

AIANG: Revolutionizing Student Productivity and Well-being in the Bangkit Program through AI-Driven Schedule Management

Haris Muhlisin¹, Y.Yatini^{2*}

^{1,2} Department of Geophysical Engineering, Faculty of Mineral Technology, Universitas Pembangunan Nasional Veteran Yogyakarta; Jalan SWK 104 (North Ring), Condongcatur, Yogyakarta 55283

Abstract

This research delves into the creation and application of AIANG, an AI-based application, focusing on its development for enhancing productivity and its benefits for a wide range of individuals, particularly students in the Bangkit Cohort Batch 2 2023. AIANG is designed to manage schedules and activities, recommending based on user input and stress levels, aiming to reduce stress and improve productivity. The study employs statistical and qualitative methods to assess AIANG's impact, highlighting its potential in addressing quarter-life crises, empowering students, and supporting SMEs and public sector employees. The findings suggest that AIANG could effectively manage academic schedules, providing a practical solution to course density and stress management. This research aims to understand the rationale behind AIANG's development, its positive impact on productivity, and its potential to address societal challenges. It underscores the importance of integrating technology in innovative ways to enhance daily life, education, and work efficiency, with a specific focus on the needs of the Bangkit Cohort Batch 2 2023.

Keywords: AIANG, Artificial Intelligence, Busy Schedule, Productivity

INTRODUCTION

In 2020, the percentage of the productive-age population aged 15-64 years reached 70.72% of the total population. This large portion of the productive age population shows that Indonesia is still in the era of demographic bonus. This will continue to increase along with the "Golden Indonesia" target which is expected to reach its peak between 2020-2030. The large number of people of productive age is a source of labor, business actors, and potential consumers who play an important role in accelerating development (BPS Public Relations, 2021).

A survey from the Japan External Trade Organization (JETRO) in 2019 showed that Indonesia's labor productivity score was 74.4. This is lower than Singapore (86.3), Thailand (82.7), Vietnam (80.0), and Laos (76.7), as well as Malaysia (76.2). In addition, productivity per worker in Indonesia is around USD 23,900, only one-fifth that

of Singapore, which ranks first with productivity per worker of USD 149,100. Many other factors can affect productivity, such as education, training, health, and working conditions (Overseas Research Department, 2020).

Zharifa et al. (2023) explore the dynamics of the quarter-life crisis from the perspective of the philosophy of Kawruh Jiwa Ki Ageng Suryomentaram, showing how philosophical understanding can help individuals overcome the crisis. Syifa'ussurur et al. (2021) conducted a literature study to find various alternative interventions in dealing with the quarter-life crisis, showing the importance of diverse approaches in dealing with this problem. Meanwhile, Muhammad et al. (2022) and Mulyatno et al. (2024) researched machine learning training using Python in an information technology community environment, as well as empowering vocational high school students through introductory machine learning

training, showing how technology can be used to improve skills and educational opportunities. Hika et al. (2023) and Purba et al. (2022) show how stock management and fruit quality detection applications as well as e-kinerja applications can help MSMEs and increase the productivity of civil servants, highlighting the potential of technology in supporting business and government.

However, Haryanto et al. (2023) show the negative influence of using the TikTok application on student learning productivity, indicating a misunderstanding of how technology can be used to support or hinder academic activities. These studies highlight the importance of a deep understanding of how technology can be used effectively and responsibly in various contexts.

Thus, these studies show that technology has great potential to improve the quality of life and well-being of individuals and society, but also demonstrate the importance of a deep understanding of how technology can be used effectively and responsibly. Further research is needed to understand how technology can be integrated in the most effective and responsible ways in various aspects of life, as well as to identify and address potential risks associated with the use of technology.

The problem felt by students of the Bangkit by Google, GoTo, Traveloka program is about tight deadlines for assignments and the many things that must be completed. Other demands such as lectures on their respective campuses and other non-academic activities cause students to experience burnout syndrome due to fatigue and stress due to many activities. Other problems such as busyness or other things experienced by each person increasingly make the occurrence of disorders of everyone's mental health.

