

Android-Based Patient Medical Record Application For Healthcare Data Management

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ABSTRACT – The management of medical records at Belida Darat Community Health Center is still carried out manually, resulting in several challenges, including slow healthcare services, difficulties in retrieving patient data, and the risk of data loss or damage. This study aims to develop an Android-based patient medical record application to improve the efficiency of healthcare service data management. The system was developed using the Rapid Application Development (RAD) method, which consists of requirements planning, user design, construction, and implementation stages. The research data were obtained through observation, interviews, and documentation, while the system functionality was evaluated using Black Box Testing. The results show that the developed application integrates patient registration, medical record management, examination data management, and report generation into a single Android-based system, making the data management process more effective and organized. In addition, the results of Black Box Testing indicate that all major system functions operate according to the predetermined functional requirements and are considered valid. Therefore, the developed application can be used to support medical record management and contribute to the digital transformation of healthcare services at Belida Darat Community Health Center.

Keywords - Medical Records, Android, Health Information System, Data Digitization.

Perancangan Aplikasi Rekam Medis Pasien Berbasis Android

ABSTRAK – Pengelolaan rekam medis pada Puskesmas Belida Darat masih dilakukan secara manual sehingga menimbulkan beberapa kendala, di antaranya lambatnya pelayanan kesehatan, kesulitan dalam pencarian data pasien, serta risiko kehilangan atau kerusakan data. Penelitian ini bertujuan untuk mengembangkan aplikasi rekam medis pasien berbasis Android guna meningkatkan efisiensi pengelolaan data pelayanan kesehatan. Sistem dikembangkan menggunakan metode Rapid Application Development (RAD) yang terdiri atas tahapan perencanaan kebutuhan, desain pengguna, konstruksi, dan implementasi. Data penelitian diperoleh melalui observasi, wawancara, dan dokumentasi, sedangkan fungsionalitas sistem dievaluasi menggunakan Black Box Testing. Hasil penelitian menunjukkan bahwa aplikasi yang dikembangkan mengintegrasikan pendaftaran pasien, pengelolaan rekam medis, pengelolaan data pemeriksaan, dan pembuatan laporan ke dalam satu sistem berbasis Android sehingga proses pengelolaan data menjadi lebih efektif dan terorganisir. Selain itu, hasil Black Box Testing menunjukkan bahwa seluruh fungsi utama sistem berjalan sesuai dengan kebutuhan fungsional yang telah ditentukan dan dinyatakan valid. Oleh karena itu, aplikasi yang dikembangkan dapat digunakan untuk mendukung pengelolaan rekam medis serta berkontribusi terhadap transformasi digital pelayanan kesehatan di Puskesmas Belida Darat.

Kata Kunci – Rekam Medis, Android, Sistem Informasi Kesehatan, Digitalisasi Data.

1. INTRODUCTION

The development of information technology has brought significant changes to various sectors, including healthcare. Digital technology can improve

the efficiency of administrative processes, accelerate access to information, and reduce errors in data management. Processes that were previously performed manually can also be automated through

computerized systems, allowing healthcare personnel to manage information more efficiently [1].

One important form of digital transformation in healthcare is the implementation of Electronic Medical Records (EMR). Electronic Medical Records enable patient information, including patient identity, medical history, diagnoses, medical procedures, prescriptions, and examination results, to be stored digitally and accessed more systematically [2]. Medical records also function as important documentation for healthcare services and can support medical decision-making, administrative activities, research, and legal requirements. Therefore, medical record management needs to be carried out accurately while maintaining the confidentiality of patient information [3].

However, the implementation of digital medical record systems has not been evenly adopted across primary healthcare facilities. Belida Darat Community Health Center, Muara Enim Regency, still manages patient medical records manually using paper-based books. This condition makes patient data retrieval less efficient and increases the possibility of data loss and recording errors. Similar conditions have been reported in previous research, where manual medical record documentation resulted in less effective patient data management [4].

Previous studies have shown that digital medical record systems can address several limitations of manual recordkeeping. A web-based medical record application was developed to replace manual documentation and facilitate faster, more structured, and accessible medical record management [5]. Another web-based medical record information system was developed to facilitate the retrieval of patient data that had previously not been documented systematically [6]. Furthermore, an electronic medical record system was developed to integrate patient information and support more organized medical record management [7].

