



UNIVERSITAS BHAYANGKARA JAKARTA RAYA FAKULTAS ILMU KOMPUTER

Kampus I: Jl. Harsono RM No. 67, Ragunan, Pasar Minggu, Jakarta Selatan, 12550
Telepon: (021) 27808121 – 27808882
Kampus II: Jl. Raya Perjuangan, Marga Mulya, Bekasi Utara, Jawa Barat, 17142
Telepon: (021) 88955882, Fax.: (021) 88955871
Web: fasilkom.ubharajaya.ac.id, E-mail: fasilkom@ubharajaya.ac.id

SURAT TUGAS

Nomor: ST/1098/IX/2023/FASILKOM-UBJ

Pertimbangan : Dalam rangka mewujudkan Tri Dharma Perguruan Tinggi untuk Dosen di Universitas Bhayangkara Jakarta Raya maka dihimbau untuk melakukan penelitian.

Dasar : 1. Kalender Akademik Universitas Bhayangkara Jakarta Raya Tahun Akademik 2023/2024;
2. Rencana Kerja dan Anggaran Pembelanjaan Universitas Bhayangkara Jakarta Raya Tahun 2023.

DITUGASKAN

Kepada : Personil yang namanya tercantum dalam Surat Tugas ini.

NO.	NAMA	NIDN	JABATAN	KETERANGAN
1.	Dr. Rakhmi Khalida, S.T., M.M.S.I.	0304099201	Dosen Tetap Prodi Informatika	Sebagai Penulis Pertama
2.	R. Wisnu Prio Pamungkas, S.Kom., M.Kom.	0321127201	Dosen Tetap Prodi Informatika	Sebagai Penulis Kedua

Untuk : 1. Membuat Artikel Ilmiah dengan judul "**Enhancing Usability of the Academic Information System at Bhayangkara University: A Design Thinking and System Usability Approach**" pada media Jurnal Penelitian Ilmu Komputer, Sistem *Embedded and Logic* (PIKSEL), Vol. 11, No. 2, September 2023, Hal. 373-382, p-ISSN: 2303-3304, e-ISSN: 2620-3553.
2. Melaksanakan tugas ini dengan penuh tanggung jawab.

Jakarta, 11 September 2023
DEKAN FAKULTAS ILMU KOMPUTER

Dr. Dra. Tyastuti Sri Lestari, M.M.
NIP. 1408206

p-ISSN: 2305-3304
e-ISSN: 2620-3553

Vol. 11 No. 2 September 2023

66563666



PIKSEL

Penelitian Ilmu Komputer
Sistem *Embedded & Logic*



*Adding Values in Medical, Business,
Network, Education, e-Gov through
Computer Science*

Department of Computer Engineering
Universitas Islam "45" Bekasi

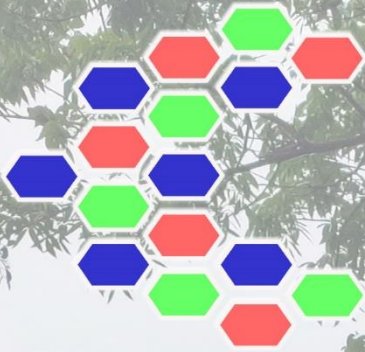


PIKSEL

**Penelitian Ilmu Komputer
Sistem *Embedded & Logic***

Enhancing UI/UX of The Smart Village System Website Using User-Centered Design Methods <i>Alek Wijaya, Fauzan Azhiman</i>	207-220
Governance of Online Electronic Patient Medical Records Distribution <i>Alzeta Rosdyana, Kamila Najmil Khaira, Yuda Syahidin, Yuyun Yunengsih</i>	221-232
Expanding Promotion and Marketing of Village Products Through Smart Village System <i>Muhammad Raihan, Edi Surya Negara</i>	233-240
Decision Support System for Addressing Demotivated Students: A Comparative Analysis of SAW and TOPSIS Methods <i>Reza Ariftiarno, Gandung Triyono, Ery Rinaldi</i>	241-252
Application of Holographic Technology in Education <i>Suzanna</i>	253-266
Load Balancing on Mikrotik at Karang Jaya Health Center Using NTH Method <i>Agil Homsy Syahrani, Boy Yuliadi</i>	267-282
Wireless Network Bandwidth Quality Measurement Using QoS Standard Tiphon <i>Ahmad Basri, Boy Yuliadi</i>	283-292
Design Thinking's Role in Enhancing User Experience on Fashion Campus with Attractive UI/UX Design <i>Rasmila, M. Hafizin Syahid Walillah</i>	293-308
Web-Based Document Workflow Management Information System <i>Emny Harna Yossy, Yohan Aris Darmawan</i>	309-322
Container Infrastructure on Laravel to Improve Online Shop <i>Sucianna Ghadati Rabiha, Achmad Fadhitya Muharram, Fahmi Anwar Kusuma, Hendrawan Sulistya, Eduard Pangestu Wonohardjo, Emny Harna Yossy</i>	323-334
Enhancing Permit Status Checking for the Integrated Public Service Information and Reporting System Application <i>Dwi Listriana Kusumastuti, Farhan Mubarak, Rehan Choirul Rohily, Sahtia Murti, Yulius Denny Prabowo, Emny Harna Yossy</i>	335-348

