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Application Development as Vaccination Information Distributing Media at Health Centers

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Abstract. Vaccines or immunizations aim for the human immune system to recognize and quickly fight bacteria or viruses that can cause infection. The purpose of developing this application is to optimize the role of the media as an educational platform and deliver information about vaccines to the public. The method used in the development of this application is Rapid Application Development (RAD). From this research, it is concluded that this application can have a positive impact on the community, such as the public can easily find out the vaccine schedule at the nearest health center, the existence of articles about vaccines that are following the facts can educate people who are still cloudy about the importance of vaccines. According to data, there are 1.76% of Bandung City residents have not vaccinated against Covid-19. In the end, this application was developed not only to convey information about the Covid-19 vaccine but also about other vaccines/immunizations. This application was developed to help the government program, namely the Healthy Indonesia Program.

Keywords: Application, Vaccination Information, Health Centers

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1. Introduction

Vaccines are one of the most important preventive measures for various infectious diseases [1]. The term vaccine itself was only known when the outbreak of smallpox was in 1796. In 1796 Edward Jenner was a doctor who made The Variola vaccine for smallpox which was deadly at that time. The need for vaccines is growing along with the world's desire to prevent various diseases that can lead to death or permanent disability. Efforts to increase vaccine production to increase effectiveness and safety have helped meet the growing demand for

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vaccines. However, the level of awareness of the Indonesian people on the importance of vaccination is still relatively low. This is caused by several factors, one of which is the large number of people who believe in hoax news about the dangers of vaccines [2]. Data held by the AIS team or the Kominfo internet monitoring team shows that there are 1,401 hoax issues regarding the Covid-19 virus that are spread across various platforms [3]. This number continues to grow over time. The wrong public perception of the COVID-19 vaccination campaign is the result of a lack of understanding from the general public [4]. Lee, Kang, and You mention in their research that knowledge can be directly related to attitudes and behavior to prevent disease, but belief in the effectiveness of preventive measures is the most influential factor [5]. Therefore, people need to increase their knowledge about a disease to know attitudes to prevent it.

Based on research conducted by Ditha Prasanti and Ikhsan Fuady, communication media has an important role in connecting humans to interact with each other, one of which is in the process of disseminating information in the health sector [6]. Communication media that has been digitized is considered more effective than the delivery of health information through posters, banners, pamphlets, and banners because now various groups have used electronic media [7]. Everyone's attention is focused on the media because information can spread quickly through the media [8]. From this research, we can see that technology is an effective method for information delivery media.

The purpose of this research is to create an application that functions as a platform that can provide information about vaccinations or the nearest health facility. The research methodology used is called Rapid Application Development (RAD).

2. Method

In developing this application, we use a method called Rapid Application Development (RAD). Rapid Application Development (RAD) is a software/information system development method with a fairly short time [9]. The average information system development time can take a minimum of 180 days, but using the Rapid Application Development (RAD) method it is only 30-90 days. According to Kendall, after conducting research, Rapid Application Development (RAD) is a method that has the aim of shortening the time for planning, designing, and implementing an information system compared to methods that are still relatively traditional [10,11]. The stages of the Rapid Application Development method are shown in Figure 1.

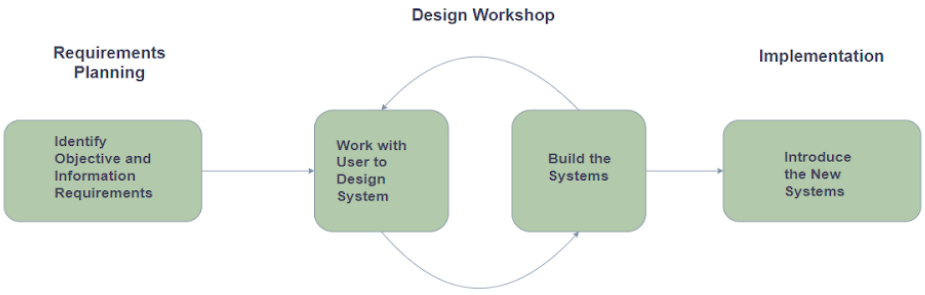

Figure 1. The stages of the Rapid Application Development method

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At the Requirement Planning stage, there is a meeting between the user and the analyst to examine the goals and needs needed for making an application or system. Furthermore, the Design Workshop stage is a process in which design revisions occur and make improvements if there are design discrepancies according to users or analysts. The implementation stage is the last stage the programmer will develop the design into a program.

