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SIMADU: Integrated Application to Support Student Activities in University

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ABSTRACTS

Electronic-based academic information systems such as websites are needed to support student activities. In its development, the academic and lecture information is stored in a website hosting, in order to make it easier to access the information from anywhere as long as it is connected to the internet. However, according to the Higher Education Database (PDDikti) that the website is constrained when accessed via a mobile device (mobile), due to the large amount of data to be accessed where the specifications of mobile devices are sometimes limited. So it is necessary to develop an application to access academic information based on mobile devices or smartphones. This study uses the ADDIE model method. Based on the results of a survey of Universitas Pendidikan Indonesia students, 43.6% of students were dissatisfied with the website-based academic information system. Students feel ineffective in using too many websites so that it is confusing and troublesome for students to access the information they need. So to simplify the above, it is necessary to conduct research to utilize information and communication technology in supporting the smooth process of distributing academic and lecture information in the form of a tool in the form of an application program called SIMADU.

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1. INTRODUCTION

Currently, internet service media is starting to be used in several aspects, including in the field of education. Such as to support academic information system services in various tertiary institutions (Al-Rahmi et al., 2021; Riandi & Hidayatullah, 2021; Reyes-Chua et al., 2020). Higher Education is one of the public sectors that has taken advantage of developments in information technology through the application of Academic Information Systems that have been specifically designed to meet the needs of Higher Education who want computerised education services to improve performance, service quality, competitiveness and the quality of human resources produced (Al Rawashdeh et al., 2021; Castro & Tumibay, 2021; Shahzad et al., 2021; Qurotul et al., 2020). Access to the implemented academic information system is still not flexible because it can only be done via a computer connected to the internet network. For this reason, it is necessary to design an academic information system application that is able to meet the flexibility needs of users to be able to access it more easily and quickly (Niknejad et al., 2019; Novak et al., 2021).

According to the Association of Indonesian Internet Service Providers (APJII) for 2021-2022, the use of the internet in the education sector is 87.3%. The use of information technology in tertiary institutions includes the distribution of information such as information about grades, class schedules, information on campus activities and so on. Based on data from the Ministry of Research Technology and Higher Education (Kemenristekdikti) that the quality of higher education in Indonesia is currently not in ideal conditions, one way to meet national standards for higher education is to use an electronic-based academic information system.

The four goals and benefits to be achieved in this study are to design an academic information system application on an Android smartphone device. Furthermore, integrating web-based academic information systems on Android smartphone devices, then conducting application design and functional testing, and finally applying cloud computing for academic information systems. There are three expected benefits from the results of this study, namely accelerating and facilitating the student administration process. The second benefit is to increase value added and comparative advantage. In order to welcome the global information era and to continue to exist in the increasingly fierce competition in the world of education, every educational institution needs to have added value and strong competitiveness. Then the last benefit is to make it easier for the campus community to use smartphone mobile phones to access the Academic Information System more flexibly, from anywhere and at any time, as long as there is a network for the mobile phone device (Inupakutika et al., 2020; Ali, 2022; Budoya et al., 2019).

2. METHODS

In this study, there was primary data obtained by means of distributing questionnaires and observations or direct observations in the field and secondary data obtained from literature studies from a number of relevant references or literature. This research uses the ADDIE model method which involves the stages of model development with five development steps/phases including: Analysis, Design, Development, Implementation and Evaluations (Simatupang & Napitupulu, 2023; Amaliyah, 2023).