From the existing problems, researchers try to find ways to increase community productivity, especially Gen-Z and Bangkit Students. In the modern era full of distractions and ever-growing demands, personal productivity is important for every individual. Many people find it difficult to stay

focused and manage their time effectively, especially in an era where technology dominates every aspect of our lives and there are so many activities to do. Against this background, we analyze the problems that often occur specifically in MSIB Bangkit Students and in general Gen-Z mental problems related to distraction and schedule overload.

In the context of Productivity Improvement, we initiated this Capstone with the aim of developing a schedule management application. The app will not only help users build a schedule, but also provide activity recommendations based on parameters inputted by the user. The app, developed with the latest technology, has an intuitive interface and special features such as automatic time management, notifications, and activity recommendations. It aims to provide practical solutions in time management and productivity, facilitating Bangkit and Gen-Z students to manage their daily tasks and improve their mental well-being more effectively.

MATERIAL AND METHOD

This section contains the method of service and implementation of activities.

Methods

The research method that we apply to the design of this AIANG application is intended to increase the productivity of users and overcome the classic problems of time management and schedule management. With a flow chart as follows:

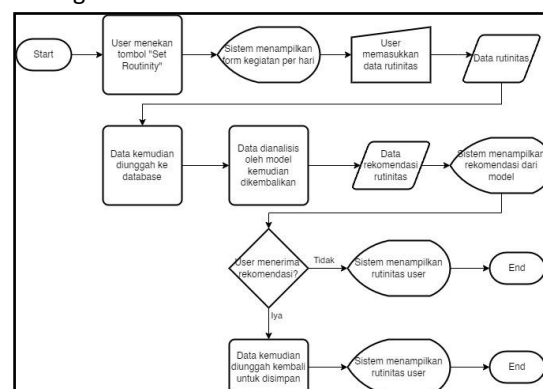


Figure 1. Flowchart of the application model

In the implementation of this service, 3 main stages were carried out, namely:

1. Brainstorming Stage.

At this stage, the features to be created from each learning path, the problem to be solved, and the basic form of the mobile application are carried out.

2. Design and Build Phase.

At this stage, the design, creation of Android-based mobile applications to deployment (combined with other learning paths) is carried out.

3. Testing Phase

This stage is carried out by asking partners to assess the results of the Android-based mobile application that has been made.

4. Socialization Stage

This stage is carried out with a presentation to Bangkit friends by explaining the function of the application.

In case of improvement, it will be improved following the partner's wishes. The research will provide practical demonstrations on the use of AIANG's productivity solutions.

Activity Implementation

Brainstorming and testing of productivity solutions will be conducted online by the AIANG developer team for 2 months. The 7 developers are students from various universities in Indonesia. The timing was chosen considering the busy schedule of Bangkit students during this period. With a focus on productivity solutions, it is hoped that this trial will provide an accurate picture of the potential positive impact on increasing the productivity of Bangkit students.

RESULT AND DISCUSSION

The results of the implementation of this research are from the brainstorming process to the trial process including:

1. Branstorming

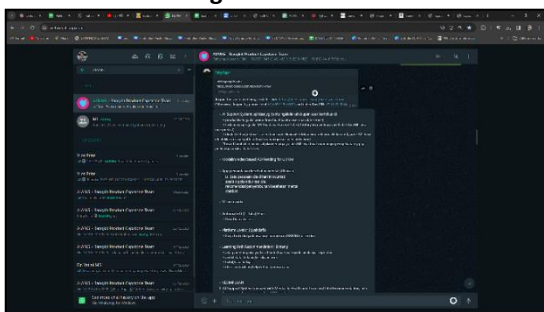


Figure 2. Discussion on application brainstorming

At the brainstorming stage, it produced ideas from several problems experienced by Bangkit students, namely regarding time management and varying levels of stress, so that the developer team consisting of 3 learning paths, namely Machine Learning, Cloud Computing, and also Mobile Development decided to create a productivity application with the superior feature of activity recommendations based on stress levels from user input through several platforms both online chatting Whatapps, Google Meet video conferencing, and Discord multifunctional media and agreed to be completed for 2 months.