3. Results and Discussion

3.1. Data collection

The application for distributing information about the designed vaccine is called IVa: Vaccine Information. This application is designed according to what is needed by the user regarding vaccines. Informative features have been presented in the IVa application, such as an article menu to read articles about vaccines which are of course factual so that people do not need to be consumed by hoax news. In addition, there is a vaccine feature that contains information on vaccine schedules at the nearest regional health center. The menus and features in this application are deliberately made not too complex to remain under the goals and needs of the user himself, namely wanting to know information such as news and vaccine schedules.

3.2. Design Workshop

At the design workshop stage, the developer created a User Interface (UI) design for the IVa application. On the front page, there is an illustration and the name of this application is IVa and an explanation that IVa stands for Vaccine Information. The front-page design is shown in Figure 2.

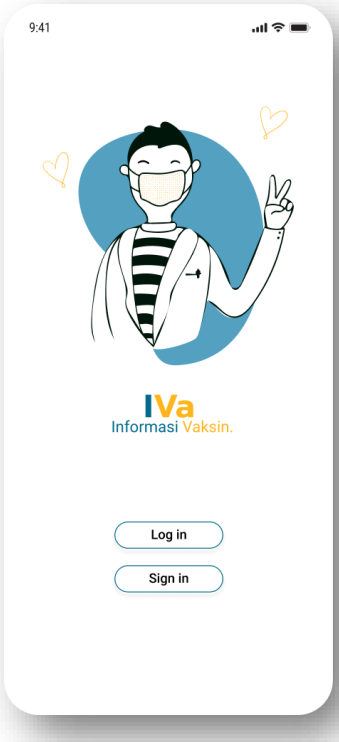

Figure 2. The front-page

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On this page there are also two buttons, namely 'Log in' and 'Sign in'. The Log in button functions for users who already have an account and want to enter the application. While the Sign in button functions for new users who do not have an account and want to create a new account. Next is the main page or homepage of the IVa application. The main page design for the IVa application is shown in Figure 3.

Figure 3. The main page

On the main page, there are 2 core sections of this application, namely articles and information on vaccine schedules. Users can immediately see the headline article about vaccines on the main page, the articles presented are factual and up-to-date. This menu/section is created to solve the existing problem, namely the number of people who are consumed by articles that do not have a credibility that can be accounted for. Users can also view vaccine schedules based on the vaccine variant that the user wants to search for, such as the second dose of the Sinovac vaccine and others. Next up is the vaccine page. The vaccine page is shown in Figure 4.

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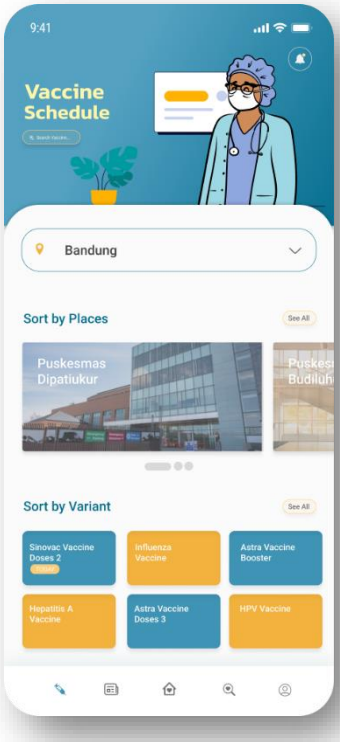