The use of Android technology has also been applied in several medical record studies. A medical record application was developed at UPTD Durian Luncuk Community Health Center to improve the effectiveness of patient data management [8]. An Android-based medical record application was developed using the Waterfall method to support outpatient and inpatient services at a community health center [9]. An Android-based medical record and patient complaint application was developed to facilitate access to patient information and support healthcare services [10]. In another study, a medical record application was developed using React JS and the Prototype method to improve the efficiency of medical record management [11]. A smartphone-based electronic medical record application was also developed to support patient service management in

a hospital [12].

Although these studies demonstrate that digital medical record applications can support healthcare data management, the systems were developed according to the needs and operational conditions of their respective research locations. Previous research has therefore not specifically addressed the operational characteristics and healthcare service workflow at Belida Darat Community Health Center. This condition indicates a gap in the development of a medical record application that is specifically adapted to the requirements and workflow of the research site. Such adaptation is important to ensure that the developed system is relevant to the actual medical record management process at the healthcare facility.

Based on these conditions, the development of an Android-based medical record application is important to support the digitalization of patient data management at Belida Darat Community Health Center. The application is expected to facilitate patient registration, examination data management, patient history retrieval, and report generation within an integrated system. The system is also designed to follow the healthcare service workflow, from recording patient identity and complaints to recording diagnoses, medical procedures, and prescribed medication.

Therefore, this study aims to develop an Android-based patient medical record application using Flutter and Firebase with the Rapid Application Development (RAD) method. The application is designed according to the healthcare service workflow and user requirements at Belida Darat Community Health Center to improve the efficiency, organization, and accessibility of patient medical record management.

2. LITERATUR REVIEW

A. Medical Records

Medical records are documents containing information related to patient identity, examinations, treatment, medical procedures, and other healthcare services provided to patients. Electronic Medical Records (EMR) are medical records created and managed using electronic systems to support the administration of medical records [13]. Electronic medical records enable patient information to be stored digitally and include important medical information such as medical history, diagnoses, treatment, prescriptions, and examination results [2]. Medical records also serve as an important source of information in healthcare services and must be managed accurately while maintaining the confidentiality of patient data [3].

B. Community Health Center

A Community Health Center (Puskesmas) is a healthcare facility that provides comprehensive, integrated, equitable, accessible, and affordable health services to the community [14]. Puskesmas also plays an important role as a first-level healthcare facility in providing quality services and improving patient satisfaction [15]. The quality of services provided by Puskesmas is also related to the availability of adequate facilities and the management of healthcare activities. Therefore, information technology can be utilized to support healthcare service management, including patient and medical record data management.

C. Android

Android is a mobile operating system based on the Linux kernel and designed for mobile devices such as smartphones and tablets [16]. Android provides an open platform that allows developers to create applications according to user needs and supports various hardware and features for application development and distribution [17]. Therefore, Android can be used as a platform for developing healthcare applications that provide flexible access to digital medical record services.

D. Flutter and Dart

Dart is a programming language developed by Google and designed by Lars Bak and Kasper Lund. Dart is a cross-platform programming language that can run on different operating systems and is used to develop web, server, desktop, and mobile applications [18]. Dart also supports cross-platform application development with static typing, a relatively simple syntax, and efficient performance [19]. In this study, Dart is used as the programming language in the development of the Android application using the Flutter framework.

E. Firebase

Firebase is a platform developed by Google that provides various services to support application development. The platform can simplify the management of server requirements needed by applications and support the development process more efficiently [20].

Firebase also provides various features that can support application development and facilitate the management of application data and information. These features can help manage application data and information in a faster and more secure manner [21].

In this study, Firebase was utilized to support the development of the Android-based patient medical record application. Specifically, Firebase was used to support the authentication process and data storage required by the application. The use of Firebase in these aspects supports the management of user access

and medical record data within the developed application.

3. RESEARCH METHODS

This study used a descriptive qualitative approach to describe the conditions and problems in the medical record management process at Belida Darat Community Health Center. The qualitative approach was used to obtain in-depth information regarding the existing service process and user requirements through direct data collection [22]. The data used in this study consisted of primary and secondary data. Primary data were obtained directly from the research object through observation and interviews, while secondary data were obtained from documentation and relevant literature used to support the research and system development process.

