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## Pandawa App: Student Guide Application after the Covid-19 Pandemic

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### ABSTRACTS

The purpose of this research is to design a mobile-based application that functions as a pre-lecture socialization platform so that the post-Covid-19 transition period can be maintained and carried out well. The research method used in this research is descriptive analysis with a qualitative approach. We used an object-oriented approach with the System Development Life Cycle Prototyping in the application development process. The results show that the Pandawa application development can provide lecture guidance properly using a digital platform that can be accessed via smartphone. The main concept of this application is to contain procedures or guidelines for implementing face-to-face lectures during the transition period from the Covid-19 pandemic in the New Normal era. In addition, this application also has a feature integrated with the local government for reporting if there are residents who test positive for Covid-19. Therefore, it can be followed up directly and quickly. In the end, this application is present as an information medium to adapt new habits in the world of education, especially at the tertiary level.

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## 1. INTRODUCTION

The COVID-19 pandemic, also known as the coronavirus pandemic, is an ongoing pandemic of coronavirus disease 2019 (COVID-19). It is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). With its high transmissibility, the virus's fatality rate is more than 1% (Ting, *et al.*, 2020). Therefore, Indonesia has been trying to minimize the Covid-19 infectious among Indonesian people by regulating the pandemic. The regulation contains about how to prevent themselves from the Covid-19 virus, such as avoiding crowds. However, if there is a positive case of the Covid-19, an isolation must be done by the infectious patient. Following the plague outbreak of influenza, during the isolation, the patient's restriction movements and their surroundings are monitored to avoid further spreads (Tognotti, 2013). Therefore, a technology, in this case, is needed as a medium to collect the data.

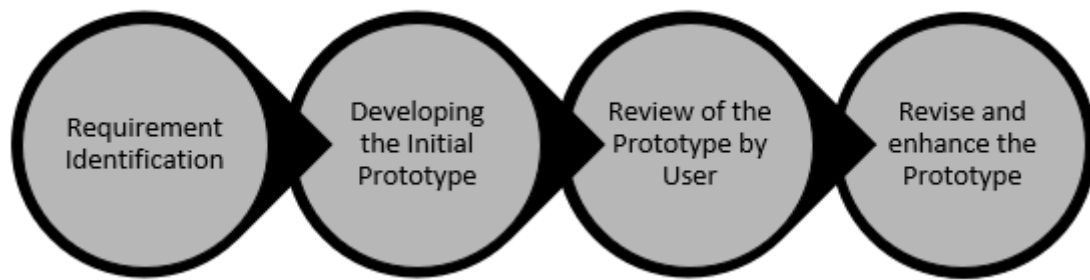
A study about artificial intelligence technology for the Covid-19 pandemic was conducted by Vaisha et al. In the study, it is stated that the technology is helpful to detect and predict of the Covid-19 cases (Vaishya, *et al.*, 2020). It is in line with Budd et al. They claimed that digital technologies significantly impact managing the Covid-19 data (Budd, *et al.*, 2020). A design of an information portal based on the Geographic Information System (GIS) was studied by Rezae et al. In the study, they used South Korea as the research object (Rezaei, *et al.*, 2020). Moreover, a study examines how technology can help detect cluster cases and predict the cases done by ting et al (Ting, *et al.*, 2020). There is also another

study examining technology as a tool for students to learn during the Covid-19 pandemic. The study stated that technology could help the educational field so that it would be easier (Radha, *et al.*, 2020). Therefore, from these studies, we could see that technology's role is very important, especially in this pandemic. However, only a few literature about a technology, especially application, guides people in the Covid-19 pandemic.

The purpose of this research is to design a mobile-based application that functions as a pre-lecture socialization platform so that the post-Covid-19 transition period can be maintained and carried out well. The research method used in this research is descriptive analysis with a qualitative approach.