Figure 4. The vaccine pages

The user can change the location according to where the user wants to find the vaccine schedule he needs. When the user changes the location, the content will change according to the selected location. Users can search for the appropriate vaccine schedule based on the place and the desired vaccine variant. For example, when the user selects a location in Bandung, the user can search for vaccine schedules at health centers spread throughout Bandung. In addition, the user can also search for the vaccine schedule according to the vaccine variant that the user wants to find. The vaccine menu was created because not all health centers have a platform to deliver the available vaccine schedules at their health center. Often people find it difficult to get information on vaccine schedules available at the nearest health center. Therefore, this application can help users to find vaccine schedules and also help health center to distribute information on vaccine schedules available at their health centers. Users can not only see the available vaccine schedules, but users can also register themselves for vaccinations at the selected health center.

Next up is the article page. On the article page, users can read various articles about vaccines, in addition to articles on this page, there is also updated news about vaccines. This page aims to maximize the role of the media in the dissemination of information. Indonesian society has experienced a crisis of literacy urgency which has led to the existence of anti-vaccine society groups. Anti-vaccine communities are those who do not agree with the use of vaccines, there are even people who spread hoax news about vaccines to incite people. To overcome the problem of people who are consumed by hoax issues is to publish news/articles that have good credit and are factual. The article page is shown in Figure 5.

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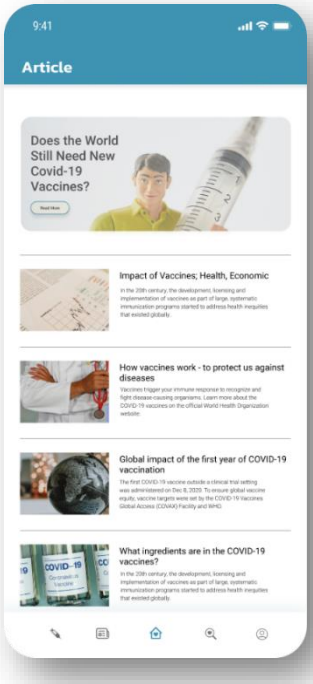

Figure 5. The article pages

On this page, users can read articles about vaccines and the latest information about COVID-19. In order not to be consumed by the circulating hoaxes, the article page is also intended to educate about this vaccination. In addition, to make it easier for the public to find more information about vaccination, the next search page is shown in Figure 6.

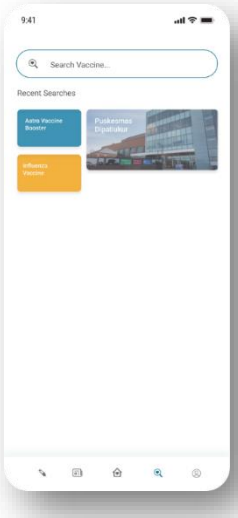

Figure 6. The next search pages

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This is the display of the search or search page. On this page, users can search for information such as vaccines to be used, health facilities to be addressed, and articles about vaccines. Not only the covid-19 vaccine but other vaccines such as the influenza vaccine can also be found in this IVa application. As we know, the spread of vaccination has been widespread. This is done so that people can easily get vaccinated and with that, it can speed up vaccination in Indonesia. Users can search for information by entering what keywords they are looking for, such as "Astra vaccine booster", "influenza vaccine", "Dipatiukur health center", or other keywords to make searching easier as needed. Then, the search page will bring it up. Next, is the user page shown in Figure 7.

