Development Of Mapping Area Software For Dismissal People Affected By Covid-19

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Submission date: 09-May-2023 06:16PM (UTC+0700)
Submission ID: 2088478284
File name: 19a._Development_Of_Mapping_Area_Software.pdf (386.58K)
Word count: 2725
Character count: 14312

2020 the third International Conference on Vocational Education and Electrical Engineering (ICVEE)

Development Of Mapping Area Software For Dismissal People Affected By Covid-19

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***Abstract*— The spread of the Covid-19 Virus which has a major impact on various sectors of human life, from health problems that have caused many deaths and also economic impacts. The decline in people's purchasing power has caused the industry to experience a decrease in sales turnover, causing business actors to carry out budget efficiency by terminating employment. In terms of assisting government programs in assisting victims of layoffs, a system for mapping the locations of these victims is needed. In building a mapping system for the location of victims of layoffs using the XP method which is part of agille. The system can display the location area down to the districts level. By using a system of mapping the locations of dismissed communities, it can assist in data collection and distribution of assistance.**

Keywords—mapping, XP method, dismissed, Covid-19

I. INTRODUCTION

The existence of the Corona Virus or what we more often call Convid-19 is a very difficult problem faced by the world, many countries provide information that the virus causes enormous problems in various sectors, from the Health sector the Virus causes millions of people infected died, many medical personnel who fought as the front guard of the process of treating this viral infection died.

Economic problems have become a crucial problem where the impact of health problems has caused several regions to decide to carry out PSBB (Large-Scale Social Restrictions). the purchasing power of the community which means that business actors must think about efficiency strategies on all sides, with uncertainty about when the end of this pandemic has caused many business actors to close their businesses.

The impact of this economic problem is layoffs (termination of employment) which causes workers to lose their livelihoods as life support. This is exacerbated by the prohibition on people not to carry out activities outside the home.

In the development of the mapping system of the affected community areas, dismissal uses the XP development method. This method is part of a collection of the most recent agille methods compared to other development methods. This method has 4 stages, namely planning, designing, coding, and testing[1]. With the xp method, it will make it easier to create a mapping system for the area. This system can display information on the location of the residence of people who have been laid off due to covid-19. So that the government or parties willing to provide assistance can use this system[2].

II. RELATED WORK

A. *ffected Corona (Covid-19)*

The impact of the Corona virus (Covid-19) outbreak is not only detrimental to the health side. The virus that originated in the city of Wuhan, China, has even affected the econo es of countries around the world, including Indonesia. The global economy is certain to slow down, following a stipulation from the WHO which mentions the Corona outbreak as a pandemic affecting the usiness world. In Indonesia, the government is trying to make various efforts to r uce the impact of the Corona virus on the industry.

Several economic stimuli were launched, even President Joko Widodo asked all parties to carry out social distancing including Work From Home (WFH) and several Regional Heads decided t ismiss teaching and learning activities. The following is the impact of the Covid-19 pandemic on the Indonesian economy and Government policies: First is high level, such as automotive manufacturing companies are under great pressure because of their dependence on global supply chains which hampers the production process.

The garment industry, which implements a system of reducing employee density by means of two work weeks and two weeks off to reduce the spread of the corona virus, of course this has an impact on decreasing production so that companies can experience losses that lead to layoffs.

The tourism and aviation sectors are empty of passengers due to social distancing policies, as well as non-food retail that has fewer visitors. The two levels are moderate, such as the film industry which reduces the shooting process, the media industry and the press which are hampered by finding content and news. The three low levels, such as the service sector industry, have few obstacles, namely service orders that have decreased but can still be overcome and are not too affected.

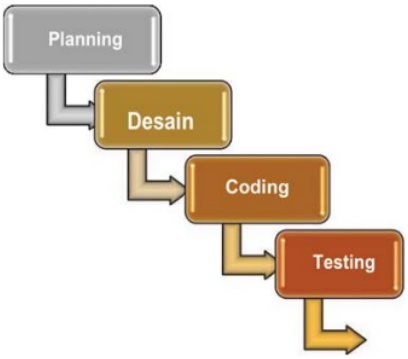

Figure 1 XP Methode

B. Dismissal

The economic downturn caused by the spread of the Corona Virus in Indonesia ultimately led to dismissed. This is certainly undesirable for both the employee and the company. However, various factors are the reasons. Especially at this time, the company's inability to finance operations was the main reason why layoffs were finally implemented. The number of workers who have been laid off and affected by Termination of Employment dismissed due being affected by Covid-19 has exceeded 2 million people. Based on data from the Ministry of Manpower as of April 20, 2020, there were 2,084,593 workers from 116,370 companies who were sent home and laid off as a result of this corona pandemic. As for the details, the formal sector 1,304,777 workers were sent home from 43,690 companies. Meanwhile, 241,431 people were affected by layoffs from 41,236 companies. "The informal sector was also hit by the loss of 538,385 workers affected by 31,444 companies or MSMEs," said Manpower Minister Ida Fauziyah.