2. Planning

Figure 3. Grand design and milestones per week for the application plan

At this stage, pouring the results of discussions and discussions through Google Sheets so that they can be edited by everyone. In addition, each learning path will make targets for each week so that the making of the application has a clear goal.

3. Manufacture (Testing, Improvement, FISHING)

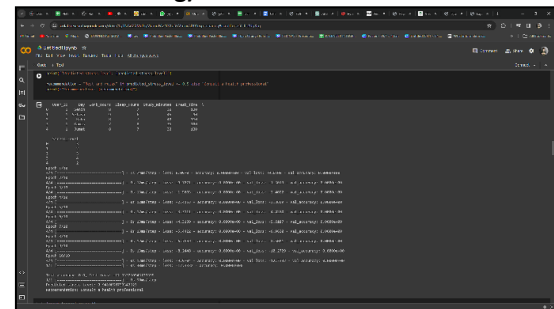


Figure 4. One of the application creation processes

At this stage, making each learning path with several auxiliary tools, for example in machine learning with the Python programming language and several modules and auxiliary libraries, one of which is NumPy. Then this stage consists of several

more stages, namely testing, improvement and finishing.

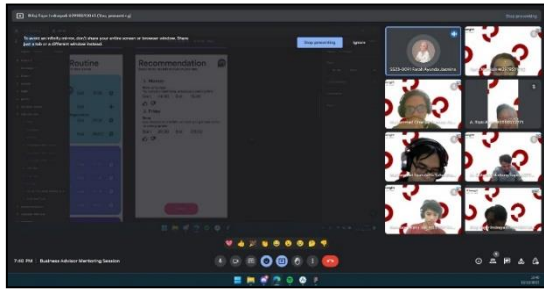


Figure 5. Consultation with advisor

At this stage is testing the application and looking for shortcomings of the application. This process will also make improvements to the code that is still wrong by analyzing whether it is in accordance with the goals and expectations of the creation of this AIANG application in terms of the three different learning paths according to planning. This process also passes the merging of each learning path so that they are interrelated and correlated so that the application runs according to plan.

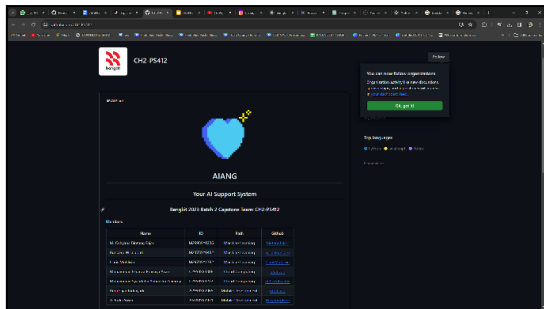


Figure 6. Finishing the application

The last stage of development is to finalize small details such as the components of how to run, the design of the application, compliance with the initial objectives, and the prospects of this application through discussion and discussion of the developer team members.



Figure 7. Discussion

4. Test run

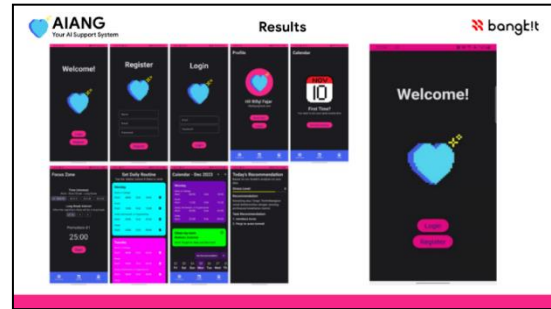


Figure 8. Application testing by the developer team (developers)

The testing of the app by the development team took place over several weeks, where the main focus was on observing the impact of the app on users. The team closely monitored how the app affected time management activities, focus zones, and provided activity recommendations based on the stress level input by the user. During this trial, the team also paid attention to the user's response and experience in using these features. The results of this pilot phase form the basis for further development, ensuring that the AIANG app can provide an effective solution that meets the needs of users' productivity and mental well-being.