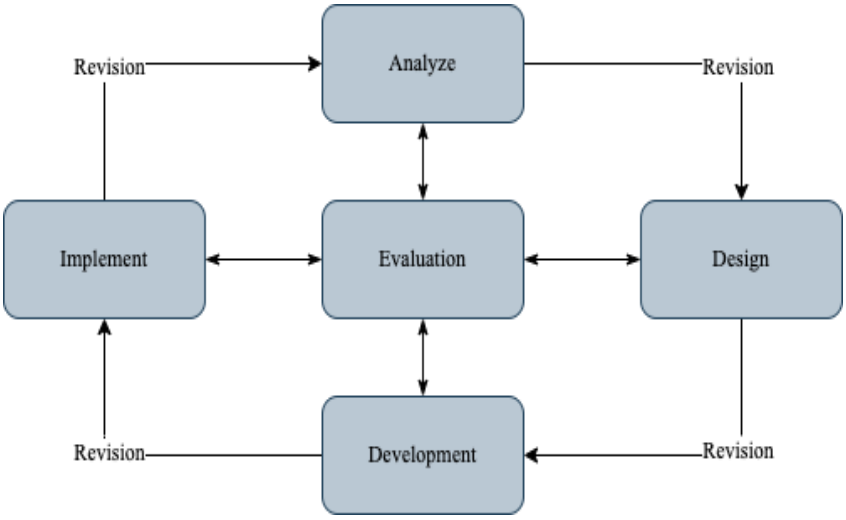

Figure 1. ADDIE model

3. RESULTS AND DISCUSSION

The results of an online survey show that many UPI students are still dissatisfied with the academic system at the Universitas Pendidikan Indonesia

Are you satisfied with the academic service system at UPI ?

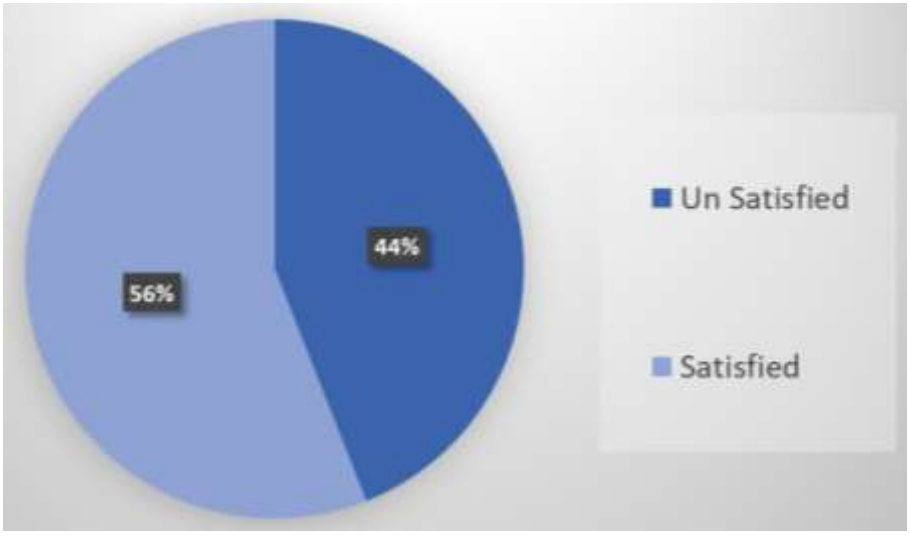

Figure 2. Satisfaction of respondents with the existing academic system at Universitas Pendidikan Indonesia

Based on the results of questionnaires and direct observations within the Indonesian University of Education, it was found that students felt restless in accessing academic information with a percentage of 44% by using different websites consisting of SIAK (Academic Information System), SPOT (Integrated Online Learning System), SPADA (Online Learning System) and SIAS (Indonesian University of Education Session Submission Administration Information System). This makes students confused and feel complicated in using it. The use of the website sometimes causes errors so that students find it very difficult to find information on academic services. Students still have to be active to get information related to activities on campus.

What do you think if all learning systems and academic service systems are diverted into one application?