A. Data Collection Techniques

The data collection techniques used in this study consisted of observation, interviews, and documentation. Observation was conducted by directly observing the medical record management process at Belida Darat Community Health Center to identify the existing workflow and problems. Interviews were conducted to obtain information regarding the healthcare service process, medical record management, and user requirements. Documentation was used to collect supporting data related to the research object and medical record management process.

B. System Development Method

The system was developed using the Rapid Application Development (RAD) method. RAD is a software development approach designed to achieve a relatively short development cycle. In this study, the RAD method consisted of three main stages: Requirements Planning, RAD Design Workshop, and Implementation. During the Requirements Planning stage, system requirements were identified through observation and interviews at Belida Darat Community Health Center. The information obtained from these activities was used as the basis for determining the required system functions and designing the application according to the needs of the patients, administrators, and doctors.

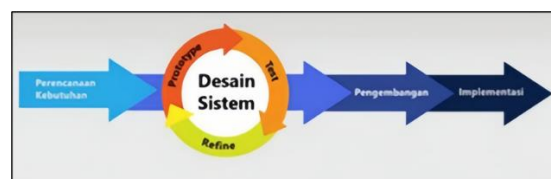


Figure 1. RAD Method

1. Requirements Planning stage was conducted to identify system requirements based on the problems and information needs found during the research process. This stage included identifying the objectives, system limitations, constraints, and alternative solutions. The analysis was also conducted to determine the system behavior and activities required within the system.
2. RAD Design Workshop stage focused on identifying alternative solutions and selecting the most appropriate solution based on the identified requirements. At this stage, the system design was developed based on the data obtained during the research process and modeled into the information system architecture. System modeling was performed using the Unified Modeling Language (UML) to describe the system structure, workflow, and interactions.
3. Implementation stage involved translating the system design into a functional application through the coding process. At this stage, the designed system was developed into a program that could be executed by the computer or mobile device. The implementation process was carried out until the system was ready to be operated according to the identified requirements.

C. Testing Technique

The testing technique used in this study was Black Box Testing. This technique was used to evaluate the functionality of the developed application based on predetermined test scenarios without examining the internal structure of the program code [20]. Black Box Testing focuses on the functionality of the application by examining whether the system can produce the expected output based on the given input.

The testing process was conducted by providing inputs to the main functions of the developed medical record application. Each function was tested according to the predetermined test scenarios, and the output generated by the system was observed and recorded. The testing focused on the main functions of the application to ensure that each function could operate according to the requirements that had been identified during the system development process.

The actual results obtained from the testing process were then compared with the expected results specified in each test scenario. If the actual output corresponded to the expected output, the tested function was considered to operate properly. The results of Black Box Testing were then used to

determine whether the main functions of the developed application had met the specified functional requirements.

4. RESULT AND DISCUSSION

1. Results

A. Application Implementation

The medical record application was successfully developed using Flutter as the framework for Android application development and Firebase as the authentication and data storage service. The use of Flutter supports the development of the Android-based application, while Firebase is utilized to manage user authentication and store the data required by the system. The integration of these technologies supports the implementation of the medical record application according to the needs of the healthcare service process at Belida Darat Health Center.

The developed system consists of three types of users, namely patients, administrators, and doctors. Each user has different access rights according to their respective roles in the healthcare service process. Patients can access the services provided for patient-related activities, while administrators and doctors have access according to their responsibilities in managing and handling medical record data. The implementation of different access rights allows the system to organize user access based on the requirements of the healthcare service process at Belida Darat Health Center.

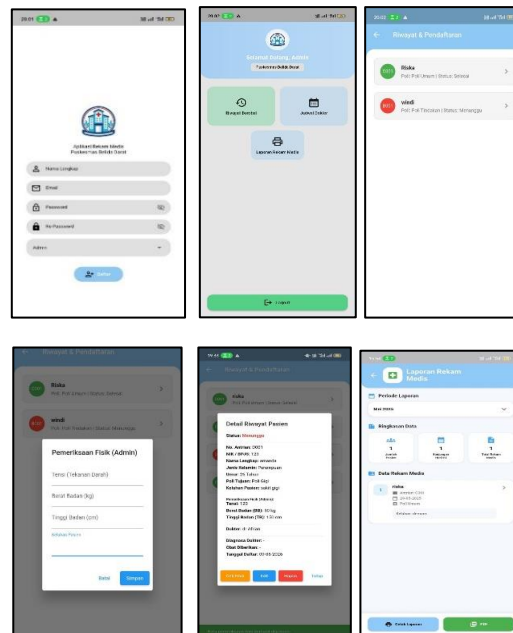


Figure 2. Admin Interface Implementation

Based on Figure 2, the application provides an interface designed to assist administrators in managing patient healthcare services at Belida Darat Health Center. After successfully registering an account and completing authentication through the

