Vol 9 No 4, Desember 2025
ABDI DOSEN
Jurnal Pengabdian Pada Masyarakat
pISSN: 2614-6509
eISSN: 2620-5156

EDUCATION ON FRONT-END DESIGN OF ELECTRONIC MEDICAL RECORD SYSTEMS USING ANGULAR TO IMPROVE CODING SKILLS

Ni Ketut Arniti, Ade Muliadi, Nuning Indah Pratiwi *
Universitas Pendidikan Nasional
Jl. Bedugul No. 39, Sidakarya, Kec. Denpasar Selatan, Kota Denpasar, Indonesia
Email: nuningindahpratiwi@undiknas.ac.id

Abstract

The community service conducted at Universitas Pendidikan Nasional aims to provide education on designing the front-end of an Electronic Medical Record (EMR) system using Angular as an effort to improve students' coding skills. The problems identified include participants' limited understanding of Angular concepts and difficulties in designing a structured system interface. The activities were carried out through several stages, namely material preparation, interactive education, coding practice, and evaluation. The analysis shows an improvement in participants' understanding of Angular project structure, skills in writing organized code, and the ability to build a simple EMR interface prototype. The conclusion of this activity is that practice-based education proves effective in enhancing students' coding competence, while the recommendation is the need for continuous updates to the framework used so that the acquired skills remain relevant to technological developments.

Keywords: Electronic Medical Record; Angular, Coding Skill

INTRODUCTION

The World Health Organization (WHO) defines health as a state in which individuals achieve complete physical, mental, and social well-being, not just free from disease or disability[1]. To realize an optimal degree of health, an organized and effectively functioning health service system is needed to ensure equitable and sustainable access to services[2]. Health care is a series of procedures, treatments, examinations, and follow-up care that a person receives to maintain and improve their health[3]. In health service practice, all forms of interaction between patients and medical personnel are systematically documented to ensure the availability of medical history information at subsequent visits[4]. In addition to the health facilities available around the residence, many institutions or institutions also establish internal health service units so that their members can more easily obtain examinations or treatment to maintain their physical health[5].

Universitas Pendidikan Nasional is a private university located in South Denpasar, Denpasar City, Bali. This campus has fully implemented technology as a means/facility to support the learning process in the classroom. Undiknas transforms students into professional

Submitted: November-2025 Received: November-2025 Available online: December-2025

individuals who not only excel academically, but also have integrity, social concern, and commitment to sustainable development at the national and international levels. On this occasion, the author as a sixth-semester student chose the National Education University as a place for community service activities because he wanted to educate the *front-end design of the* electronic medical record *system* using angular in improving *coding skills* in higher education.

The rapid development of technology also affects aspects of community life in various fields ranging from economic, social, political, health, culture and education[6]. The use of technology is also inseparable from the electronic devices that we use daily such as mobile phones, computers, gadgets, applications and systems are also components that provide convenience in daily life[7]. Initially, recording was done manually using physical media such as paper or books. However, this method has a number of limitations, including the risk of document damage, limited storage space, and difficulties in the search and data collection process[8]. Electronic Medical Records (RME) is a digital system designed to store, manage, and access patient health data. The implementation of Electronic Medical Records (RME) aims to increase the level of security of medical information, optimize the operational efficiency of health services, and ensure the ease and speed of access to medical data by authorized health workers[9]. The implementation of Electronic Medical Records (RME) contributes to improved integration and quality of healthcare services, as it allows medical personnel to make more informed decisions based on comprehensive and systematically documented patient information[10]. This change supports efforts to improve service standards in healthcare facilities and is a significant development in health information management[11].

COMMUNITY SERVICE METHODS

In this community service activity, the author uses an educational method that focuses on delivering information and increasing knowledge through a systematic approach. This method is carried out with discussion, and questions and answers.