C. Mapping Area

A system that can support (process) spatial (related to aspects) decision-making and is able to integrate location descriptions with the characteristics of the phenomena found in that location. The complete mapping will include the methodology and technology required; namely, spatial data, hardware, software, and organizational structures[3]. Technology with an output in the form of mapping can be used for scientific investigations, resource management, development planning, cartography and route planning. For example, GIS can help planners to quickly calculate emergency response times in the event of a natural disaster, or it can be used to search for wetlands that need protection from pollution[4].

D. XP

Extreme Programming (XP) is a simple software development method and includes one of the agile methods pioneered by Kent Beck, RonJeffries, and Ward Cunningham[5]. XP is one of the most widely used agile methods and is becoming a very well known approach. The goal of XP is a team formed between small to medium sized courses, no need to use a large team. It is intended to address unclear requirements and requirements change very quickly [6].

There are four steps that must be done in the extreme programming (xp) method, namely[7]:

1) Planning (Perencanaan).

This stage is the first step in system development where in this stage several planning activities are carried out, namely, identification of problems, analyzing needs to determining the schedule for the implementation of system development[8].

2) Design (Perancangan).

The next stage is the design where at this stage modeling activities are carried out starting from system modeling, architectural modeling to database modeling. System and architecture modeling uses Unified Modeling Language (UML) diagrams while database modeling uses Entity Relationship Diagrams (ERD)[9].

3) Coding (Pengkodean).

This stage is an activity of implementing modeling that has been made into a user interface using a programming language. The programming language used is PHP with structured methods. For database management systems using MySQL software.

4) Testing (Pengujian).

After the coding stage is complete, the system testing stage is then carried out to find out what errors arise when the application is running and to find out whether the system being built is in accordance with user needs. The test method used at this stage is the blackbox testing method, where tests are carried out on several forms to enter whether they are running according to their respective functions[10].

III. PROPOSED METHOD

Research subjects are the Domain of Technology and Information Systems, designing information systems that can carry out entry of workers affected by layoffs, process data entry into a database of workers and visualize data bases of workers affected by layoffs[11]. In developing the mapping software, people affected by layoffs refer to the waterfall method which is described as follows:

In its development the waterfall method has several coherent stages: planning, designing, coding, testing.

a. Planning

At this stage, an analysis process will be carried out on the functional needs of the Community Mapping Software development affected by layoffs, from the results of the analysis at this stage will be input for the next stage.

b. Desain

At this stage, an analysis process will be carried out on the functional needs of the Community Mapping Software development affected by layoffs, from the results of the analysis at this stage will be input for the next stage[12].

c. Coding

This stage will translate the design into a module that is integrated into a tool that can accommodate the designs that were in the previous stage

d. Pengujian

At this stage the resulting tools are tested into unit testing so that accurate results will be produced