login page, the administrator is directed to a dashboard containing the main menus, namely medical visit history, doctor schedules, and medical record reports. The dashboard functions as a central navigation area, making it easier for administrators to access all available features.

Through the Registration History menu, administrators can view a list of patients who have registered along with their service status. Administrators can then open the patient's history details to view complete registration information, such as patient identity, the intended medical department, the attending doctor, and examination status. At this stage, administrators can also perform the initial physical examination process by entering preliminary data, such as blood pressure, weight, height, and patient complaints, before the patient is examined by the doctor.

In addition to managing patient data, the application also provides a medical record report feature that displays a summary of the number of patient visits and a list of medical records based on a specific period. This feature assists administrators in monitoring healthcare service data while also generating reports that can be used as administrative documentation at Belida Darat Health Center.

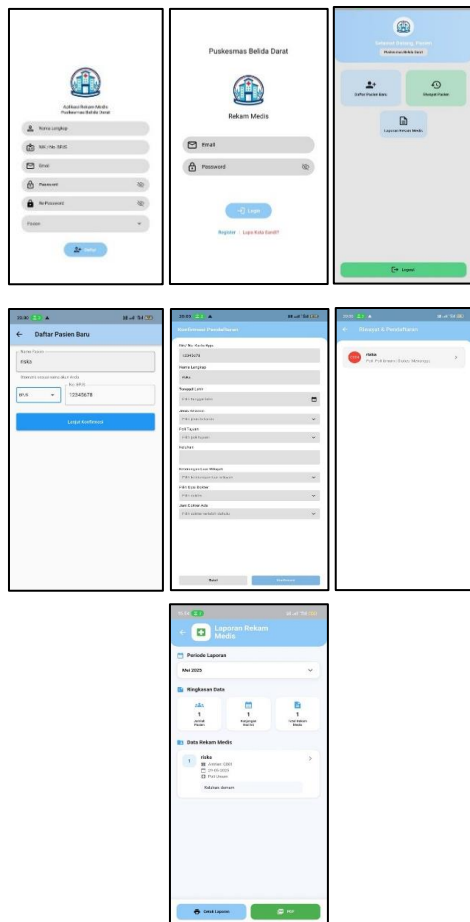


Figure 3. Patient Interface Implementation

Figure 3 illustrates the implementation of the

medical record application interface on the patient side. Before using the application, patients are required to register an account by entering their identity information according to the system requirements. Once the account has been successfully created, it can be used to log in so that users can access all available services. After successful authentication, the system displays the main page containing the patient registration, registration history, and medical record report menus as the central access point for all user activities.

Through the application, patients can register for medical services without having to visit the administrative section beforehand. The registration process is carried out by entering identity and service information, followed by a confirmation stage before the data are stored in the database. The stored data can subsequently be displayed through the history menu, allowing patients to monitor the progress of their ongoing healthcare services. In addition, the application provides a medical record report menu that displays the patient's service history based on the data recorded in the system. These processes demonstrate that the application can support digital patient registration and medical record information management, making the healthcare service process more structured compared with manual recordkeeping.

