



Security Management Information System at Rw 03 Kampung Bulak Wareng Jurang Mangu Timur Pondok Aren Tangerang Selatan

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ABSTRACT

Rukun Warga Security Management Information System is a software created and applied in Bulak Wareng Village, Jurang Mangu Timur Village, Pondok aren Tangerang Selatan, used as a security tool for Rukun Warga which has a manual work method such as siskamling.

The software that is applied is software that can provide security information in Bulak Wareng Village, Jurang Mangu Timur Pondok Aren, South Tangerang, as for how it works, namely by sounding different signs in each information conveyed to the community with speaker aids that are integrated with the software created.

This software also opens up employment opportunities for young village youths who are paid periodically through the RW cash so that they can be fully responsible for the software installed.



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INTRODUCTION

Bulak Wareng Village, Jurang Mangu East Pondok Aren, South Tangerang is a village located in South Tangerang approximately 10 km from the city center of South Tangerang, the contour of the community is still thick with religion that characterizes this beautiful village. Three musallahs 1 mosque 1 Madrasah Ibtidaiyah, 1 kindergarten collected from a kurupuk merchant have been built since the last 5 years, some arrangements were made but very carefully and seemed monotonous little by little, considering that some

community leaders who are old and have a strong lineage are very domineering in the development of this village.

Departing from the above problems, negotiations with community leaders were carried out, pros and cons occurred, those who did not want to be stepped over and did not know technology and did not want to learn about technology were strongly opposed, but when the software demo was carried out, 3 out of 5 community leaders allowed the author to conduct further research and immediately apply the software that was promoted to be the forerunner for the needs of the people in the village of Bulak Wareng cimari pondok aren south Tangerang, West Java.

This Rukun Warga Security Management Information System, is made only as a security tool that is synergized with technology, so that the community can receive fast information if there is news that is spread with different sounds in each danger sign generated which is synergized with automatic sms notifications from software to residents about events that occur at that time.

In its implementation, several components of the plan to make the Rukun Warga Security Management Information System include several sectors that we will try to describe as follows:

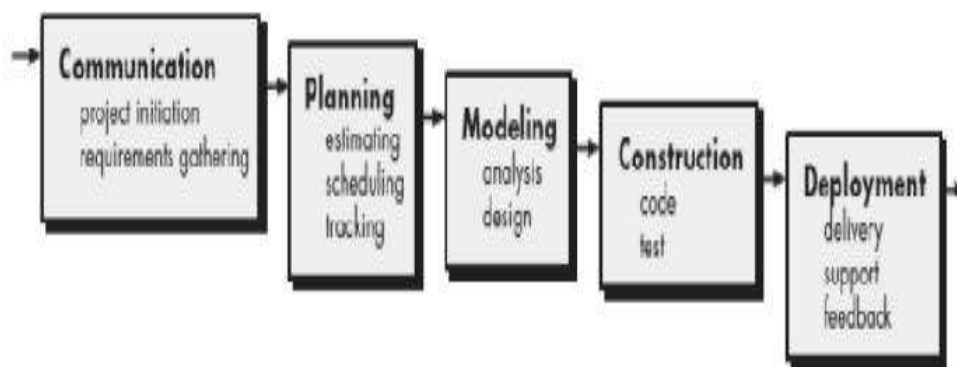


Figure 1 Waterfall Pressman

Communication

- This step is an analysis of software needs, and a stage for conducting data collection by conducting:
- Spreading questionnaires to the Pondok Aren community to measure the extent to which the software to be created is beneficial to Pondok Aren residents, seen in terms of use or public understanding of the software to be created.
- Complete documents, literature both from journal articles or the internet.

Planning

The planning process is a continuation of the communication process (requirement analysis). This stage will produce a user requirement document or can be said to be data related to the user's wishes in making software, including plans to be carried out.

Modeling

This modeling process will translate the requirements into a software design that can be estimated before coding. This process focuses on data structure design, software architecture, interface representation, and procedural details (algorithms). This stage will produce a document called software requirements.

