcoming deadlines, thereby reducing the likelihood of forgetting or postponing assigned tasks. The findings from this survey further support the hypothesis that Time, Pals! is effective in assisting students in reducing procrastination and improving overall task management. Several key features of the application, particularly task scheduling and to-do lists, were found to have a significant positive impact on students' behavioral patterns. These features encouraged students to plan their activities more carefully, prioritize tasks, and allocate their time more effectively. As a result, students demonstrated increased consistency in completing assignments and greater adherence to established deadlines. Such behavioral changes suggest that the application not only facilitates task organization but also contributes to the development of more disciplined study habits.

These results are consistent with previous studies which have demonstrated that technology-based time management applications can enhance efficiency and reduce procrastination tendencies among students. The effectiveness of Time, Pals! can be attributed to its ability to provide a clear and structured framework for managing academic responsibilities, increase students' awareness of time constraints, and strengthen intrinsic motivation to complete tasks in a timely manner. By offering an integrated set of practical features, the application supports students in monitoring their progress and maintaining accountability for their responsibilities. Overall, the findings indicate that Time, Pals! serves as an effective tool in promoting improved time management practices and fostering higher levels of academic productivity among students. The application's combination of structured planning, timely reminders, and accessible task management features highlights its potential as a supportive technological solution for addressing procrastination and enhancing students' ability to manage their academic workload more effectively.

CONCLUSION

In conclusion, procrastination remains one of the main challenges frequently faced by students in achieving optimal academic performance. The habit of delaying tasks, whether intentional or unintentional, has the potential to reduce productivity and negatively affect students' psychological well-being, including increased levels of stress and anxiety. Nevertheless, technological advancements have created opportunities to help students address this issue.

One such innovation designed to support time management is the Time, Pals! application, which is specifically developed to assist users in managing their time more efficiently. This application is equipped with various features, such as a to-do list, timetable, school schedule, and automatic reminders, which help students plan, organize, and complete their tasks in a more timely manner. These features provide a clear structure and enable users to maintain focus on important tasks. Based on the evaluation and survey results conducted, Time, Pals! has been proven effective in reducing levels of procrastination and improving students' time management skills. The application not only serves as a reminder of deadlines but also motivates students to complete tasks with greater discipline. Therefore, Time, Pals! demonstrates strong potential as an effective solution to support students in increasing productivity, completing tasks on time, and overall managing their academic workload more effectively. This finding confirms that time management–based technology can play an important role in helping students reduce procrastination while enhancing academic performance and maintaining a healthier balance between academic responsibilities and daily life.

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