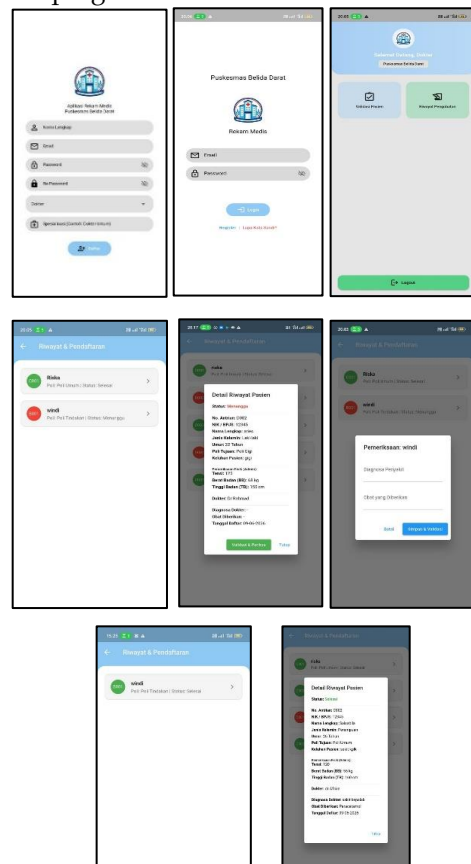


Figure 4. Doctor Interface Implementation

Figure 4 shows the implementation of the interface used by doctors in the Android-based

medical record application. Before accessing the system, doctors register an account by entering their full name, email address, password, and selecting the doctor role along with their area of specialization. After successful registration, doctors can log in using their registered accounts, after which the system displays the dashboard as the central navigation area for all available features.

Through the dashboard, doctors can access the Patient Validation and Treatment History menus. In the Patient Validation menu, the system displays a list of patients who have registered and undergone an initial physical examination by the administrator. The doctor then selects a patient to view complete information, including the patient's identity, intended medical department, complaints, physical examination results, and other supporting data. This information serves as the basis for the doctor to conduct further examination.

After reviewing the patient's information, the doctor enters the examination results, including the diagnosis and prescribed therapy or medication, through the examination form. The entered data are then stored in the system, causing the patient's service status to automatically change from Pending to Completed. This status change automatically updates the data in the registration history menu while completing the patient's medical record information. Thus, the entire examination history can be retrieved as documentation of the healthcare services that have been provided.

B. Black Box Testing

System testing was conducted using the Black Box Testing method to ensure that all functions of the medical record application operated according to user requirements. The testing focused on the conformity between the inputs provided by users and the outputs generated by the system without considering the internal structure of the program code. Each feature was tested based on predetermined usage scenarios, and the resulting outputs were then compared with the expected results to determine the success of each application function.

Table 1. Results of Black Box Testing

No	Tested Feature	Test Scenario	Expected Result	Conclusion
1	Splash Screen	Opening the application	The splash screen is displayed	Valid
2	Login	Entering email and password	Successfull y redirected	Valid

No	Tested Feature	Test Scenario	Expected Result	Conclusion
			to the dashboard	
3	Forgot Password	Entering email	OTP is successfull y sent	Valid
4	Patient Registratio n	Completin g the registration form	Account is successfull y created	Valid
5	Patient Dashboard	Logging in as a patient	Patient dashboard is displayed	Valid
6	New Patient Registratio n	Entering initial registration data	Confirmati on page is displayed	Valid
7	Registratio n Confirmat ion	Completin g registration data	Data is successfull y saved	Valid
8	Patient Registratio n History	Opening the history menu	Registratio n history is displayed	Valid
9	Patient Medical Record Report	Selecting a report period	Medical record report is displayed	Valid
10	Patient Medical Record Report Details	Selecting one record	Medical record details are displayed	Valid
11	Doctor Registratio n	Completin g the registration form	Doctor account is successfull y created	Valid
12	Doctor Dashboard	Logging in as a doctor	Doctor dashboard is displayed	Valid
13	Patient Validation	Opening the validation menu	Patient list is displayed	Valid
14	Patient Validation Details	Selecting patient data	Patient details are displayed	Valid
15	Doctor Examinati on	Entering diagnosis and medication	Examinatio n data is successfull y saved	Valid

No	Tested Feature	Test Scenario	Expected Result	Conclusion
16	History After Validation	Saving examination results	Patient status changes to completed	Valid
17	Completed History Details	Opening patient details	History details are displayed	Valid
18	Admin Registration	Completing the registration form	Admin account is successfully created	Valid
19	Admin Dashboard	Logging in as an admin	Admin dashboard is displayed	Valid
20	Admin Registration History	Opening the history menu	Patient data is displayed	Valid
21	Physical Examination	Entering physical examination data	Data is successfully saved	Valid
22	Physical Examination Details	Opening patient details	Examination details are displayed	Valid
23	Doctor Schedule Management	Adding a doctor's schedule	Schedule is successfully saved	Valid
24	Admin Medical Record Report	Selecting a report period	Medical record report is displayed	Valid
25	Admin Medical Record Report Details	Opening report details	Medical record details are displayed	Valid
26	Print Report and PDF	Selecting the print menu	The report is successfully printed or downloaded in PDF format	Valid
27	Logout	Pressing the logout button	The system returns to the login page	Valid