***Adding Values in Medical, Business,
Network, Education, e-Gov through
Computer Science***



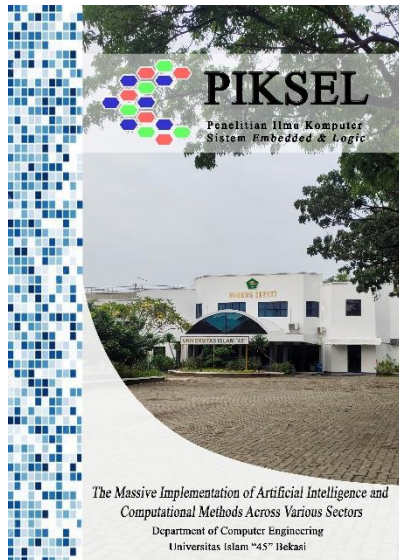
PIKSEL

**Penelitian Ilmu Komputer
Sistem *Embedded & Logic***

- Revolutionizing Waste Management: The Garbage Bank Solution and Its IT-Driven Implementation for Eco-Friendly Hygiene**
Kaesar Azra Putra Zeva, MS Hasibuan, Firmansyah, Sutedi 349-360
- Getfix: Revolutionizing Electronic Equipment Repair through a User-Centric Mobile Application**
Dinda Lusita Fristiani Anissa, Ria Andryani..... 361-372
- Enhancing Usability of the Academic Information System at Bhayangkara University: A Design Thinking and System Usability Approach**
Rakhmi Khalida, R. Wisnu Prio Pamungkas 373-382
- Security System Exploitation on Domains and Subdomains of UIN Syarif Hidayatullah Jakarta**
Thoyyibah. T, Wasis Haryono, Tomi Hardi..... 383-392
- Comparison of Federated and Centralized Learning for Image Classification**
Farhanna Mar'i, Ahmad Afif Supianto, Fitra A. Bachtiar..... 393-400
- D Sentiment Analysis of On-Demand Ride-Hailing Systems using Support Vector Machine and Naïve Bayes**
Bhagaskara Farhan Wiguna, Herlawati Herlawati, Ajif Yunizar Pratama Yusuf..... 401-414
- Effectiveness of Using MIT App Inventor as an Android-Based Learning Media**
Miftahul Jannah, Khairunnisa, Teguh Ansyor Lorosae, Sahrul Ramadhan 415-424
- Fuzzy Time Series and Data Visualization for Forecasting Sales of Grocery Ingredients**
Rahmat Zulfikar Nasution, Sriani..... 425-434
- Classifying Half-Unemployment Levels in Indonesian Provinces: A K-Means Approach for Informed Policy Decisions**
Suhardjono, Hari Sugiarto, Dewi Yuliandari, Adjat Sudradjat, Luthfia Rohimah 435-446
- Machine Learning-Based Classification for Scholarship Selection**
Asriyanik, Agung Pambudi 447-460
- Optimization of Village Budget Plan Selection Based on Priorities Using Method Promethee and Borda**
Dwi Yanti Laily, Muhammad Dedi Irawan..... 461-474

***Adding Values in Medical, Business,
Network, Education, e-Gov through
Computer Science***

p-ISSN: 2303-3304
e-ISSN: 2620-3553
Vol. 11 No. 2
September 2023



PIKSEL status is accredited by the Directorate General of Research Strengthening and Development No. 225/E/KPT/2022 with Indonesian Scientific Index (SINTA) journal-level of S3, starting from Volume 10 (1) 2022 to Volume 14 (2) 2026.



First publish in 2013.
Available online since 2018.

Sinta 5 SK No.28/E/KPT/2019



Sinta 3 SK No.225/E/KPT/2022



From Editor-in-Chief

السَّلَامُ عَلَيْكُمْ وَرَحْمَةُ اللَّهِ وَبَرَكَاتُهُ

Best wishes to all the members of Editorial Board, Reviewers Panel, Authors and Readers of PIKSEL for a very happy, and stay healthy.



Rahmadya, Ph.D.
Editor-in-Chief

Global conditions and current local activities need a help of computer science. This edition of articles extensively explores computer science methods in fields such as education, business, network, medical, and local government.

This edition introduces the use computer science to add values in most of people's activities. The implementation of interesting GUI improves the user-friendly aspect of the system as well as in business should cover the user needs. The speed, efficiency, accuracy, and other performance indicators on medical, smart village, education, and network security can be handled by the computer science method.

Several other computer science method studies are presented in this volume, especially on machine learning, network security, mobile technology, and other related studies. This issues for the first time include the environmental discussion on waste management that has become main problems in every city in Indonesia.