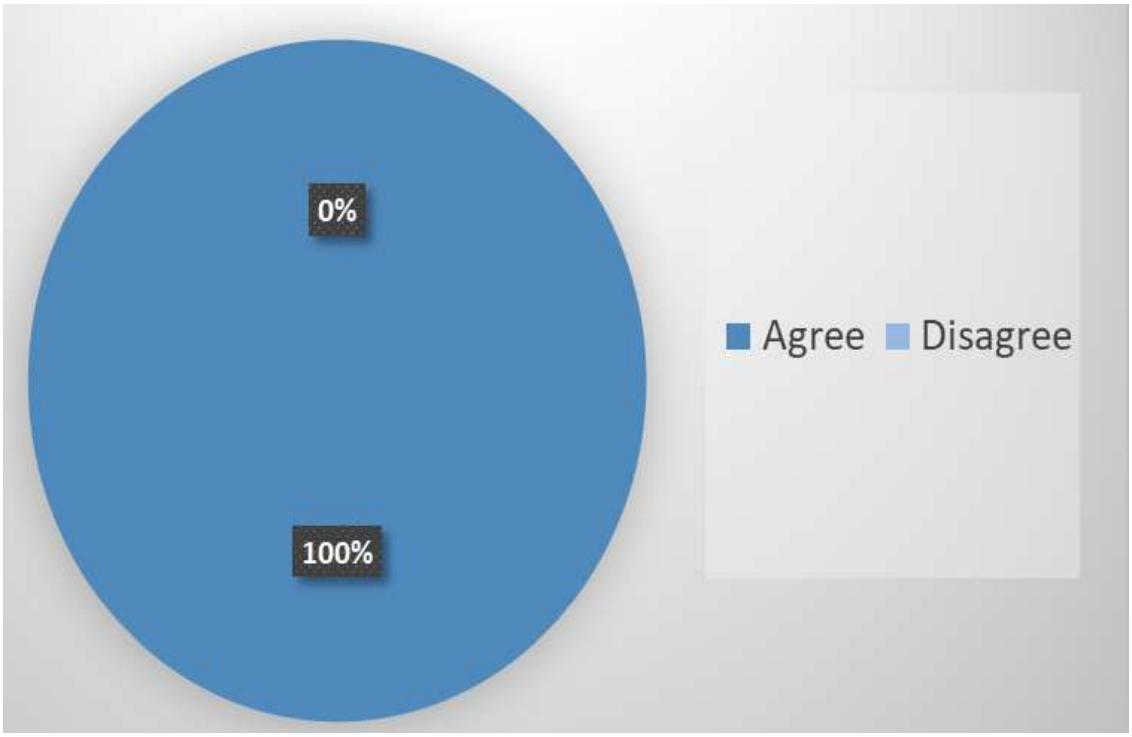

Figure 3. Respondents opinions regarding the combination of learning systems and academic service systems

With these findings based on a survey 100% of students agree that there is an application that combines these websites into one called SIMADU with additional features that make it easier to use. In addition to saving time and effort, all parties, be it lecturers, students, administrative staff, finance and other departments, can obtain data that is always updated in real time without having to open a different website. There are several development opportunities that this system has, namely the rapidly growing Android and IOS market, marked by the development of Artificial intelligence (AI) in Indonesia in 2021. With a CAGR (Compound annual growth rate) that reaches 70%, making applications on Android/IOS devices will continue to develop. While the second opportunity is that it can be developed easily and effectively. With the existence of web 3.0 technology in Indonesia, it can improve the welfare of education in Indonesia.

4. CONCLUSION

Based on survey results and literature studies, the purpose of the SIMADU application is to:

1. An application-based academic information system can be implemented, especially at the Universitas Pendidikan Indonesia called SIMADU.
2. This system is made so that the process of accessing information becomes more efficient and effective by students via mobile smartphones.
3. Maximizing campus information search aimed at students.
4. Improving e-learning services from campus to students.

The SIMADU application uses an object-oriented programming paradigm. The concept of development is Object Oriented Analysis (OOA) and Object Oriented Design (OOD).