Based on the Black Box Testing results presented

in Table 1, all major features of the Android-based patient medical record application functioned according to the system requirements. A total of 27 test scenarios were evaluated, covering user authentication, patient data management, physical examinations, doctor examinations, doctor schedule management, medical record reporting, and the logout process. All tested scenarios received a Valid status, indicating that the outputs generated by the application corresponded to the expected results and that no functional errors were identified during the testing process.

The testing results further demonstrate that the application is capable of supporting an integrated medical record workflow, beginning with user registration and patient registration, followed by examinations conducted by healthcare personnel, and continuing through the storage and presentation of medical record reports. In addition, the features associated with the access rights of administrators, patients, and doctors could be executed properly according to their respective functions. Therefore, the application developed using the Rapid Application Development (RAD) method is considered suitable for implementation as a digital supporting tool for medical record management at Puskesmas Belida Darat.

2. Discussion

The developed application has similarities with previous studies that developed digital medical record systems to support patient data management. Previous research has developed web-based medical record applications to replace manual documentation and facilitate patient data management [5], [6]. Other studies have also developed electronic medical record systems to integrate patient information [7]. In addition, Android-based medical record applications have been developed for community health centers to support patient data management and healthcare services [8]–[10]. The use of different platforms and development approaches in these studies shows that digital medical record applications can be adapted to the needs of healthcare facilities. In this study, the application was developed specifically for Belida Darat Community Health Center using Android, Flutter, and Firebase, with functions involving patients, administrators, and doctors according to the identified healthcare service workflow.

The implementation results show that the application provides several functions within a single system, including patient registration, patient history, physical examination recording, doctor examination, doctor schedule management, and medical record reporting. These functions are also reflected in previous studies, although the scope and implementation context differ. For example, the

study in [9] developed an Android-based medical record application for outpatient and inpatient services using the Waterfall method, while [10] developed an Android-based application combining medical records and patient complaints. Meanwhile, [11] developed a medical record application using React JS and the Prototype method, and [12] developed a smartphone-based electronic medical record application for hospital services. Compared with these studies, the contribution of this study is primarily related to the implementation of the identified medical record workflow and user requirements at Belida Darat Community Health Center rather than the introduction of a new technical method.

The Black Box Testing results provide functional evidence that the implemented application operates according to the specified test scenarios. A total of 27 scenarios covering authentication, patient data management, physical examination, doctor examination, doctor schedule management, medical record reporting, and logout were tested, and all scenarios obtained a Valid status. These results indicate that the tested functions produced outputs corresponding to the expected results. However, the testing was limited to functional correctness; therefore, the results do not establish improvements in usability, performance, security, compatibility, reliability, efficiency, or healthcare service quality.

Based on these results, the application can serve as a digital supporting tool for managing patient medical record data at Belida Darat Community Health Center. Further development can focus on evaluating non-functional aspects of the application, particularly usability, performance, security, compatibility across Android devices, and reliability. In addition, future development may include integration with other health information systems, enhancement of data security and management features, and testing with a broader range of users and healthcare service environments.

5. CONCLUSION

This study resulted in an Android-based patient medical record application developed to support medical record management at Belida Darat Community Health Center. The application was developed based on the identification of problems and user requirements obtained through the data collection process and subsequently realized through the system development stages using the Rapid Application Development (RAD) method. The implementation results indicate that the application provides functions that support patient registration, examination data management, recording of physicians' examination results, physician schedule

management, patient history management, and presentation of medical record reports. The results of testing using Black Box Testing demonstrate that all tested functions operated according to the specified test scenarios and expected outputs. A total of 27 test scenarios were tested, and all scenarios obtained a Valid status. These results indicate that the tested application functions operated according to the specified functional requirements. However, the testing was limited to functional correctness and did not evaluate non-functional aspects such as usability, performance, security, compatibility, reliability, or service efficiency. Further development may focus on enhancing data security and management features, integrating the application with other health information systems, and testing the application with a broader range of users and healthcare service environments.