Publisher: LPPM Universitas Islam 45

Office:

Fakultas Teknik Universitas Islam 45

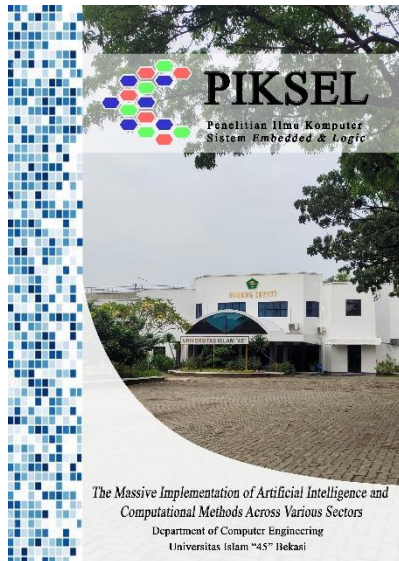
Jl. Cut Meutia No. 83 Margahayu Kecamatan Bekasi Timur Kota Bekasi Jawa Barat Indonesia 17113

Telp. (021) 8802015

e-mail: piksel@unsimabekasi.ac.id

website: <http://jurnal.unismabekasi.ac.id/index.php/piksel>

p-ISSN: 2303-3304
e-ISSN: 2620-3553
Vol. 11 No. 2
September 2023



PIKSEL status is accredited by the Directorate General of Research Strengthening and Development No. 225/E/KPT/2022 with Indonesian Scientific Index (SINTA) journal-level of S3, starting from Volume 10 (1) 2022 to Volume 14 (2) 2026.

Editor Board Journal PIKSEL

EDITOR IN CHIEF

Rahmadya Trias Handayanto, S.T., M.Kom., Ph.D
(Scopus ID: [55014574400](#), Universitas Islam 45)

DEPUTY EDITOR IN CHIEF

Inna Ekawati, S.T., MMSI
(Scopus ID: [57221501629](#), Universitas Islam 45)

BOARD OF EDITORS

Maimunah, S.Si., M.Kom
(Scopus ID: [57215528459](#), Universitas Muhammadiyah Magelang)

Deshinta Arrova Dewi
(Scopus ID: [55012068200](#), INTI International University, Malaysia)

Retno Nugroho Whidhiasih, S.Kom., M.Kom
(Scopus ID: [55613478500](#), Universitas Islam 45)

Endang Retnoningsih, S.Kom., M.Kom
(Scopus ID: [57215526966](#), Institut Bisnis Muhammadiyah Bekasi)

Fata Nidaul Khasanah, S.Kom., M.Eng
(Scopus ID: [57189353040](#), Universitas Bhayangkara Jakarta Raya)

Yopi Handrianto, S.Kom., M.Kom
(Scopus ID: [57215294416](#), Universitas Bina Sarana Informatika)

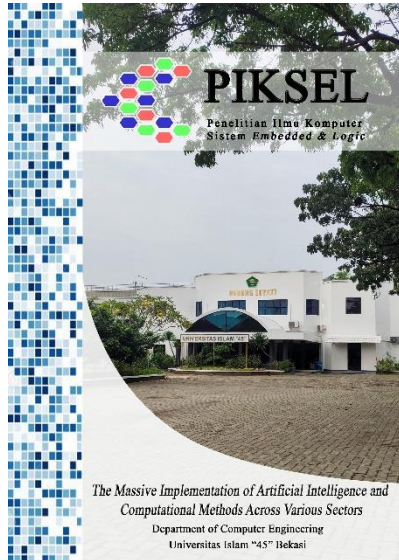
Richard, S.Kom., M.M.
(Scopus ID: [56638189100](#), Universitas Bina Nusantara)

Ben Rahman, B.Sc., S.Kom., M.MSI.
(Scopus ID: [57215525641](#), Universitas Nasional)

TECHNICAL EDITOR

Irwan Sukandar
Muryanti
Sumarlin
Deni Herdiana
Puput Putrianika

p-ISSN: 2303-3304
e-ISSN: 2620-3553
Vol. 11 No. 2
September 2023



PIKSEL status is accredited by the Directorate General of Research Strengthening and Development No. 225/E/KPT/2022 with Indonesian Scientific Index (SINTA) journal-level of S3, starting from Volume 10 (1) 2022 to Volume 14 (2) 2026.

REVIEWERS

Dini Oktarina Dwi Handayani.

(Scopus ID: [49663073000](#), International Islamic University, Malaysia)

Augustinus Bayu Primawan, D.Tech.Sc.

(Scopus ID: [57204114771](#), Universitas Sanata Dharma, Yogyakarta, Indonesia)

Petrus Sutiyasadi, S.T., M.Eng., D.Eng.

(Scopus ID: [36968351900](#), Politeknik Mekatronika Sanata Dharma, Yogyakarta, Indonesia)

Cahyono Sigit Pramudyo, S.T., M.T., D.Eng.

(Scopus ID: [57195353262](#), Universitas Islam Negeri Sunan Kalijaga, Yogyakarta, Indonesia)

Taqwa Hariguna, S.Kom., M.Kom., Ph.D.

(Scopus ID: [57193771775](#), Universitas AMIKOM Purwokerto, Purwokerto, Indonesia)

Henriyadi, S.Si., M.Sc.

