RESEARCH ARTICLE

THE DESIGNING OF ANDROID-BASED SMART RT-RW INFORMATION SYSTEM PERUMAHAN PERMATA DEPOK REGENCY, KELURAHAN RATU JAYA, DEPOK, INDONESIA

Prionggo Hendradi[1], Yusriani Sapta Dewi[1], Kiki Kusumawati[2] and Wawan Kurniawan[2]

1. Universitas Satya Negara Indonesia.
2. Jalan ArteriPondok Indah No.11 Kebayoran Lama Jakarta Selatan, Jakarta Indonesia.

Manuscript Info

Abstract

The monograph is a detailed administration of statistics on government and human resources. As the smallest form of government, the RT/RW performs administrative services in the form of RT/RW cover letters, monographic population data when needed to collect data on potential citizens, economic status, assistance and health data. For RT/RW cover letter service facilities, every citizen certainly expects a fast and precise service. For this reason, the RT/RW administrators need supplements to make it easier for them to provide services to the community, namely the development of an application that can support the performance of the RT/RW especially in citizen administration facilities. By developing a citizen information system; then all needs related to citizens can be accommodated online, especially in the most basic matter, namely the management of citizen data. The main problems faced by RT 01 and RT 03, RW 11 Permata Depok Regency are data that is not properly updated, financial reports that are not transparent, it is difficult to request data from residents, some data in hardcopy form is easily lost, various information is not conveyed to residents , the mailing service can not be fast. The main goal of the Community Service Team for the Kegiatan Kampung Bangkit (KKB) of Universitas Satya Negara Indonesia is to provide solutions to partners' problems by creating a prototype of a smart RT/RW management system in the form of an Android-based Smart RT-RW Information System Design (SIAR). The activities were carried out in order to observe the needs of the residents, develop the SIAR (Citizen Administration Information System) application, socialize and train the residents to use the application. The results of this Community Service activity worked well. The residents were enthusiastic and satisfied with these activities based on the testimonials that were carried out. Applications are very useful for managing citizen data in a detailed and sustainable manner.

Introduction:-

As the smallest form of government, RT/RW carry out various administrative services in the form of RT/RW cover letters, population monograph data when needed to collect data on potential citizens, economic status, assistance and health data. RT/RW activities also collect community aspirations in the form of reports which are then submitted

Corresponding Author:- Prionggo Hendradi
Address**:-** Universitas Satya Negara Indonesia.

directly to the lurah for follow-up, including supporting activities that are either called for by the lurah or residents' initiatives regarding community self-help in maintaining cleanliness and environmental sustainability. In addition, community participation also plays a very important role in the success of proposals for development project funds based on real needs. For RT/RW cover letter service facilities, every citizen certainly expects a fast and precise service. However, not all of these expectations can be realized properly due to various existing obstacles. One of the obstacles is due to the assignment as an RT/RW administrator who is held by a person whose main job is an office/private worker, so that the correspondence service takes time; Waiting for the RT/RW administrators to pause from their main work activities. For this reason, the RT/RW administrators need supplements to make it easier for them to provide services to the community. Entering this era of information openness, supplements are needed to support the performance of information technology-based RT/RW, especially now that Indonesia is implementing the New Normal since the Covid 19 pandemic was announced in mid-March 2020 until now. Restrictions on mobility (social distancing) in order to prevent the spread of Covid 19, become an obstacle in itself for interaction between residents and residents and RT/RW. For this reason, it is necessary to develop an application that can support the performance of RT/RW, especially in citizen administration facilities. By developing a citizen information system; then all needs related to citizens can be accommodated online, especially in the most basic matter, namely the management of citizen data.

The general goal in community service is to realize the Kampung Bangkit Activity Program and the specific goal is to provide solutions to partner problems by creating a prototype smart system for RT/RW management in the form of an Android-based Smart RT-RW Information System (SIAR); with the hope that the system can accommodate administrative problems on partner problems.

Implementation Method:-
Community service activities with the Kegiatan Kampung Bangkit (KKB) program which are carried out in RT 01 and RT 03, RW 11 PerumahanPermata Depok Regency, KelurahanRatu Jaya, Depok City, West Java are making an Android-based Smart RT-RW Information System Design, with the method The SDLC (Software Development Life Cycle) method is commonly referred to as the System Development Life Cycle. The SDLC method is the process of creating and modifying systems as well as the models and methodologies used to develop software engineering systems. The SDLC approach used in software development in this activity is the Waterfall method. SDLC stages are described as follows:

Planning
The phases in the system development model in this activity have a systematic sequence starting from the process of planning, analysis, design, and implementation of the system. This first stage will involve the head of the proposer and members of the KKB-Team as well as students in helping to record and prepare all the database needs that have become input at each stage later.