## 2. METHOD

This study's research method was descriptive analysis using a qualitative approach to convey the research design. In designing the system, we used an android studio application with a prototyping system development method. The prototyping development method requires interactive communication from the user. Therefore, it can be assumed that the user can provide more input to result in a good application prototype with a complete specification (Salve, *et al.*, 2020; Iqbal & Idrees, 2017). This method is helpful in system development that focuses on the user interface. Therefore, a good communication between developers and application users is critical so that the application specifications will be good (Iqbal & Idrees, 2017). The prototyping system development method is shown in Figure 1.



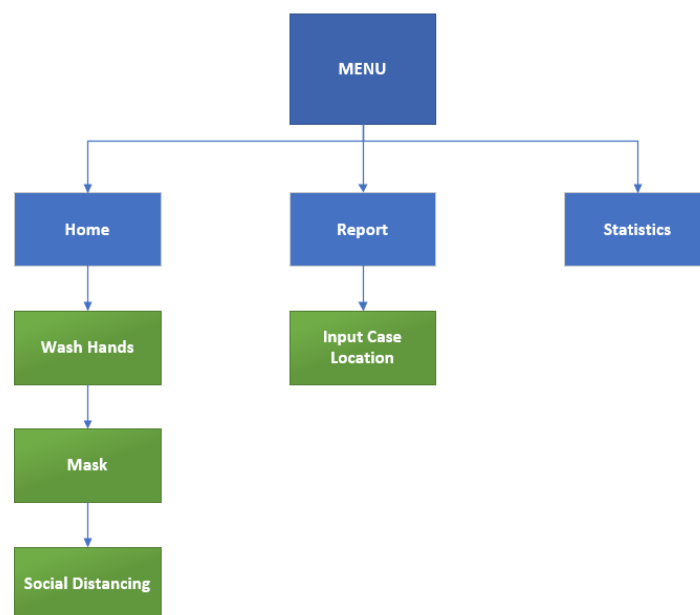
**Fig. 1. System Development Life Cycle Prototype**

Identifying the Requirement was done as the first step of the prototype system. At this stage, user interviews were carried to get information on things included in the system. After that, the developer will make an initial prototype design used as a discussion material to make better development. After the initial prototype has been successfully created, a review will be carried out by the user to provide suggestions or criticism of the initial prototype design. Therefore, the developer can improve its prototype according to suggestions and criticism until it is finished (Kumar, *et al.*, 2013).

### 3. RESULTS AND DISCUSSION

#### 3.1. Identifying Requirement

Pandawa application is designed to be an adaptation guide application for students during the Covid-19 pandemic. A simple research was done to map what needs to be included according to health protocol guide. This Pandawa application includes reporting and statistical features to report cases that occur in certain areas. Besides that, a statistical feature was also added. Therefore, monitoring cases of Covid-19 in certain areas will be easier. The Pandawa application menu structure is shown in Figure 2.



**Fig. 2. Pandawa Application Menu Structure**

Figure 2 shows the Pandawa Application menu structure design. The Home menu, which is the main menu, contains a guide that is divided into three sub-menus, namely the menu for washing hands, a guideline for wearing a mask, and a social distancing guideline. For the report menu, there is only a form for inputting Covid-19 cases in specific locations as real-time direct input from the user (community).

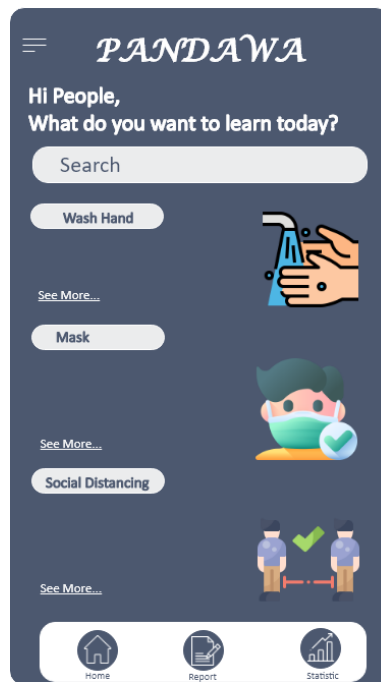
### 3.2. Developing the Initial Prototype

In the early stages of prototyping, the developer designs the front page of the Pandawa application. The Home screen contains the Pandawa logo and the slogan of the application. Home Pandawa Application display is shown in Figure 3.