(Litbang Departemen Pertanian, Jakarta, Indonesia)

Herlawati, S.Si., M.M., M.Kom

(Scopus ID: [55613443500](#), Universitas Bhayangkara Jakarta Raya)

Eni Heni Hermaliani, S.Kom., M.M., M.Kom

(Scopus ID: [57200210484](#), Universitas Bina Sarana Informatika)

Malikus Sumadyo., S.Si., M.T.

(Scopus ID: [57193833463](#), Universitas Islam 45)

Dadan Irwan, S.T., M.Kom.

(Scopus ID: [55613449700](#), Universitas Islam 45)

Haryono, S.Kom., M.M.S.I.

(Scopus ID: [55015952700](#), Universitas Islam 45)

Seta Samsiana, S.T., M.T.

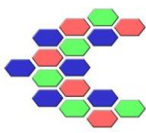
(Scopus ID: [56532498500](#), Universitas Islam 45)

Hendra Supendar, S.Kom., M.Kom

(Scopus ID: [57210461454](#), Universitas Bina Sarana Informatika, Indonesia)

Aji Akbar Firdaus, S.T., M.T

(Scopus ID: [56596623100](#), Universitas Airlangga, Surabaya, Indonesia)



Enhancing Usability of the Academic Information System at Bhayangkara University: A Design Thinking and System Usability Approach

Rakhmi Khalida ^{1,*}, R. Wisnu Prio Pamungkas ¹

* Correspondence Author: e-mail: rakhmi.khalida@dsn.ubharajaya.ac.id

¹ Informatics; Universitas Bhayangkara Jakarta Raya; Jl. Raya Perjuangan No. 81 Margamulya, Bekasi Utara, Bekasi, Indonesia; telp. (021) 88955882; e-mail: rakhmi.khalida@dsn.ubharajaya.ac.id wisnu.prio@dsn.ubharajaya.ac.id

Submitted : **03/08/2023**
Revised : **24/08/2023**
Accepted : **31/08/2023**
Published : **30/09/2023**

Abstract

Bhayangkara University implements an information system to assist its academic process, namely SIA (Academic Information System). The high level of usability in SIA affects the smooth running of the academic process. This research uses a combination of design thinking and system usability scale methods as an approach to increase usability in SIA applications. The results show that the SIA application has a high usability value with a B rating scale and the good acceptable category is pleasant for users. Recommendations for improvements based on the method used are increasing server capacity so that SIA can work more relevantly, and effectively, and can use last a long time.

Keywords: *Academic Information System, Design, Usability*

1. Introduction

Academic Information System is one application of information systems in educational institutions (Tata Sutabri, 2014). Academic Information System is a software application used to manage various information and processes related to academic activities. The main goal of an Academic Information System is to automate and simplify academic administration, increase efficiency, and improve user experience (Sulistiani Ino et al., 2018).

Bhayangkara University implements an academic information system called the Academic Information System (SIA). The menus and features contained in the SIA include filling out the Study Plan Card (KRS), viewing class schedules, viewing study results cards and grade transcripts, printing exam cards, generating academic reports listing grades, registering lecturer and student attendance, and evaluating academic performance and presenting reports valuable for management and decision making.

An Academic Information System greatly influences the process of running academic activities. Academic Information Systems must be able to meet the needs of students, lecturers, and stakeholders (Belluano Poetri Lestari Lokapitasari et al., 2021). High usability values in Academic Information Systems are needed. An information system can be said to be successful, one of which is if the information system can be used easily and can meet user needs (Widiatmoko et al., 2015).

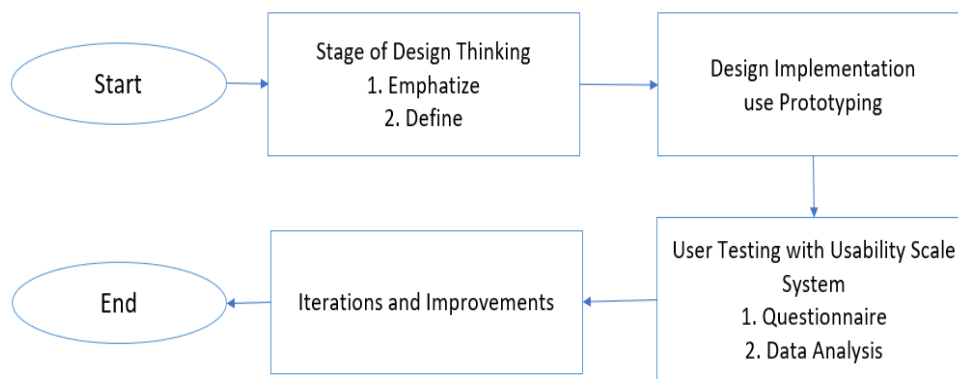
The Academic Information System that is already running at Bhayangkara University needs to be analyzed and evaluated so that it has benefits, is acceptable to users, and can last a long time in its use. The thinking design approach consisting of empathize, define, ideate, prototype, and the test is used to transform user needs into UI and UX interface designs for SIA. The System Usability Scale method is used to measure usability levels, identify problems, and provide recommendations for SIA improvements.