Requirements Gathering and Analysis
At this stage, the KKB Team collected the needs to be achieved by the program in full to be analyzed and defined through observation and interviews by giving several direct questions to the residents of RT 01 and 02 in RW 011. From the observations and interviews, many facts were found to be background of the problems faced by the KKB Team in managing citizen data at any time. The analysis carried out by the KKB Team was in the form of : 1)Technology Analysis : a) Whereas the RT/RW residents do not yet have an online-based information system in the implementation of citizen data collection; b) That the database of RT/RW residents is not completely available and is not accurate, which is an obstacle to meeting internal and external information needs within the residents of RT 01 and RT 03; c) Whereas the implementation of citizen data in the two RTs by the KKB-Team has not been able to provide detailed, fast, accurate and up to date information on citizen data so that the presentation is not yet effective and efficient because the application has not been used at all. 2) Information Analysis :a) Complete and accurate citizen data is required for each need and is easily managed by admin staff through the use of the RT/RW application; b) It needs to be equipped with an application guide to run the RT/RW information system in the scope of Depok housing residents in the two RTs, because the implementation of this application requires cooperation with the appointed admin staff; c) Collaboration is also needed with residents of both RT and RW11 to obtain complete data to accommodate the needs of an android-based RT/RW information system.

At this stage, all members including the chairman of the proposer have roles and duties. This is due to the need for data and designs that are in accordance with user needs so that these roles and tasks are important for the

continuation of the next stage. Students are expected to give roles and tasks to collect all hardcopy and softcopy data documents needed at this stage.

Design
At the design stage, the KKB-Team made a system design design using Data Flow Diagrams (DFD) which were used as: Context Diagrams (Zero Level Diagrams), Level 1 Diagrams, Level 2 Diagrams (Detailed Diagrams) and database designs which are described through table descriptions and Table Relations. The roles and tasks at this stage are fully carried out by members whose assignments are programmers and information technology technicians to design the appearance and design the system that will be created and assisted by students in drawing the database design.

Implementation
At the following stage, the KKB Team began coding using the PHP (Hypertext Preprocessor) programming language to create an RT/RW Information System based on the UML (Unified Modeling Language) diagrams that had been previously designed. Furthermore, the researcher will create a MySQL database (My Structured Query Language) according to the database design that was designed in the previous stages. In coding, Team-KKB uses PHP Maker version 2020 for the coding process in a fairly short time with optimal PHP code results. This stage involves 3 (three) members because besides the program must be able to run, the database must be certain and correct and accurate including the mathematical logic (calculations) in it, while students are required to help check the database of the process results of system implementation.

Testing
In this next stage, the KKB-Team conducted a trial by entering sample data, and testing all system flows that had been made at the implementation stage. If a coding error (error/bug) or logic error is found from this implementation, it will be returned to the previous stage, namely the design and implementation stages. The role and duties of the members in their assignment as programmers and information technology technicians are to ensure that the program doesn't have errors/bugs when it runs. Students are obliged to examine the results of data trials in the new database with old data.

Maintenance
At the final stage in the development of this system is maintenance. Maintenance will be carried out if the system has been used by system users (users) which in this case are residents of RT.01 and RT.03, and further repairs will be made if there are still errors in coding (errors/bugs) in the programs made. At this stage the roles and duties of all members and chairmen are needed in monitoring the smooth and correct running of the system and assisted by students physically regarding citizen data as the database used.

Supporting tools
To support research needs, researchers need minimum software and hardware specifications as an overview of science and technology that will be implemented in target partners (RT.01 and RT.03) as follows:
1. Computer/PC (Personal Computer) with the following specifications:
• Processor: Core I5 4210U 1.70 Ghz.
• Installed Memory (RAM): 8.00 Gb.
• VGA Nvidia GeForce CUDA 3.0
• System Type: 64-Bit Operation System.
• Usb Webcams

Used as a server used by RT
2. Software (Software)
• Android Studio
• Microsoft Visio
• Photoshop
• Macromedia Dreamwaver

Used as a supporting device in operating the system to be built

Design Results
The name of the application used is SIAR (Citizen Administration Information System).with the logo as follows:

Figure 1:- App logo.

This community service activity in the activity of making the Android-based Smart RT-RW Citizen Information System application has the main function of facilitating the management of RT citizen data for all purposes needed in the Permata Depok Regency environment in particular, and in general for families, sub-districts and even for the national interest. The special function obtained as follows:1). Availability of neat and accurate and up-to-date citizen data for all needs, such as data on general election rights, regional head elections, vaccine data needed by the Puskesmas as well as data for social assistance.2). Transparent citizen financial reports, so as not to arouse suspicion among residents in terms of financial use.3). Fulfillment of citizen data which can be done quickly because there is citizen access to input data into system applications.4). Minimizing documents in hardcopy form because everything is in the form of a digital database. The data needs required by the village, sub-district and national level can be fulfilled quickly and accurately.5). All information can be conveyed through a citizen information system application that has been formed, so that no citizen is left out with all the information available.6). Fulfillment of correspondence can be done more quickly because there is no dependence on time problems for each RT administrator.