BIBLIOGRAPHY

- [1] S. Hendri *et al.*, "Teknologi Digital Di Era Modern," PT Global Eksekutif Teknologi, 2022. [Online]. Available: <https://repo.umb.ac.id/items/show/3580>
- [2] F. Rusdian Ikawati, "Efektivitas Penggunaan Rekam Medis Elektronik Terhadap Peningkatan Kualitas Pelayanan Pasien Di Rumah Sakit," *Ranah Research: Journal of Multidisciplinary Research and Development*, vol. 6, no. 3, pp. 288–298, 2024, doi: 10.38035/rrj.v6i3.819.
- [3] S. Flora, N. Tarigan, R. Abudi, and N. Arsad, "Sistem Pengelolaan Rekam Medis Puskesmas," *Jambura Health and Sport Journal*, vol. 4, no. 2, pp. 119–126, 2022, doi: 10.37311/jhsj.v4i2.15276.
- [4] T. Wibowo, S. La Wungo, and I. Zaman, "Perancangan Aplikasi Register Penyakit Dan Rekam Medis Pasien Pada Puskesmas Tikupon Kecamatan Bualemo," *Journal of System and Computer Engineering*, vol. 2, no. 2, pp. 181–195, 2021, doi: 10.47650/jsce.v2i1.245.
- [5] A. Biahdilah and Y. Septiana, "Rancang Bangun Aplikasi Rekam Medis Berbasis Web," *Jurnal Algoritma*, vol. 17, no. 2, pp. 361–367, 2021, doi: 10.33364/algoritma/v.17-2.361.
- [6] J. Akbar and A. Yaqin, "Sistem Informasi Rekam Medis Berbasis Web Pada Klinik Risa Rafana Menggunakan Metodologi Extreme Programming," *Infotek: Jurnal Informatika Dan Teknologi*, vol. 4, no. 2, pp. 270–279, 2021, doi: 10.29408/jit.v4i2.3680.
- [7] M. Choirur Roziqin, A. Dwi Ajeng Prameswari, A. Permana Wicaksono, and V. Vestine, "Sistem Rekam Medis Elektronik Berbasis Web," *JOINTECS (Journal of Information Technology and Computer Science)*,