RESULTS AND DISCUSSION

During carrying out community service activities at the National Education University, the author seeks to implement the knowledge gained during lectures, especially in the field of *front-end development.* This knowledge is used in the process of designing a medical record system that not only emphasizes the aspect of functionality, but also on the convenience of use for medical personnel and administrative staff. Through this approach, it is hoped that the resulting system design will be able to make a real contribution to the campus environment and support effective and efficient medical workflows.

The author uses Visual Studio Code (VS Code) as the main tool in the process of developing and designing this system interface. The selection of VS Code is based on ease of use, flexibility, and the availability of various supporting features that can speed up the development process. VS Code provides a variety of extensions that can be integrated as needed, such as framework management, debugging, and code formatting, helping to maintain neatness and syntax regularity [12]. The syntax highlighting and auto-complete features also make it very easy to write code, reduce the potential for errors, and increase work efficiency

[13]. In addition, VS Code's simple and user-friendly interface provides the convenience of working for long durations. The ability to integrate with version control systems such as GitHub further adds to the practical value of VS Code, as it allows for direct storage and collaboration without the need for additional applications. The error highlighting feature also makes it easier for writers to detect and fix bugs quickly. With these advantages, the use of VS Code is considered to be able to support the system interface development process more effectively, efficiently, and in a structured manner compared to other editors that tend to be more complex. Therefore, VS Code was chosen as the main tool in supporting the preparation of this project. At Community Service Activities The author carries out three stages, namely the first stage, the implementation stage, and the final stage.

Preparation, in the first stage, the author compiled educational materials related to the design of the front-end Electronic Medical Record (EMR) system using Angular. Planning also includes identifying participant needs, compiling learning modules, and determining achievement indicators in the form of basic understanding of Angular, coding skills, and the ability to design simple EMR interfaces.

In the implementation stage, activities are carried out through interactive educational sessions, discussions, and hands-on practice. Participants were given an explanation of the basic concept of Angular, the project structure, and its application to the front-end design of EMR systems. Furthermore, participants were directed to do coding exercises, compile components, and implement interface design according to simple case studies.

In the Evaluation Stage, the evaluation is carried out by comparing the conditions before and after community service activities. Prior to community service activities, participants tended to have limited understanding of Angular as well as difficulties in designing system interfaces. After the presentation, participants' understanding improved, demonstrated by the ability to structure Angular projects, write code more regularly, and build prototypes of EMR interfaces. The parameters used in the evaluation include the improvement of theoretical knowledge, practical coding skills, and the ability to produce a functional system interface design.

Picture 1. Participant Education
(Source: Personal Documentation, 2025)

CONCLUSION

Based on the results of community service activities that the author carried out while participating in field work practice (PKL) activities, the author can conclude about "Education on the Design *of the Front-End* Electronic Medical Record *System* Using Angular in Improving *Coding Skills*", including:

1. The National Education University, known as Undiknas, is a place for street vendors, the author is a private campus in Bali located in the center of Denpasar City. Undiknas was established in 1969 and has a long history in its development to date. Based on the results of observations made by the author at the National Education University, Denpasar, the National Education University has used technology in all fields. However, for the clinic, it still does not have an EMR System.
2. Based on the results of the problem analysis obtained by the author, the author then created a program of community service activities with the aim of providing education and improving the skills of participants in mastering Angular for the front-end design of the Electronic Medical Record (EMR) system. The main problems found were the limited understanding of participants in coding and the difficulty in designing a structured system interface. Therefore, the author compiles activities that include the provision of learning materials, the implementation of interactive education, and the evaluation of results.

REFERENCES

Najah S., "Literatur Review Implementasi SDGs Pada Kebutuhan Sehat dan Kesejahteraan," *J. Sains Edukatika Indones.*, *4*(1), 51–58, 2022.