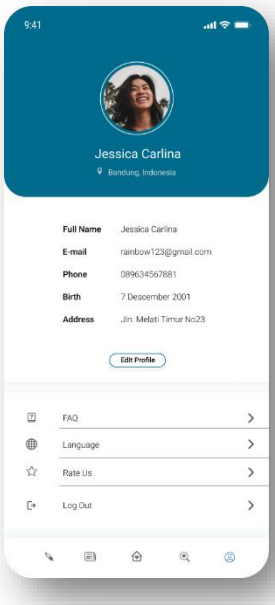

Figure 7. The user pages

On the next page is a display of registered user accounts. Registration of each program that serves to connect the user's data in the program. This account is clear with accurate info. In this account, there is user information such as full name, email, phone number, date of birth, and address. And if an error is found in the user's biodata, the account can be updated via profile editing. Further listed on this page are Questions and Answers (if there is something that is not understood by the user), Language settings (to set the language that is understood), Our values, and the last one is Exiting account (replacing the user account with someone else's account/exiting from the account).

4. Conclusion

The design of the Iva application is useful to provide facilities for the public to make it easier to find information about vaccines and also prevent the spread of hoax issues regarding vaccines. In this application, there are features such as vaccines, articles, search menus, and also user pages. Users can view the vaccine schedule and register to get vaccinated at the health

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centers according to the location they choose. The health centers will also be helped by the distribution provider platform.

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References

[1] Soegijanto, S. (2016). *Kumpulan Makalah Penyakit Tropis dan Infeksi di Indonesia Jilid 8* (Vol. 8). Airlangga University Press.
[2] Octafia, L. A. (2021). Vaksin Covid-19: Perdebatan, Persepsi dan Pilihan. *Emik*, *4*(2), 160-174.
[3] Edy, S., & Florina, I. D. (2021). ANALISIS SEBARAN HOAKS PADA FACEBOOK PERIHAL INFO SEPUTAR COVID-19. *Journal Signal*, *9*(2), 344-359.
[4] Nurkhofifah, N., Fadilah, R., Iman, N., Saputra, R. A., & Maulady, M. H. (2021). MENELUSURI RAGAM PERSEPSI MASYARAKAT PEDESAAN TERHADAP VAKSINASI COVID-19.
[5] Nurdiana, A., Marlina, R., & Adityasning, W. (2021). Berantas Hoax Seputar Vaksin Covid 19 Melalui Kegiatan Edukasi dan Sosialisasi Vaksin Covid 19. *ABDIMAS: Jurnal Pengabdian Masyarakat*, *4*(1), 489-495.
[6] Prasanti, D., & Fuady, I. (2018). Pemanfaatan Media Komunikasi Dalam Penyebaran Informasi Kesehatan Kepada Masyarakat (Studi Kualitatif tentang Pemanfaatan Media Komunikasi dalam Penyebaran Informasi Kesehatan di Desa Cimanggu, Kab. Bandung Barat). *Reformasi*, *8*(1), 8-14..
[7] Kusumawardani, D. A., & Werdani, K. E. (2019). Analisis Penggunaan Media Sosial dalam Program Promosi Kesehatan di Rumah Sakit Umum Daerah dr. Moewardi Surakarta. Prosiding Seminar Nasional Kesehatan Masyarakat Universitas Muhammadiyah Surakarta 2019.
[8] Nur, E. (2021). Peran media massa dalam menghadapi serbuan media online. *Majalah Semi Ilmiah Populer Komunikasi Massa*, *2*(1).
[9] Miller-Crews, I., Matz, M. V., & Hofmann, H. A. (2021). A 2b-RAD parentage analysis pipeline for complex and mixed DNA samples. *Forensic Science International: Genetics*, *55*(1), 102590-102599.
[10] Rudianto, R. (2020). The Implementation of the RAD model in the Development of Tender Selection Programs Using the AHP Method. *Journal of Informatics and Telecommunication Engineering*, *3*(2), 232-239.
[11] Kommey, B., Opoku, D., Lartey, J., Kumah, K., & Tantuo, M. (2022). A Simple, Low-cost, Efficient and Smart Consumer Gas Leakage Detection System. *International Journal of Informatics, Information System and Computer Engineering (INJIISCOM)*, *3*(1), 105-123.