The benefits derived from this activity include:1). Provide convenience for managing RT citizen data for the benefit of RT-RW affairs in the PerumahanPermata Depok Regency area, especially RT 01, RT 03 -RW 11.2). Improvement of community values, where people become trained because they are familiar with digitalization technology programs. This is in accordance with the mission of the City of Depok, which is to improve governance and public services that are modern and participatory. With digitalization at the RT level, it will expedite all needs at a higher level of government.

This community service activity by implementing an Android-based RT/RW Smart citizen administration information system application has a good economic impact because there is ease in accessing information and exchanging information, through digitization, so this activity has a paperless impact (saving paper). This is in accordance with the mission of the city of Depok, which is very concerned about the environment. This application system can also save costs and time, is more practical and flexible.

The design of this administrative information system application also allows residents to interact by reading some of the information presented. Lots of business and entrepreneurial information that can be accessed and exchanged experiences. For example: residents who have commercial businesses can inform their business activities in this application through the admin. The point is this application will help residents' activities to be more efficient and can open new jobs so as to minimize unemployment.

The design of this citizen administration information system application socially has a positive impact on the ease of accessing information. Residents have experience of efficiency and optimization in many ways, including efficiency and optimizing data security. Residents feel more comfortable when their data is needed by administrators, because it is practical, flexible and saves time and money. The point is that in terms of data collection purposes, the

application of this Smart RT/RW information system is not limited by space and time when interacting, it is easier for residents to interact.

This community service activity by implementing an Android-based RT/RW Smart citizen administration information system application contributes to other sectors, including the fields of Health and Social Assistance. In the health sector, this application can provide data on citizens who have received vaccinations (especially Covid 19), so that this data can be used by the Public Health Center (Puskesmas) to collect vaccination data as an effort to prevent transmission of Covid 19. In addition, this application can provide data children under fiveyears for data contribution to the Integrated Service Center, so that all information for improving the quality of life of toddlers becomes well controlled. For data on elderly citizens, it can also be easily detected so that elderly residents can be properly monitored for their health or if their economic conditions need assistance.

Community service activities in the activities of making Android-based Smart RT-RW Citizen Information System applications have problems, especially during the process, including:1). Not all residents have knowledge about digitization. This lack of knowledge will hinder the transfer of knowledge provided. Some of the features in the citizen application are confusing for residents who don't understand digitization. This will have an effect, when residents have to fill in updated personal data, have to make contributions even when asking for a statement for a need.2). An unstable network for accessing applications greatly affects the success of updating data.3). There is a fee charged (quota) for updating data and all activities to operate the Android-based Smart RT/RW system application4). It takes a device that supports/in accordance with the running system application.

To minimize the constraints/barriers that occur in the Android-based smart RT/RW information system application activities, it is necessary to follow up as follows:1). It is necessary to carry out continuous socialization and training on the operation of this Android-based smart RT/RW citizen information system application, both to residents and admin staff. Socialization can be done periodically.2). Special assistance is needed for residents who really cannot afford to run this Android-based smart RT/RW information system application.3). To overcome an unstable network, this can be done by using a fairly representative paid network at low cost that is managed jointly by residents4). To simplify the operation of the application, a manual book has been prepared that can be studied and followed easily.5). To improve the Android-based smart RT/RW citizen information system application, improvements will continue to be made so that all citizen information can be connected to government programs that will improve residents' welfare.

Conclusions And Recommendations:-
Conclusion:-
1. An android-based smart RT/RW citizen information system application is needed to provide easy management of RT citizen data in various RT/RT interests in the Permata Depok Regency Residential area, especially RT 01 and RT 03, RW 11.
2. Availability of neat and accurate and up to date citizen data for all needs.
3. Transparent citizen financial reports, so as not to arouse suspicion among residents in terms of financial use.
4. Fulfillment of citizen data which can be done quickly because there is access for residents to input data into system applications.
5. Minimizing documents in hardcopy form because everything is in the form of a digital database.
6. All information can be conveyed through the application of a citizen information system that has been formed, so that no citizen is left out with all the information available.
7. Fulfillment of correspondence can be done more quickly because there is no dependence on time problems for each RT administrator.

Recommendations:-
1. Based on the conclusions obtained, the Android-based smart RT/RW citizen information system application can be developed in all RTs in the Permata Depok Regency Residential area.
2. Applications can be developed for various purposes according to the mission of the city of Depok to improve modern and participatory governance and public services.

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