**Fig. 3. Welcome Page Pandawa Application**

Figure 3 shows the Pandawa application start page before the user enters the main page. The main Pandawa Application page is shown in Figure 4.

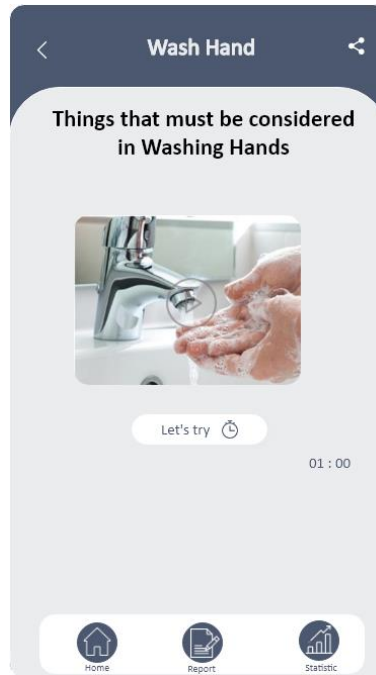


**Fig. 4. Home page Pandawa Application**

On this main page, three main contents of the health protocol guide will be displayed: Hand Washing Guide, Mask Guide, and Social Distancing Guide. The menu contains an explanation of rules and how to carry out health protocol correctly. This protocol guide is specifically for students in carrying out activities on campus and their daily activities.

### 3.3. Testing the Prototype

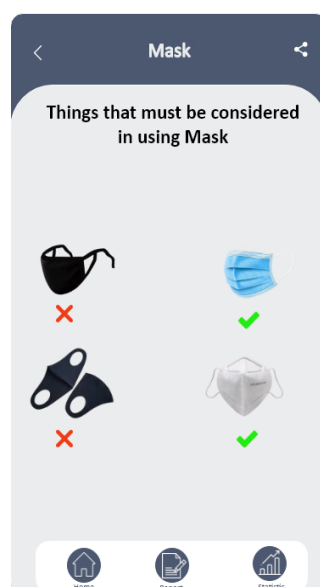
After the initial prototype has been successfully made, as an initial stage of discussion from the developer to the user, prototype testing is carried out to test the initial prototype that was made in the previous stage, namely regarding the three menu guidelines for student adaptation in maintaining health protocols in the university environment. The explanation of the three menus above is shown in Figure 5.



**Fig. 5. Wash Hand Guide Page**

Figure 5 shows the manual page for washing hands. This page will contain interactive videos as a reference in washing hands. In the video, a tutorial on handwashing will be shown. There are 7 stages, according to the direction of the World Health Organization, to wash your hands correctly and adequately. This video guide will then be explained according to these rules starting from the

stages and duration. In addition, users can also try the guide with the timer provided in the application as evidence of implementation in understanding the handwashing guidelines. After understanding and practicing the handwashing guide, the user will be directed to wear a mask properly guide. Guidelines for wearing masks is shown in Figure 6.



**Fig. 6. Mask Guide Page**

Figure 6 shows the rules for using masks. The types of covers recommended by the government also comply with WHO rules. As we know, the Covid-19 pandemic requires all people to wear masks, which could minimize the spread of the Coronavirus. The application page displays what types of masks that can be used and are prohibited. The government strictly prohibits One-layer cloth masks because they do not effectively prevent

the coronavirus, which is a very small particles. Thus, there are 2 types of masks recommended by the government for the public, namely 3 ply medical masks and KN95 masks. These types of masks meet the standards for maintaining public health protocols in daily activities. Furthermore, the guide page for maintaining distance is shown in Figure 7.