2. Research Method

This research was conducted at Bhayangkara University, Jakarta Raya. The object of research is the SIA application which is commonly used by students and lecturers with a total population is 6534. The type of research used is mixed method research using the design thinking method from a qualitative point of view and the system usability scale method from a quantitative point of view. Based on the mixed method used, it takes respondents who can represent. Respondents were taken by random sampling technique and the number was calculated using the Slovin formula with an error tolerance of 0.05. The number of samples obtained based on the calculation results is 377.

The design thinking method is used to transform user needs into the form of UI and UX SIA interface designs (Kurnianto et al., 2022). The System Usability Scale method measures usability levels, identifies problems, and provides recommendations for SIA improvements (Anggraini Wresni et al., 2020). The research method can be seen in Figure 1.

Design thinking consists of four stages: empathize, define, prototype, and test. This step is sequentially and then iterated (Ilham et al., 2021). The combination of methods used in this study means that the design thinking stages are not carried out sequentially. The usability scale system is embedded between the design thinking stages to complement the method.



Source: Research Result (2023)

Figure 1. Research Method

3. Results and Analysis

3.1. Empathy Process

This stage provides data results in the form of habits, needs, and concerns of users. Data was obtained using social engineering techniques. The social engineering technique in this study does not have a negative intention but is used for the purpose of gathering information from SIA users without having to make the users feel disturbed, cornered, or threatened (Aulia et al., 2023). The results of the empathy process provide the data described in Table 1.

Table 1. Results of the Empathy Process

No.	User	Complaints and Requirements on the System
1	Lecturer	Lecturer administration for Lecturer Workload (BKD)
2	Student	Failure when filling out KRS; Inconsistent class schedule; Digital present

Source: Research Result (2023)

3.2. Proses Define

At this stage what is done is to transform empathy process data into the form of problem identification. The approach taken at this stage is "How Might We". This approach highlights the creative side of the design process and innovation used to formulate questions or challenges that can inspire creative thinking and new solutions. This method is often used in brainstorming sessions and design thinking methods to generate innovative ideas. The way "How Might We" works is by turning a problem or

challenge at hand into an open-ended question that challenges and inspires (Li et al., 2019). The results of the defined process with How Might We are described in Table 2.