- vol. 7, no. 3, pp. 110–120, 2022, [Online]. Available: <http://publishing-widyagama.ac.id/ejournal-v2/index.php/jointecs/article/view/3915>
- [8] Y. Prasiska, Sharipuddin, and Hendri, “Jurnal Informatika Dan Rekayasa Komputer (JAKAKOM) Perancangan Aplikasi Rekam Medis Pada Uptd Puskesmas Durian Luncuk,” 2022. [Online]. Available: <http://ejournal.unama.ac.id/index.php/jakakom>
- [9] F. Pratama, E. Rahayu, and S. Dewi Andriana, “Perancangan Aplikasi Rekam Medis Dengan Pendekatan Clinical Pathway Pada Pasien Rawat Jalan Dan Inap Di Puskesmas Berbasis Android,” *SIBATIK JOURNAL: Jurnal Ilmiah Bidang Sosial, Ekonomi, Budaya, Teknologi, dan Pendidikan*, vol. 2, no. 2, pp. 697–708, Jan. 2023, doi: 10.54443/sibatik.v2i2.640.
- [10] A. Nurmala, M. Muhallim, and B. Sulaeman, “Aplikasi Rekam Medis dan Pengaduan Pasien Berbasis Android Puskesmas Lamasi Timur,” 2023.
- [11] Y. Maolana, Asriyanik, and A. Pambudi, “Aplikasi Rekam Medis Imran Medical Center Menggunakan React Js Dengan Metode Prototype,” *INFOTECH journal*, vol. 9, no. 2, pp. 626–636, 2023, doi: 10.31949/infotech.v9i2.7473.
- [12] R. A. Saputra, R. D. Syaputra, and D. Harmanto, “Perancangan Aplikasi Pelayanan Rekam Medis Elektronik Berbasis Smartphone Di Rumah Sakit Rafflesia,” *J-REMI: Jurnal Rekam Medik Dan Informasi Kesehatan*, vol. 6, no. 1, pp. 40–49, 2024, doi: 10.25047/j-remi.v6i1.5428.
- [13] D. Rahmi, Indasah, and R. Wardani, “Peran Kualitas Sistem, Kualitas Informasi dan Kualitas Layanan Terhadap Implementasi dan Kepuasan Pengguna Rekam Medis Elektronik,” *Jurnal Penelitian Kesehatan “SUARA FORIKES” (Journal of Health Research “Forikes Voice”)*, Sep. 2025, doi: 10.33846/sf16309.
- [14] A. Lutfiana, I. Sri Lestari, K. Annisa, R. Puspita, and Y. Rasyid, “Strategi Pusat Kesehatan Masyarakat (Puskesmas) Kecamatan Cilandak Dalam Meningkatkan Akreditasi Ke Tingkat Paripurna,” *Pentahelix*, vol. 1, no. 1, pp. 1–14, 2023, doi: 10.24853/penta.1.1.1-14.
- [15] J. Jumarni, S. Said, K. Adri, and M. Mardhatillah, “Pengaruh Kepemimpinan Kepala Puskesmas terhadap Mutu Pelayanan dan Kepuasan Pasien di Puskesmas Maiwa Kabupaten Enrekang,” *GALENICAL: Jurnal Kedokteran dan Kesehatan Mahasiswa* Malikussaleh, vol. 4, no. 4, pp. 116–131, Aug. 2025, doi: 10.29103/jkkmm.v4i4.22789.
- [16] I. A. Prabowo, H. Wijayanto, B. W. Yudanto, and S. Nugroho, *Buku Ajar Pemrograman Mobile Berbasis Android (Teori, Latihan dan Tugas Mandiri)*. Semarang: Lembaga Penelitian dan Pengabdian Kepada Masyarakat Universitas Dian Nuswantoro, 2021.
- [17] L. D. Andriyanto and T. Wansen, “Rancang Bangun Aplikasi Bank Sampah Berbasis Android,” *IT FOR SOCIETY*, vol. 04, no. 02, 2020.
- [18] M. A. Sahputra, M. Defriani, and T. I. Hermanto, “Rancang Bangun Aplikasi Pelayanan E-Trayek Berbasis Mobile Menggunakan Metode Extreme Programming,” *Sudo Jurnal Teknik Informatika*, vol. 2, no. 1, pp. 34–44, 2023, doi: 10.56211/sudo.v2i1.229.
- [19] R. Susainanda and S. Esabella, “Rancang Bangun Media Pembelajaran Pakaian Adat Sumbawa Berbasis Android,” *Management of Information System Journal*, vol. 3, no. 2, pp. 1–10, 2025, doi: 10.47065/mis.v3i2.1878.
- [20] R. A. Setyawan, “Penerapan Firebase Realtime Database Pada Aplikasi Catatan Harian Diabetes Melitus,” *FAHMA: Jurnal Informatika Komputer, Bisnis dan Manajemen*, vol. 22, no. 1, pp. 1–9, 2024, doi: 10.61805/fahma.v22i1.102.
- [21] R. K. Dinata, Risawandi, and O. Hamzah, “Aplikasi Mobile Salary Report Menggunakan Firebase Berbasis Android pada PT Ismatuur,” *Jurnal Elektronika dan Teknologi Informasi (JETI)*, vol. 2, no. 2, 2021, [Online]. Available: <https://jurnal.uniki.ac.id/index.php/jet/article/view/170/202>
- [22] N. S. Husna, R. Octaviani, Z. Sahara, and Usiono, “Penerapan Metode Diskusi Untuk Meningkatkan Kemampuan Komunikasi Peserta Didik Kelas Iii Di Mis Al-Wardah,” *Khazanah Pendidikan*, vol. 18, no. 1, p. 53, 2024, doi: 10.30595/jkp.v18i1.20311.
- [23] A. Samsudin and A. Nisah, “Sistem Pengelolaan Pencucian Kendaraan Berbasis Website Menggunakan Metode Rapid Application Development,” vol. 3, no. 1, 2024, [Online]. Available: <https://ojs.stttxmaco.ac.id/index.php/infotex/article/view/135>