Construction

Construction is the process of creating code. Coding is the translation of design into a language that can be recognized by a computer. The programmer will translate the transactions requested by the user. This stage is the real stage in working on a software, meaning that the use of computers will be maximized at this stage. After the coding is complete, testing will be carried out on the system that was made earlier. The purpose of testing is to find errors in the system so that they can be corrected.

Deployment

This stage can be said to be final in making a software or system. After analyzing, designing and coding, the finished system will be used by the user. Then the software that has been made must be maintained regularly

LITERATURE REVIEW

Management Information System

A Management Information System (MIS) is a combination of hardware, software, people, procedures, and data designed to manage relevant information in an organization. The main purpose of SIM is to assist managers in making decisions, planning, controlling, and organizing organizational operations more effectively.

The following are theories and views on Management Information Systems according to several experts:

1) Davis (1985)

According to Davis, Management Information Systems are integrated systems that provide information to support operations, management, and decision making in organizations. Davis emphasizes that SIM aims to ensure that information is available on time, relevant, and accurate to support organizational needs.

2) Laudon and Laudon (2018)

According to Laudon, Management Information Systems are computer-based systems that provide information to support decision-making, coordination, control, analysis, and visualization within an organization. Their focus lies on how SIM can improve organizational efficiency and effectiveness by integrating technology and processes.

Functions of Management Information System : Collecting Data, SIM collects data from various sources, both internal and external to the organization.

Processing Data, the collected data is processed into relevant and useful information.

Storing Data, SIM provides a structured repository for data that can be used in the future.

Disseminating Information, The information generated is shared with those who need it through reports, dashboards, or other analytical tools.

Supports Decision Making, the SIM provides information that assists managers in making strategic, tactical, and operational decisions.

Components of Management Information System

- People, Users who manage and utilize the system, including managers, staff, and analysts.

- Hardware, Computers, servers, and other devices that support SIM operations.
- Software, Applications or programs used to process data into information.
- Procedures, Rules and guidelines that govern how data is collected, processed and used.

- Data, Raw information that is processed into meaningful outputs.

c. Benefits of Management Information Systems, Improves Operational Efficiency

Manual processes are automated, saving time and costs.

- Supports Decision Making, Accurate and up-to-date information helps make better decisions.

- Improves Communication, SIM provides a platform for sharing information across the organization.

- Better Resource Management, Centralized data makes it easier to manage resources such as people, finances, and other assets.

- Competitive Advantage, Organizations can respond faster to market changes and customer needs.

Types of Management Information Systems

Transaction Processing System (TPS), Processes daily operational data, such as sales or payroll.

Executive Information System (EIS), Provides strategic information to executives for decision-making.

Decision Support System (DSS), Assists in complex analysis and decision-making.

Accounting Information System (AIS), Manages financial and accounting data.

Human Resource Information System (HRIS), Manages data related to employees and human resource functions.

Application of SIM in Organizations

- Company, to manage logistics, inventory, sales, and financial reports.
- Government, to organize public services, tax administration, and population data management.

- Education, used to manage student data, class schedules, and academic management.

- Health, SIM is used for medical records, patient management, and hospital operations.

Sistem Informasi Geografis (SISFOGA) or Geographic Information System (GIS)

Geographic Information System (GIS) is the study of how information systems can be used to manage, analyze, and present geographic or spatial data. GIS integrates computer technology, spatial data, and analysis methods to support location-based decision making. Here are some of the experts' views on SISFOGA: 1) Burrough and McDonnell (1998)

Geographic Information Systems are computer-based systems used to enter, store, examine, integrate, manipulate, analyze, and display data related to positions on the earth's surface. This definition emphasizes the main function of GIS in managing spatial data. 2) Heywood et al. (2006). Heywood defines GIS as a technology that enables mapping and analysis of spatial data to support decision-making. It includes aspects of digital mapping and location-based analysis.