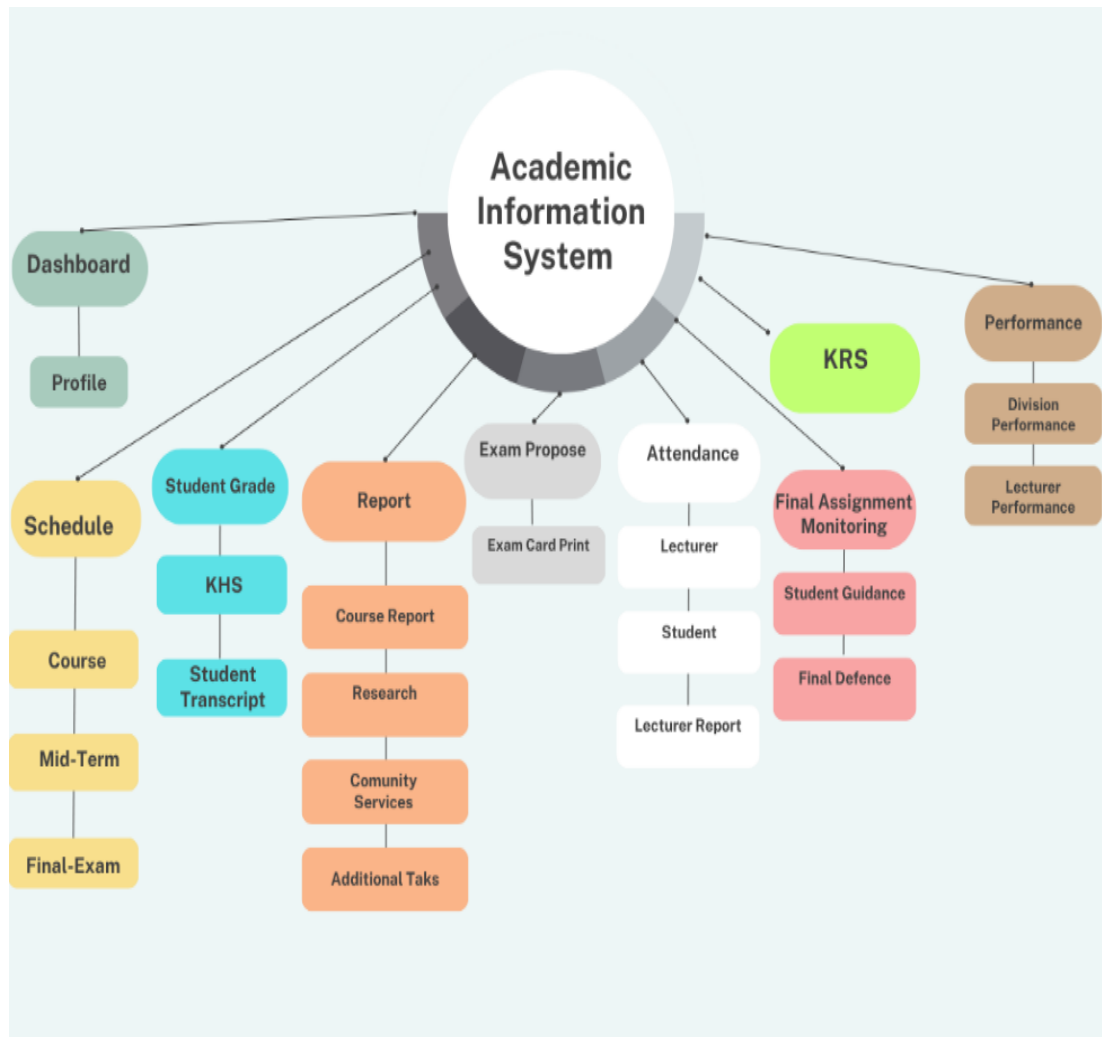
Table 2. Results of the Define Process

No.	Problem	Insight	How might we
1	Users want an application that can make it easier to complete the lecturer BKD requirements	How is the application that makes it easy to complete the lecturer's BKD requirements?	Create features and design a database of lecturer BKD requirements
2	Users want an application that can facilitate the process of filling in student KRS	How is the application that facilitates the KRS filling process?	Create a user-friendly KRS charging feature
3	Users want the convenience feature of attendance in integrated applications between students with the number of teaching realizations and lecturer attendance	How can data on teaching realization, and student and lecturer attendance be integrated with each other?	Create presence features each course in real time between students and lecturers

Source: Research Result (2023)

3.3. Prototype

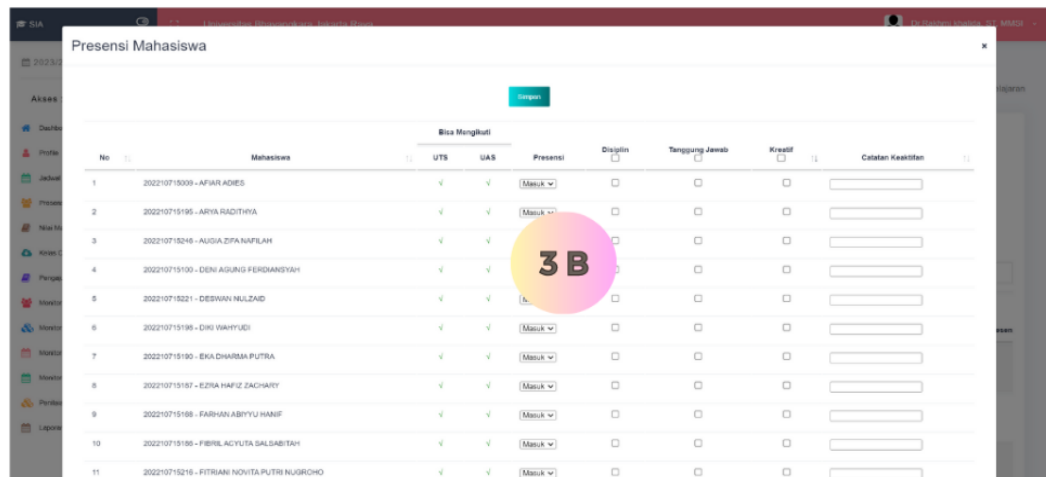
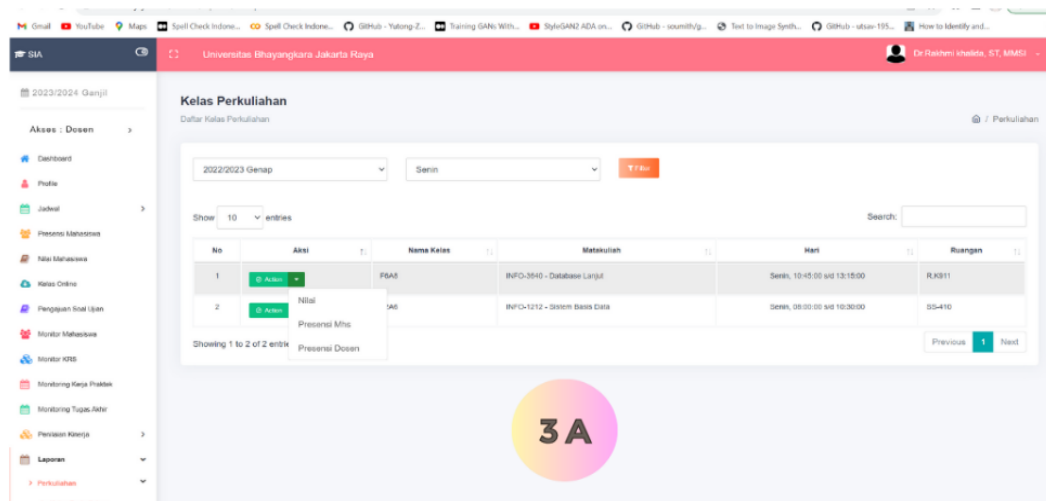
The purpose of making an SIA application prototype is to improve design or features and cover application weaknesses and the ultimate goal is to increase usability (Khalida et al., 2012). The stages of creating an SIA application prototype are carried out after going through a brainstorming session. Creative ideas and new solutions that address problems are transformed into SIA application prototypes. The user experience (UX) of the SIA application prototype is described using a sitemap which can be seen in Figure 2.



