

E-Kentongan Information System Based on Android *Application* in Pekon Bandung Baru

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Article Info	ABSTRACT
Keywords: <i>E-Kentongan, GIS Android Application, Android Studio, Mysql</i>	ABSTRACT <i>E-kentongan is an Android Application with Location Based Service Application that allows users to access maps or entity methods in real time as well as innovating the use of the Threat Button to send notifications to fellow users of hazards such as theft, natural disasters, fires, robbery and other bucks that require assistance by other users. In making this system used anroid GIS (geographic information system) based software development technique. In this research, the software used in making the E-Kentongan application uses Android Studio software and the database used is Mysql. With the Android-based E-Kentongan application, it is hoped that it can help the Pekon Bandung Baru community in providing emergency information to other people, so that people who need emergency help get help quickly by people in Pekon Bandung Baru.</i>
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1 INTRODUCTION

The general public is currently moving, evolving, innovating towards the age of digitalization or the period of the industrial revolution with the consequence that information is easily obtained, developed, used and even manipulated. An information society is formed by education where the majority of the workforce consists of information workers and information is very important in this digitalization era. Communication devices and methods make the flow of information so fast that there is no longer a limiting distance in transferring information [1].

Today's disasters often appear in the news media, ranging from floods, fires, earthquakes, volcanoes, tsunamis or others. Disaster will not be known to come to befall. When the disaster comes, maybe humans will forget the surrounding situation, because they think about their own safety and valuables [2]. Often when someone experiences theft, robbery, fire, severe illness or even wants to give birth, many people are confused about what to do and ask for help where. Because it is very urgent and needs help quickly.

With this description, researchers developed an Android-based E-Kentongan application and GIS (geographic information system). Serves as a notification or alarm sign that indicates a disaster or danger that is happening to the

community and is included in the emergency level and requires immediate help along with the location of the community who needs help.

2 RESEARCH METHODS

The preparation of this research uses applied research methods. Applied research methods are research directed to obtain information that can be used to solve problems with the aim of applying, testing, and evaluating practical problems [17].

This research method is then divided into two techniques, namely data collection techniques and system development techniques, there are several stages carried out.

Data Collection Techniques The methodology used in the process of data collection and research is as follows:

1.Observation

Observation is a way taken in making direct observations.

2.Interview / Interview

Is a question and answer activity with a supervisor or person who has credibility in providing answers on matters related to the object of the report.

3.Literature Study

This technique is used to collect data with reference materials from books, documents, which are directly related to the issue under discussion.

4.Documentation

Data collection techniques by collecting and analyzing documents both written, image, and electronic documents.

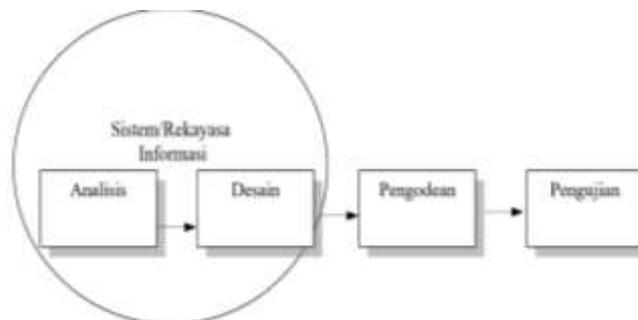
There are several methods used in conducting this research, including:

a. Writing Method In this study, the author uses a descriptive writing method where in descriptive writing the results of the research are written clearly and describe the essence of writing

b.Software Development Methods

In this study in addition to using the writing method, the author also used software development methods to develop this Web-based Academic Information System, while the method used was SDLC Waterfall [18].

The explanation of this method is as follows:



Source: Sukamto and Saladin (2013: 29)

Figure 1. Research Framework

- Analysis

In this stage the author begins to analyze what are the needs of the system, ranging from the functional needs of the system and the non-functional needs of the system. Here are the stages of analysis carried out:

- Use Case Diagram

Use case diagrams are used to explain and illustrate the system and user behavior towards the system itself. Use case diagrams emphasize what the system will do rather than emphasizing how the system acts.

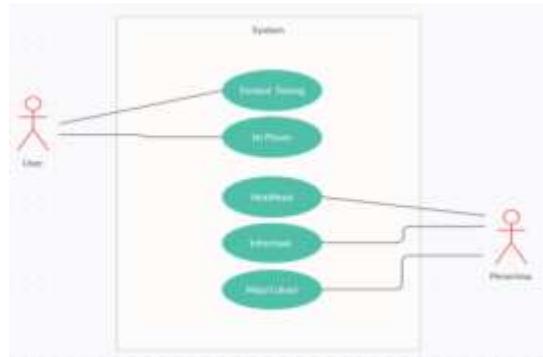


Figure 2. Diagram Use Case Diagram

- Activity Diagram

Activity diagrams are used to illustrate the activity flow of the system to be created. Here is a diagram of his activity:

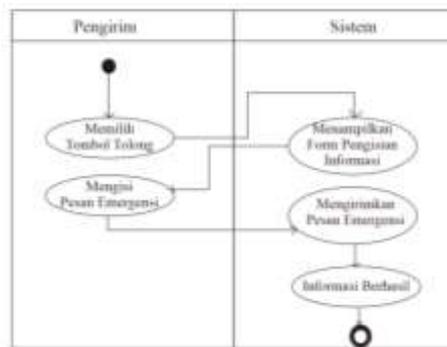


Figure 3. Activity diagram Send Information

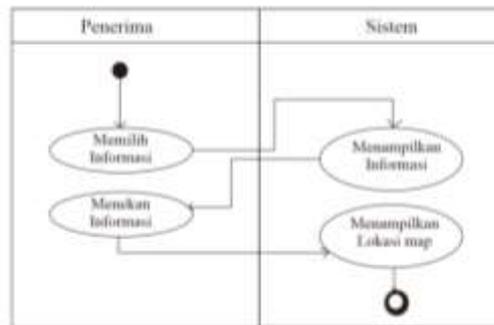


Figure 4. Activity diagram Receive Information

- Design

The design stage is the advanced stage of the analysis stage where in this stage the design of the application is presented such as interface design, and data base design that will be applied to the e-kentongan information system to be created.



Figure 5. Send view

- **Coding**
At this stage the author applies the data base design and interface design into the programming language, where programming uses Android Studio.



Figure 6. Send Information view

- **Testing**
The test stage is the final stage in the waterfall method where in this testing stage the blackbox testing technique is used.

3. RESULTS AND ANALYSIS

E-Kentongan Initial View



Figure 7. Send view

Display of E-kentongan Send Information

Information send display is the display of users sending information to other users who are emergency or need quick help from other users.



Figure 8. Send Information view

Information Notification Display

The notification display received by other users is in the form of kentongan voice messages that will always sound continuously, and will not stop if the user does not open information.

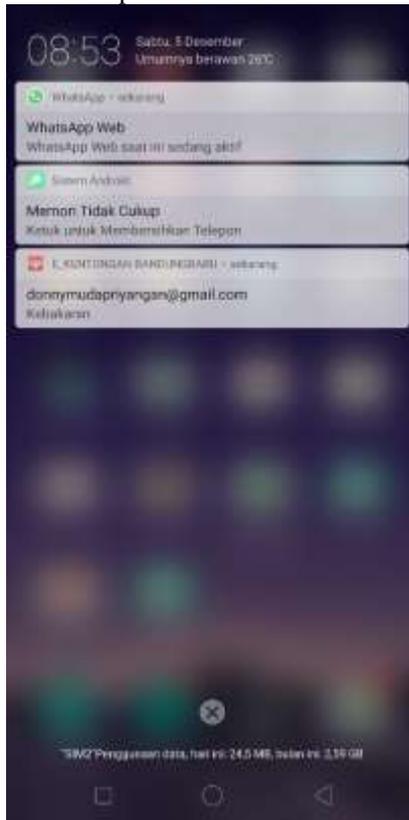


Figure 9. Information Notification Display

Information Receiver Display

Display Informational messages sent by users to recipients

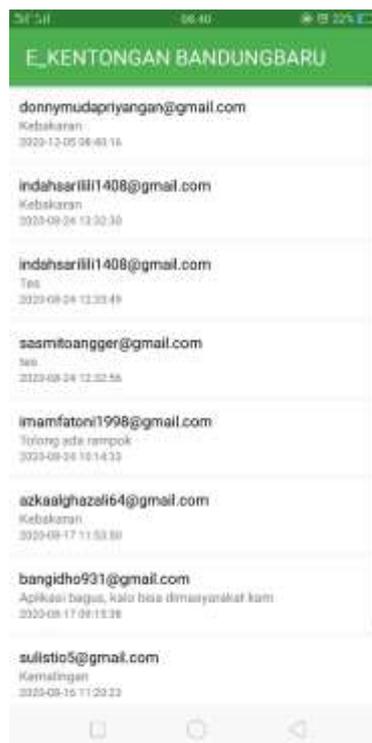


Figure 10. Information Receiver Display

Display Location of Information Sender

Display of sender location information



Figure 11. Location view

View Route sender Information

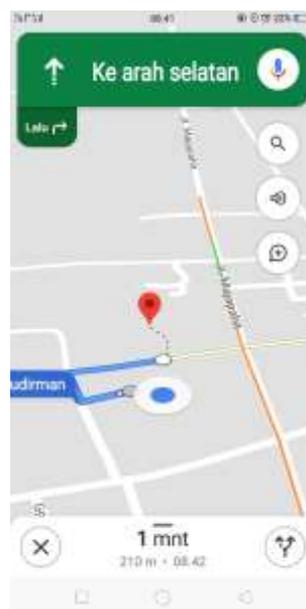


Figure 12. Route View

Table 1. E-Kentongan system testing

Test Class	Test Scenario	Result	Conclusion
Help button	Choose the please button	Display emergency input form	Succeed
Notification	Choose the user-submitted notification	Displays notifications in the form of information sent and kentongan literature	Succeed
Help Information	Press the help information button	Display information from users	Succeed
Map button	Press the folder key	Display sender location information	Succeed

4. CONCLUSION

E-Kentongan Information System based on Android Application and GIS (*geographical information system*) is made using Android Studio software and mysql database. The application of the e-kentongan information system in the New Bandung pekon can help the community if they need help such as theft, robbery, fire and others that are emergency in nature so that other people can get information quickly so that they can help people who need help

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