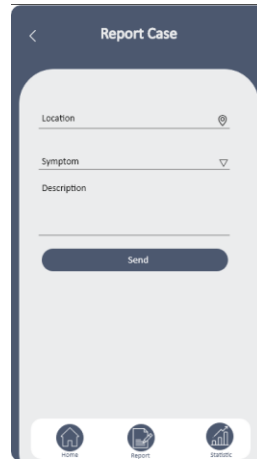
**Fig. 7. Social Distancing Guide Page**

Figure 7 shows a guide for keeping a distance. Apart from being equipped to wash hands and mask, keeping a distance is also important. With this guide, it is expected that users can understand the importance of maintaining a distance with a minimum distance of 1-meter. It is done to avoid the spread of the coronavirus among people, especially students. The three elements above, starting from washing hands, wearing the correct mask, and keeping a distance, are an integral part of adapting new

habits to carry out activities during this pandemic.

### 3.4. Revising and Enhancing the Prototype

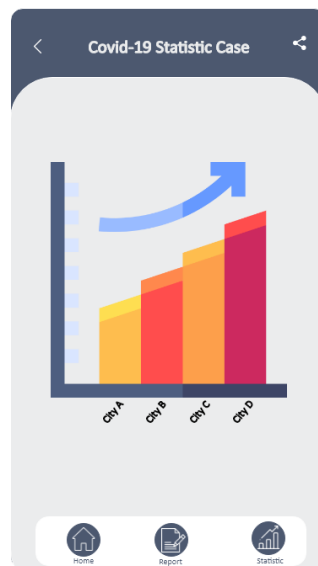
Prototype testing has been carried out to provide a Covid-19 data report form for the users (students). It can be used for students or users if there are any new positive cases of Corona virus. Figure 8 is shown the Covid-19 case report form page.



**Fig. 8. Report Case Covid-19 Page**

Figure 8 displays the reporting page for Covid-19 cases as real-time input to display case statistics on the statistics page (see Figure 9). In this form, the user is asked to fill in the location of the new positive case. The user can adjust the location by using Maps facilities, which are provided in the application. Furthermore, the user is asked to fill in the symptoms experienced by the patient

around them. This form is given several choices of symptoms such as cough, flu, or no symptoms option. In this form, users are asked to describe positive cases of Covid-19 that have occurred in their area. If all the forms are complete, just press the submit button. Furthermore, to see the Covid-19 case statistics in the city, the Statistics page will be shown in Figure 9.



**Fig. 9. Statistic Page**

Figure 9 shows the graphical statistical data of Covid-19 cases that have occurred in several regions. This application contains guidelines for

students in carrying out lectures in the middle of a pandemic transition. This graphical data could be used to reference if students want to visit a specific or any

area. Therefore, they can adapt the guidelines which was shown on the application.

Pandawa application prototype was designed to help students in adapting the Covid-19 pandemic. The application provides several guides, statistic data, and a form about a new cases in a specific area. This application was also designed because students need to go to universities during this pandemic. This study produces an application prototype that does not exist in previous studies (Kondylakis, *et al.*, 2020; Islam, *et al.*, 2020; Rafdhi, *et al.*, 2023). So that in the end the results of this research become the latest innovation in the midst of the Covid-19 pandemic to be implemented and developed further (Mulyana, *et al.*, 2021; Anggraeni, *et al.*, 2020; Huwaidi & Nandiyanto, 2021; Soegoto, *et al.*, 2022).

#### 4. CONCLUSION

Pandawa application is designed to be a post-pandemic student application model. In this application, there are information to prevent the spread of infection, including wearing a good and correct mask, washing your hands with soap regularly, and keeping your distance from people around you. Students can also view charts in several areas to be more vigilant. Other than that, it is also providing a form to report if there are cases around it.

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