Source: Research Result (2023)

Figure 2. Academic Information System Application Sitemap

In Figure 3 there are 2 pages. Labeled 3A prototype display of the SIA application menu page completeness of BKD in the education (a) course report. On this page, lecturers can download lecture reports containing teaching realization, student grades, and student attendance lists. Labeled 3B prototype display of the student attendance list page at the lecturer user. This page can also be seen at the student user as evidence of an integrated attendance feature between lecturers and students.



Source: Research Result (2023)

Figure 3. Page on Course Report and Attendance of Students Page

3.4. Questionnaire

The next stage is a questionnaire distributed to respondents randomly with the aim of validating usability after the application has been tested with users. This questionnaire can also help focus the evaluation of feature improvements or application improvements if the results of the questionnaire tend to be negative.

Questionnaire-based on the System Usability Scale (SUS) method using a Likert scale. Respondents were asked to give an assessment of Strongly Disagree, Disagree, Neutral, Agree, and Strongly Agree on the 10 statement items according to the assessment of each respondent. If the respondent does not find the right response scale, the respondent must fill in the midpoint of the user testing scale (Efendi Mochammad Arif et al., 2021).

Table 4. Average Category of Rating Interval Scores

Intervals	Category
$4.2 < x < 5$	Strongly Agree
$3.4 < x < 4.2$	Agree
$2.6 < x < 3.4$	Neutral
$1.8 < x < 2.6$	Disagree
$1 < x < 1.8$	Strongly Disagree

Source: (Anggraini Wresni et al., 2020)

Each statement item has a contribution score in the calculation. Each item's contribution score ranges from 0 to 4. For items 1, 3, 5, 7, and 9 which are positive statements, the contribution score is the scale minus 1. For items 2, 4, 6, 8, and 10 which are negative statements, the score contribution is 5 minus the scale. The total contribution score is multiplied by 2.5 to get the overall value of system usability (Anggraini Wresni et al., 2020). The following is the formula for calculating the System Usability Scale (SUS) score:

$$SUS = ((R1 - 1) + (5 - R2) + (R3 - 1) + (5 - R4) + (R5 - 1) + (5 - R6) + (R7 - 1) + (5 - R8) + (R9 - 1) + (5 - R10) * 2,5) \quad (1)$$

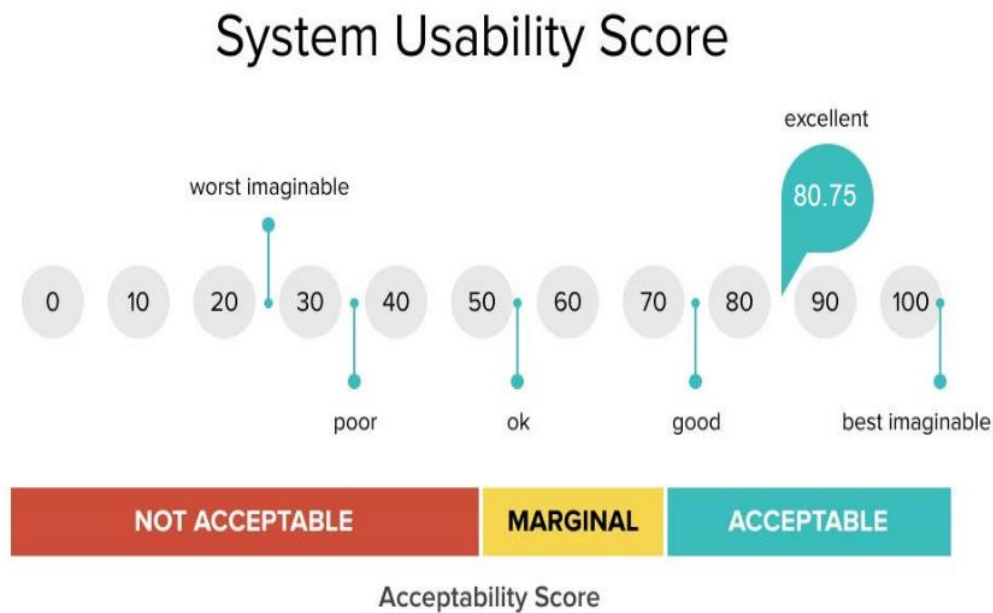
The average response of respondents is recorded in Table 5. Based on the SUS score calculation formula, the questionnaire results obtained a score of 80.75. The application of SIA in measuring the grade scale shown in Figure 7, is included in the category of acceptable systems for users. There are several items of concern in an effort to improve usability. Item 5 which indicates that the functions or features provided on this site are well designed and prepared is answered by respondents with an average response of "Neutral". Item 6 showed too many inconsistencies on this site, respondents gave the average response "Agree".