Abdillah R. P. A., Aisy A. R., dan Wasir R., "Mengatasi Hambatan Struktural dalam Peningkatan Akses Universal ke Layanan Kesehatan di Indonesia," *Indones. J. Heal. Sci.*, *5*(2), 382–388, 2025, doi: 10.54957/ijhs.v5i2.1454.

Agustini S., Wahyudi A., dan Priyatno A. D., "Analisis Mutu Pelayanan Kesehatan Terhadap Kepuasan Pasien," *J. Aisyiyah Med.*, *9*(2), 261–282, 2024.

Rahmat A. D. dan Hidayat T., "Pengembangan Aplikasi E-Medical Record Studi Kasus Puskesmas Pagelaran," *J. Ris. dan Pengabdi. Interdisip.*, *2*(1), 51–61, 2025, doi: 10.37905/jrpi.v2i1.30113.

Setiyaningrum L., Arso S. P., dan Fatmasari E. Y., "Analisis Kebutuhan (Need) Mahasiswa Terhadap Pelayanan Kesehatan Kampus Universitas Diponegoro," *J. Kesehat. Masy.*, *5*(4), 2356–3346, 2017, [Daring]. Tersedia pada: http://ejournal3.undip.ac.id/index.php/jkm

Pratiwi N. I., Warta A. B., Satria W. I., dan Ohorella N. R., "Edukasi Pemanfaatan Home Charging Dalam Pengisian Daya Kendaraan Listrik Ramah Lingkungan," *Abdimasku J. Pengabdi. Masy.*, *7*(2), 455, 2024, doi: 10.62411/ja.v7i2.1630.

Pratiwi N. I., "Penggunaan Media Video Call Dalam Teknologi Komunikasi," *J. Ilm. Din. Sos.*, *1*(2), 213–214, 2017, doi: https://doi.org/10.38043/jids.v1i2.219.

Rahmah S., Ib B. A., dan Hasnur H., "Analisis Sistem Penyimpanan Rekam Medis Rawat Inap di Rsud Cut Nyak Dhien Kota Meulaboh," *J. Penelit. Sains dan Kesehat. Avicenna*, *3*(2), 161–169, 2025, [Daring]. Tersedia pada: https://doi.org/10.69677/avicenna.v4i2.143

Putri Y. W. Saragih T. R. dan Purba S.H., "Implementasi dan Dampak Penggunaan Sistem

Rekam Medis Elektronik (RME) pada Pelayanan Kesehatan," *J. Kesehat. Masy*., *3*(4), 255-264, 2024, doi: https://doi.org/10.54259/sehatrakyat.v3i4.3449

Istiqamah N. F., "Evaluasi Peran Rekam Medis Elektronik dalam Meningkatkan Kualitas Layanan Kesehatan dan Kepuasan Pasien : Literatur Review," *Graha Med. Public Heal. J.*, *4*(1), 14–23, 2025, [Daring]. Tersedia pada: https://journal.iktgm.ac.id/publichealth/article/download/215/149

Saufinah M., Pane M. S, Fanisya N., Rizkina S. R., Nasution Y. P., dan Agustina D., "Sistem Informasi Manajemen Rumah Sakit (SIMRS) Untuk Meningkatkan Mutu Pelayanan Kesehatan Di Indonesia," *J. Inov. Ris. Ilmu Kesehat.*, *1*(3), 1–14, 2023.

Hidayat T., Henderi H., Nurninawati E., dan Supriati R., "Model Sistem Informasi Pemesanan dan Produksi Berbasis Web Menggunakan Metode Agile," *J. Ilm. Matrik*, *25*(1), 1–6, 2023, doi: 10.33557/jurnalmatrik.v25i1.2240.

Griselda M. F. dan Andri, "Rancang Bangun Sistem Informasi Gudang Agen LPG 3 KG PT. Roskita Indah Dengan Metode *Design Thinking*," *PROSISKO J. Pengemb. Ris. dan Obs. Sist. Komput.*, *12*(2), 2025, doi: 10.30656/prosisko.v12i2.10133.