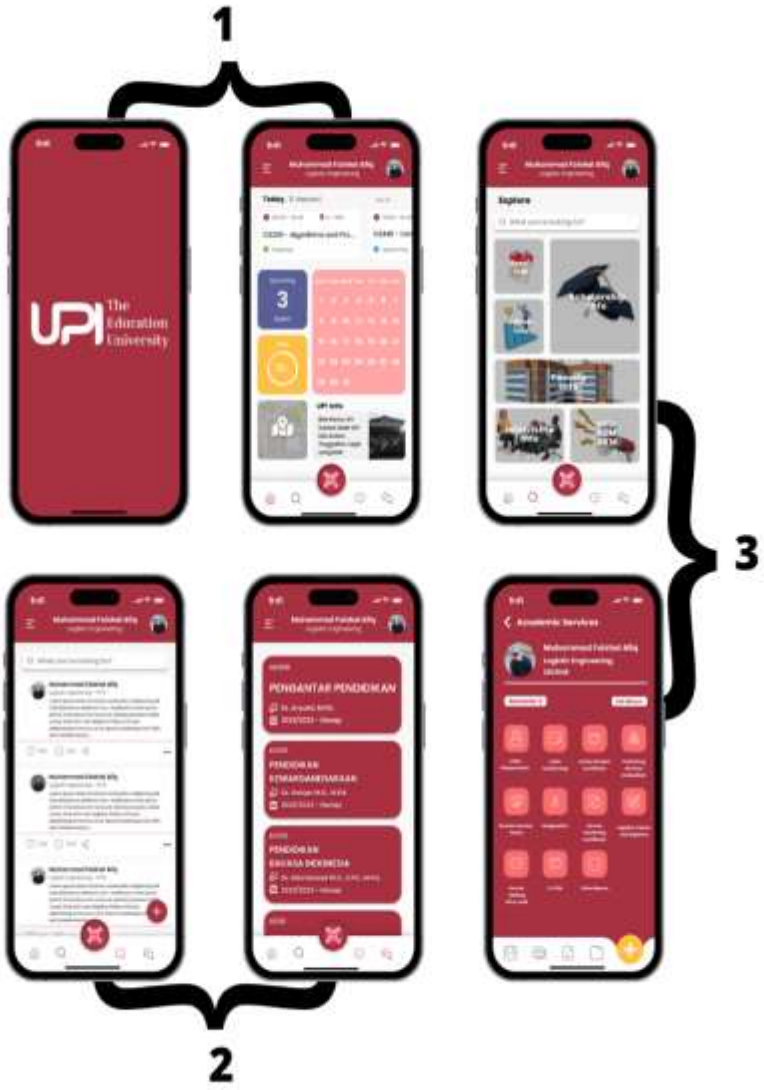

Figure 4. The menu of SIMADU

As for the menu menus that are designed are:

1. Loading screen and home which consists of login features, lecture schedules, unfinished assignments equipped with task reminders, academic and assignment calendars, campus maps, UPI info, and attendance QR scans that make it easier for students to carry out lectures.
2. Hello UPI and Study Room consist of aspirational features that can be used by the academic community as well as study rooms containing various subjects equipped with discussion groups with lecturers.

3. Explore and Academic Services consist of event info features, career info, scholarship info, faculty info, internship info, BEM UKM info and academic info features which consist of letter dispensation, letter scholarship, active student certificate, publishing service, session service thesis, resignation , service publishing certificate, legalize values and diploma service marketing UPI-email, and E-KTM.

The use of the SIMADU application is expected to simplify and increase student efficiency in accessing various different websites consisting of SIAK, SPOT, SPADA and SIAS. With the SIMADU application, it allows students, lecturers and interested stakeholders to access information through devices that are commonly used by users. The convenience provided by the use of mobile devices is the ease of access that can be done anywhere.

5. REFERENCES

Al-Rahmi, A. M., Shamsuddin, A., Alturki, U., Aldraiweesh, A., Yusof, F. M., Al-Rahmi, W. M., & Aljeraiwi, A. A. (2021). The influence of information system success and technology acceptance model on social media factors in education. *Sustainability*, *13*(14), 7770.

Al Rawashdeh, A. Z., Mohammed, E. Y., Al Arab, A. R., Alara, M., & Al-Rawashdeh, B. (2021). Advantages and disadvantages of using e-learning in university education: Analyzing students' perspectives. *Electronic Journal of E-learning*, *19*(3), 107-117.

Ali, A., Maghawry, H. A., & Badr, N. (2022). Performance testing as a service using cloud computing environment: A survey. *Journal of Software: Evolution and Process*, *34*(12), e2492.

Amaliyah, N. (2023). Development of Technological, Pedagogical and Content Knowledge Based Learning Media. *JTP-Jurnal Teknologi Pendidikan*, *25*(1), 107-116.

Apriani, D., Ramadhan, T., & Astriyani, E. (2022). Kerja lapangan berbasis website untuk sistem informasi manajemen praktek (studi sistem informasi program studi kasus merdeka belajar kampus merdeka (mbkm) universitas raharja. *ADI Bisnis Digital Interdisiplin Jurnal*, *3*(1), 24-29.

Budoya, C., Kissaka, M., & Mtebe, J. (2019). Instructional design enabled agile method using ADDIE model and feature driven development method. *International Journal of Education and Development using ICT*, *15*(1).

Castro, M. D. B., & Tumibay, G. M. (2021). A literature review: efficacy of online learning courses for higher education institution using meta-analysis. *Education and Information Technologies*, *26*, 1367-1385.

Guntoro, G., Costaner, L., & Lisnawita, L. (2020). Aplikasi chatbot untuk layanan informasi dan akademik kampus berbasis artificial intelligence markup language (AIML). *Digital Zone: Jurnal Teknologi Informasi Dan Komunikasi*, *11*(2), 291-300.

Indra, E., & Rizky, A. D. (2020). Sistem informasi manajemen kampus dengan pengembangan model smart campus: (studi kasus di universitas prima indonesia). *Jurnal Ilmu Komputer dan Sistem Informasi (JIKOMSI)*, *3*(2), 15-25.