Table 5. Results Questionner based on the SUS Method

No.	Statement	Mean	Category
1	I will use or visit this site often	4.4	Strongly Agree
2	I think this site is too complex (loads a lot of things unnecessary)	1.2	Strongly Disagree
3	I find this site easy to navigate	4.5	Strongly Agree
4	I need technical assistance to use or browse this site	0.8	Strongly Disagree

No.	Statement	Mean	Category
5	I rate the functions or features provided on this site well designed and prepared	3.3	Neutral
6	I rated too many inconsistencies on this site	3.5	Agree
7	I feel most people will find it easy to use or quickly browse this site	4.5	Strongly Agree
8	I find this site very complicated to navigate	2	Disagree
9	I feel very confident browsing this site	4.6	Strongly Agree
10	I need to learn a lot of things before I can explore this site properly	1.5	Disagree

Source: Research Result (2023)



Source: Research Result (2023)

Figure 5. SUS Score Scale

The inconsistencies that occur on the sites referred to in item 6 lead to a neutral assessment of the functions or features referred to in item 5. Each item has a contributing relationship to one another. Based on the respondent's assessment, the focus on improving features or improving the application can be identified. Inconsistency on the site is usually caused by database design errors or incompatibility of the amount of data with server capacity. Corrective steps that can be taken are changes to the database design and the addition of volume from the server and then testing the application again.

4. Conclusion

The combination of design thinking and system usability scale is used to improve usability in AIS. The design thinking method of developing SIA focuses on user needs so that the SIA application has a usability value of 80.75 when assessed through a questionnaire using the system usability scale method. This proves that SIA is an acceptable application or can be accepted by its users. Respondents' assessment that SIA has many inconsistencies in the features and functions of SIA that have not been designed properly is usually caused by errors in database design or incompatibility of the amount of data with server capacity. Recommendations for improvements that can be made are changes to the database design and additional volume from the server so that the SIA can work more relevantly, and effectively, and can use last a long time.

Acknowledgements

The authors thank Pikel journal editorial team for providing the opportunity to submit and carry out a review related to the journal.

Author Contributions

Pamungkas proposed the topic; Khalida conceived models and designed the experiments; Khalida conceived the optimization algorithms; Khalida and Pamungkas analyzed the result.

Conflicts of Interest

The authors declares no conflict of interest.

References

- Anggraini Wresni, Nofirza Nofirza, Candra Reski Mai, & Sari Widad Ulfika. (2020). Analisis Pada Sistem Informasi Akademik Mahasiswa Menggunakan Metode System Usability Scale. *Jurnal Penelitian SAINTEK*, 25(2), 184–194.
- Aulia, Z., Prasetyo, P., Virgantara Putra, O., & Harmini, T. (2023). *Implementasi Metode Design Thinking pada Perancangan UI/UX Situs Olah-Oleh TPS3R Kota Batu*.
- Belluano Poetri Lestari Lokapitasari, Purnawansyah Purnawansyah, La Saiman, & Panggabean Benny Leonard Enrico. (2021). Development of academic information system using webassembly technology. *ILKOM Jurnal Ilmiah*.
- Efendi Mochammad Arif, Mahjudin Mahjudin, & Soelistya Djoko. (2021). The Importance Of Measuring The Gap Level Of Information System User Satisfaction In The World Of Education In University: Electronic Service Quality Model. *Journal Universitas Muhammadiyah Gresik Engineering*,

Social Science, and Health International Conference.

- Ilham, H., Wijayanto, B., & Rahayu, S. P. (2021). Analysis And Design Of User Interface/User Experience With The Design Thinking Method In The Academic Information System Of Jenderal Soedirman University. *Jurnal Teknik Informatika (Jutif)*, 2(1), 17–26. <https://doi.org/10.20884/1.jutif.2021.2.1.30>
- Khalida, R., Setiawati, S., Bhayangkara Jakarta Raya, U., Perjuangan No, J., & Mulya Bekasi, M. (2012). *Meningkatkan Service Quality Usaha Laundry Menggunakan Throw-Away Prototyping*. 7(3).
- Kurnianto, F., Informatika, J., Industri, F. T., Gustri, E., & Jurusan Informatika, W. (2022). *Penerapan Metode Design Thinking Dalam Perancangan UI/UX Pada Aplikasi Basis Data Sekar Kawung Untuk Pegawai Lapangan Perusahaan Sosial Sekar Kawung*.
- Li, Y., Schoenfeld, A. H., diSessa, A. A., Graesser, A. C., Benson, L. C., English, L. D., & Duschl, R. A. (2019). Design and Design Thinking in STEM Education. In *Journal for STEM Education Research* (Vol. 2, Issue 2, pp. 93–104). Springer Nature. <https://doi.org/10.1007/s41979-019-00020-z>
- Sulistiani Ino, Syarif Syafruddin, & Dewiani Yusran. (2018). Quality Models Engineering for Evaluation of Academic Information System Quality Instrument (AISQI). *2018 International Conference on Applied Science and Technology (ICAST)*.
- Tata Sutabri. (2014). *Pengantar Teknologi Informasi*. Andi.
- Widiatmoko, M. ., Suyanto, M., & Sofyan, A. . (2015). Analisis sistem informasi dengan pendekatan usability (Studi Kasus Website STIMIK Amikom Yogyakarta). *Jurnal Angkasa*, 7(1).