5. Socialization

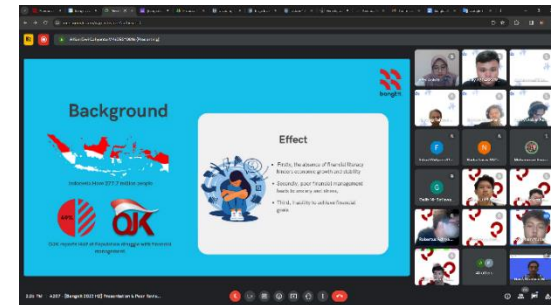


Figure 9. Socialization stage with fellow Bangkit students

On Wednesday, December 27, 2023 at 13.00 - 15.00 a presentation session and review of the application will be held whether it meets the expectations of Bangkit or not. In this session there will also be an assessment from peers about this application whether the prospects for continuing and answering problems or not.

The intended outcomes of this research activity are:

1. The creation of a productivity development application. Through this application, users can set focus time, time management with activities carried out, and can receive activity recommendations based on user activity input interpreted in stress levels.

2. The Bangkit community was helped by this application because previously they were confused about which activities to prioritize first. Through this application, it can be recorded neatly with a simple UI (User Interface) display.

IMPACT OF ACTIVITIES

The impact of the "AIANG" AI Support System Application on the MSIB Student Productivity Bangkit Program can be significant. Here are some potential impacts:

1. **Improved Learning Experience:** AIANG can enhance the learning experience for MSIB students by providing personalized support, such as study tips, resource recommendations, and progress tracking.
2. **Increased Productivity:** By streamlining tasks and providing timely assistance, AIANG can help students manage their time more effectively, leading to increased productivity in their studies and projects.
3. **Enhanced Collaboration:** AIANG can facilitate collaboration among students by providing a platform for sharing resources, discussing ideas, and working together on projects.
4. **Better Performance:** With AIANG's support, students may achieve better academic performance through improved study habits, access to relevant resources, and personalized feedback.
5. **Skill Development:** AIANG can help students develop AI-related skills by providing hands-on experience with AI technologies and tools, aligning with the objectives of the Bangkit Program.

Overall, AIANG has the potential to significantly enhance the learning and productivity of MSIB students participating in the Bangkit Program, contributing to their academic and professional development in the field of AI.

CONCLUSION

Summary

The conclusion presents a summary of the description of the results and discussion, referring to the partner's problem. Based on these two things, describe the supporting and inhibiting factors of the activity.

Advice

It needs to be improved regarding the recommendation model used, and needs to be developed again so that the application is more

interactive with its users. So that this application can be launched either in the form of mobile apps or web to the public so that it can have more impact in the field of community service.

ACKNOWLEDGEMENT

Acknowledgments

In this research, the researchers are grateful to the developers who have discussed and jointly developed applications for Capstone Projects from several universities, namely my Machine Learning Team, M. Cahyana Bintang Fajar from Universitas Pendidikan Indonesia, Kuncoro Wisnu Jati from Universitas Komputer Indonesia. Then the Cloud Computing Team from the National Development University "Veteran" Jakarta, namely Muhammad Ghariza Pranaya Asari and Muhammad Syahdaffa Yuharshu Zainiroy. Then from the Mobile Development Team, namely Rifqi Fajar Indrayadi from the University of Education Indonesia and A. Rizki Awan from Handayani University Makassar. Then on the Advisor team Mr. Ahmad Suaif and Kak Farah Ayunda Jasmina who have provided guidance and from the Bangkit Team as facilitators of this activity. Thank you also to one of our mentors, Nungga Saputra, who has provided a brief overview regarding the implementation and ideas of machine learning.