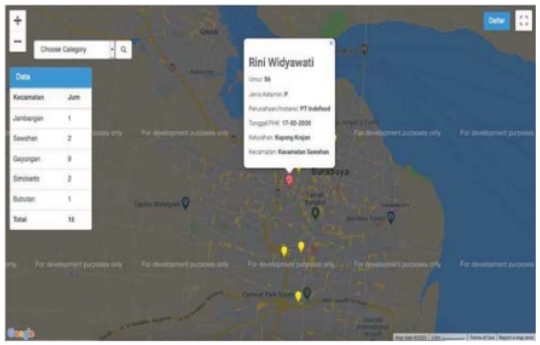

Figure 2 Homepage User

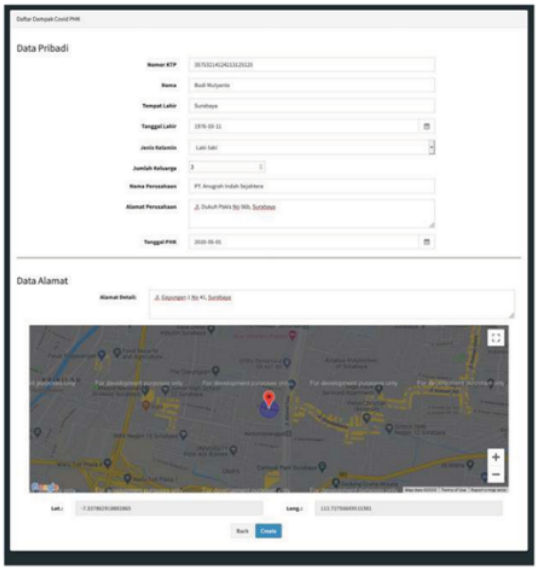

Figure 3 Input Data

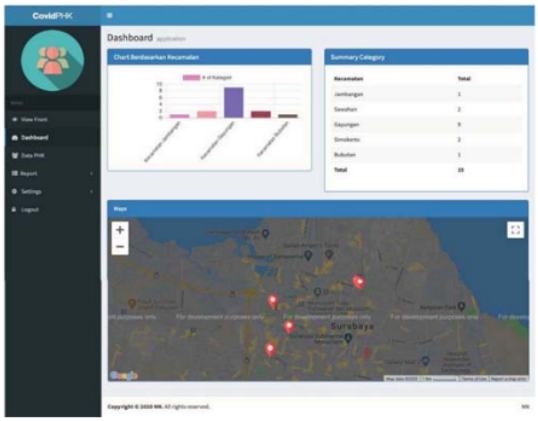

Figure 5 Homepage Admin

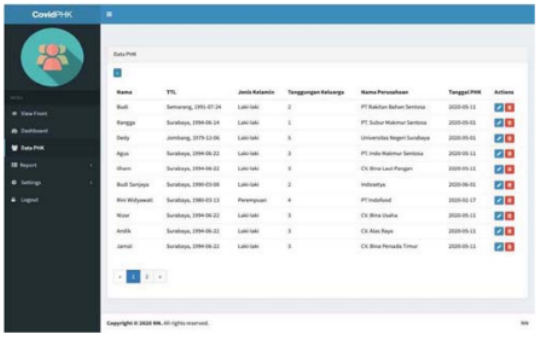

Figure 4 Data Page Admin

IV. EXPERIMENTS

A. *Research result*

The results of the system built are as follows.

1. Homepage

On this home page, an area in Surabaya will be displayed directly, where there are several filter options for which district to choose. After selecting the desired sub-district, data will be displayed on the number of people affected by urban village layoffs based on the selected sub-district. In the area view per selected sub-district there are red, yellow, and green icons. This icon means that the red icon shows the person has been laid off for more than 3 months, the yellow icon shows the person has been laid off for 2 months and if it is green, it shows the person has been laid off for 1 month. Besides that, it can also display the profile of the names of the people affected by the layoffs in the form of name, gender, company name, date of dismissal, sub-district and sub-district. This starting page is presented in Figure 2.

2. Input

In this display system users can register themselves directly online by filling in some data on the KTP number, name, place and date of birth, gender, number of families, company name, company address, date of dismissal, address and gps coordinates of residence. The system display is presented in Figure 3.

3. Homepage admin

This admin page is used by officers who are useful for setting up the overall system. On this page there is a front view menu which is useful for viewing the system display by the user. The next menu is a system dashboard that displays information on the mapping area along with data per district. The next menu contains layoff data which functions to manage layoff data. The report menu here the system can display a report in the form of an attachment containing a graph of the number of layoffs per month. This logout menu serves to end system use. The admin start page display can be seen in Figure 4.

4. Data page Admin

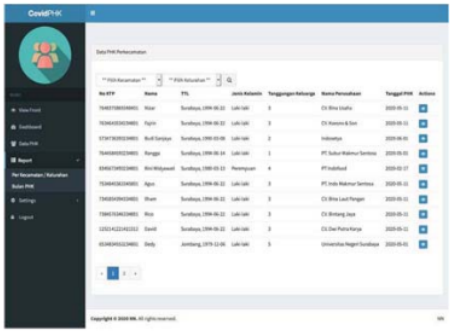

Figure 6 Report Page

This layoff data page can be used if logged in as admin. This menu presents a page for managing layoff data that can carry out the process of adding, editing and deleting the data of people affected by layoffs. This page can be seen in Figure 5.

5. Report Page
   This report page is able to present information on people affected by layoffs per district and per village, as seen in Figure 6.In addition, this report menu can also present a bar graph of the number of employees who have been laid off in any month.

B. Discussion

This information system for mapping community areas affected by layoffs in Surabaya can be used as an information center or database to see the number of people affected by layoffs at the districts and sub-district levels in Surabaya. This system is able to present the complete information up to the GPS coordinates of the residence address. So that it can be used as a tool in finding detailed information. This system has been tested directly using some training data and can already be used using the original data.

V. CONCLUSION AND FUTURE WORK

This information system for mapping community areas affected by layoffs in Surabaya can be used as an information center or database to see the number of people affected by layoffs at the districts and sub-district levels in Surabaya. This system is able to present the complete information up to the GPS coordinates of the residence address. So that it can be used as a tool in finding detailed information. This system has been tested directly using some training data and can already be used using the original data. With this system, policy makers, in this case the local government, can see directly which areas there are people affected by layoffs online so that later there is a solution to the existing problems.

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