Inupakutika, D., Kaghyan, S., Akopian, D., Chalela, P., & Ramirez, A. G. (2020). Facilitating the development of cross-platform mHealth applications for chronic supportive care and a case study. *Journal of biomedical informatics*, *105*, 103420.

Karsana, I. W. W. (2019). Rancang bangun sistem informasi nilai akademik berbasis sms gateway pada universitas dhyana pura. *SISTEMASI*, *8*(1), 114-125.

Manuhutu, M., & Wattimena, J. (2019). Perancangan sistem informasi konsultasi akademik berbasis website. *J. Sist. Inf. Bisnis*, *9*(2), 149.

Megawaty, D. A., & Putra, M. E. (2020). Aplikasi monitoring aktivitas akademik mahasiswa program studi informatika universitas xyz berbasis android. *Jurnal Informatika Dan Rekayasa Perangkat Lunak*, *1*(1), 65-74.

Muhyidin, M. A., Sulhan, M. A., & Sevtiana, A. (2020). Perancangan ui/ux aplikasi my cic layanan informasi akademik mahasiswa menggunakan aplikasi figma. *Jurnal Digit*, *10*(2), 208-219.

Nasution, D. S., & Rafdhi, F. (2020). Sistem informasi kegiatan penunjang akademik mahasiswa berbasis desktop. *Jurnal CoSciTech (Computer Science and Information Technology)*, *1*(2), 65-75.

Niknejad, N., Ismail, W., Ghani, I., Nazari, B., & Bahari, M. (2020). Understanding Service-Oriented Architecture (SOA): A systematic literature review and directions for further investigation. *Information Systems*, *91*, 101491.

Novak, A., Bennett, D., & Kliestik, T. (2021). Product decision-making information systems, real-time sensor networks, and artificial intelligence-driven big data analytics in sustainable Industry 4.0. *Economics, Management and Financial Markets*, *16*(2), 62-72.

Putra, P. B. A. A., Pranatawijaya, V. H., Christian, E., & Widiatry, W. (2022). Implemetasi aplikasi mobile pengenalan kampus pada masa pandemi Covid-19. *Jurnal Teknologi Informasi: Jurnal Keilmuan dan Aplikasi Bidang Teknik Informatika*, *16*(2), 195-200.

Qurotul Aini, Q. A., Mukti Budiarto, M. B., POH Putra, P. O. H., & Untung Rahardja, U. R. (2020). Exploring e-learning challenges during the global COVID-19 pandemic: A review. *Jurnal Sistem Informasi (Journal of Information System)*, *16*(2), 47-65.

Riandi, M. H., Respati, H., & Hidayatullah, S. (2021). Conceptual model of user satisfaction as mediator of e-learning services and system quality on students' individual performance. *International Journal of Research in Engineering, Science and Management*, *4*(1), 60-65.

Rizki, M., Almi, A. T., Kusumanto, I., Anwardi, A., & Silvia, S. (2021). Aplikasi metode kano dalam menganalisis sistem pelayanan online akademik fst uin suska riau pada masa pandemi Covid-19. *SITEKIN: Jurnal Sains, Teknologi dan Industri*, *18*(2), 180-187.

Reyes-Chua, E., Sibbaluca, B. G., Miranda, R. D., Palmario, G. B., Moreno, R. P., & Solon, J. P. T. (2020). The status of the implementation of the e-learning classroom in selected higher education institutions in region IV-A amidst the covid-19 crisis. *Journal of Critical Reviews*, *7*(11), 253-258.

Sari, I. P., Kartina, A. H., Pratiwi, A. M., Oktariana, F., Nasrulloh, M. F., & Zain, S. A. (2020). Implementasi metode pendekatan design thinking dalam pembuatan aplikasi happy class di kampus UPI Cibiru. *Edsence: Jurnal Pendidikan Multimedia*, *2*(1), 45-55.

Shahzad, A., Hassan, R., Aremu, A. Y., Hussain, A., & Lodhi, R. N. (2021). Effects of COVID-19 in E-learning on higher education institution students: the group comparison between male and female. *Quality & quantity*, *55*, 805-826.

Simatupang, N. A., & Napitupulu, S. (2023). Development of Interactive Learning Media Based on Articulate Storyline 3 Theme 5 My Heroes on Student Learning Interest Grade IV Elementary School. *International Journal of Educational Research Excellence (IJERE)*, *2*(2), 155-165.