REFERENCES

- BPS PR. 2021. 2020 Population Census Results. url: <https://demakkab.bps.go.id/news/2021/01/21/67/hasil-sensus-penduduk2020-.html> Accessed on December 25, 2023.
- Harumy, H. F., & Amrul, H. M. (2018). Mobile Application Zagiyan (Fishermen's Digital Network) in Supporting Productivity and Safety, and Fishermen's Health (Case Study of Percut Fishermen Group). *IT Journal Research and Development*, 2(2), 52-61.
- Haryanto, M., Sidauruk, A. C., Hendy, Y. B., Sabailaket, J. A., Purba, D. R., & Handoyo, E. R. (2023). Pengaruh Penggunaan Aplikasi TikTok terhadap Produktivitas Belajar Mahasiswa di Yogyakarta. *KONSTELASI: Konvergensi Teknologi dan Sistem Informasi*, 3(2), 330-341. (Pengaruh buruk aplikasi)
- Hika, G. R., Mahendra, I. B. M., & Astuti, L. G. (2023). Aplikasi Manajemen Stok Bahan dan Deteksi Kualitas Buah untuk Membantu UMKM. *Jurnal Pengabdian Informatika*, 1(3), 735-742.

Muchdarsyah Sinungan. 2003. Human Resources. Revised Edition. Gramedia Pustaka Utama. Jakarta.

Muhammad, F., Usman, A. . A. H. ., & Khairan, A. (2022). Pelatihan machine learning menggunakan bahasa pemrograman python di lingkungan komunitas teknologi informasi di kota Ternate. TRIDARMA: Pengabdian Kepada Masyarakat (PkM), 5(2), 397-402. <https://doi.org/10.35335/abdimas.v5i2.3126>

Mulyatno, M., Pujitresnani, A., Legowo, D. K., Firman, A., & Mahendra, A. R. (2024). Pemberdayaan Siswa Sekolah Menengah Kejuruan Melalui Pelatihan Pengenalan Machine Learning. Jurnal Pengabdian Masyarakat Bangsa, 1(11), 2899–2904. <https://doi.org/10.59837/jpmba.v1i11.628>

Overseas Research Department. 2020. 2019 JETRO Survey on Business Conditions of Japanese Companies in Asia and Oceania. Copyright © 2020 JETRO. All rights reserved

Purba, H. S. H., Sinaga, K., & Siregar, F. A. (2022). Peranan Aplikasi E-Kinerja Dalam Meningkatkan Produktivitas Pegawai Negeri Sipil (PNS) Di Kota Medan (Studi Kasus Pada Badan Kepegawaian Daerah dan Pengembangan Sumber Daya Manusia Pemko Medan). PUBLIK REFORM: JURNAL ADMINISTRASI PUBLIK, 9(1), 26-33. (Pengaruh Baik)

Purnama, R. 2010. Basic J2ME Programming. Gitamedia Publisher. Surabaya.

Sujudi, M. A., & Ginting, B. Buddayah: Jurnal Pendidikan Antropologi.

Syifa'ussurur, M., Husna, N., Mustaqim, M., & Fahmi, L. (2021). Menemukanali Berbagai Alternatif Intervensi dalam Menghadapi Quarter Life Crisis: Sebuah Kajian Literatur [Discovering Various Alternative Intervention Towards Quarter Life Crisis: A Literature Study]. Journal of Contemporary Islamic Counselling, 1(1), 53-64.

Wahyuni, A. T., Sadili, F., Jamilati, N., & Anshori, M. I. (2023). Productivity & Psychology Well Being. Scientific Journal and Student Works, Vol. 1 No. 4 August 2023, 271-294.

Wijayanto, H., Raharja, B. D., & Prabowo, I. A. (2021). Designing Android-Based Mobile Applications to Improve Product Promotion at CV

Putra Nugraha. E-Dimas: Journal of Community Service, 12(3), 473-476.

Zharifa, F. S., Magistravia, E. G. R., Febrianti, R. A., Jati, R. P. K. A., & Maharani, S. D. (2023). Dynamics of Quarter Life Crisis in the Perspective of Kawruh Jiwa Ki Ageng Suryomentaram. Jurnal Filsafat Indonesia, 6(3), 328-336.