Basic Principles of SISFOGA

SISFOGA is based on several basic principles, such as: Spatial representation: Geographic data is represented in vector (point, line, polygon) or raster (grid) form. Spatial analysis: Processing of geographic data to identify patterns, relationships and trends. Data integration: Combining different types of data to provide better insights. SISFOGA is used in various fields such as urban planning, natural resource management, transportation, agriculture, and disaster mitigation. Here are some of the main theories underlying SISFOGA: a. Information System Theory, SISFOGA is a subset of information systems that focus on data that has a geographic dimension. This theory includes: Data Input: The process of collecting geographic data, such as coordinates, maps, satellite photos, or survey data. Data Processing: Data is processed into usable information, such as overlay, buffering, or network analysis. Data Output: Information is displayed in visual form (digital maps) or relevant reports. b. Cartographic Theory and Spatial Visualization, Spatial Data Representation: Geographic data is converted into the form of maps, graphs, or 3D models. Symbolism and Scale: An understanding of how symbols, colors, and scale are used to

convey information. Visualization Effectiveness: Discussing how maps or spatial visualizations help users understand geographic patterns or relationships. c. Geodesy and Remote Sensing Theory, geographic Coordinates: Coordinate systems such as WGS84 are used to ensure data is geographically accurate.

Remote Sensing: Data obtained from satellites or drones used for spatial analysis. Map Projection: Transformation of data from a spherical surface of the earth to a flat map by accounting for distortions. d. Theories of Spatial Analysis, Distance and Network Analysis: Such as shortest path analysis, buffer analysis, or calculation of distance between points. Spatial Relationships: Involves relationships between geographic objects, such as linkage, proximity, or topological relationships. Spatial Modeling: Simulation and prediction based on geographic data, such as for disaster mitigation or urban planning. e. Data Theory and Spatial Databases. Spatial Data Structure: Data stored in raster (pixels) or vector (points, lines, polygons) format. Geographic Database: Databases such as PostgreSQL with PostGIS or ArcGIS are used to store and manage geographic data. Data Interoperability: Standards such as OGC (Open Geospatial Consortium) allow the integration of data from different sources. f. Theory of GIS Technology and Tools, GIS Software: Examples are ArcGIS, QGIS, or MapInfo. GIS Hardware: Includes GPS, total stations, and computer devices with high data processing capabilities. Cloud and Web GIS: Modern GIS is often cloud-based or accessible through a browser (WebGIS). g. Application of SISFOGA, Spatial Planning: Helps determine zoning and land use. Natural Resource Management: For forest, water, or mineral management. Disaster Mitigation: Flood, earthquake, or fire risk analysis. Transportation and Infrastructure: Planning transportation routes or utility networks.

METHOD

The research method used is qualitative research, we carry out research activities objectively on the subjective reality under study. In this case, subjectivity applies to the reality under study, in the sense that reality is seen from the point of view of the researched. Qualitative research is more concerned with the accuracy and adequacy of data. The emphasis in qualitative is the validity of the data, namely the correspondence between what is recorded as data and what actually happens in the setting under study.

The Quantitative Research Steps applied in making the Information System for the Security of Residents in Bulak Wareng Cimari Village Pondok aren south Tangerang are: The idea of this research comes from the lack of effectiveness of the manual security system in the form of siskamling which only operates at night and is oriented towards thieves, while other places are less concerned especially during the day. Same security control causes open holes and can be penetrated by thieves, considering that the security control carried out by night ronda is only at night. The Rukun Warga Security Information System is considered important because: Impact of SISFOGA Implementation on the Community. a. With the implementation of SISFOGA, an emergency security system notification will be formed in the community quickly so that the community will also quickly respond to an event around its area. b. If the manual security system (Poskamling) is not developed, and is still applied, it will have negative consequences such as: - It is difficult for people who live separately from others to control their security. - It is difficult for people to send security information to their elders, because manual village security is one-way. - The sound of the alarm bells struck by ronda officers is not evenly distributed so that information cannot be received evenly. c. The positive impacts arising from the results of the research are With SISFOGA which is synchronized with SMS Gateway, it will facilitate the community in: - Two-way communication. Two-way communication here is, with the construction of this system in the community, residents can send information via sms that have been registered previously into the system if something suspicious happens, and the system will immediately detect the existing security side by sending sms automatically to the daily guards assigned by the RW and to visit residents who suspect something related to the security of their home environment.- Even distribution of information, with the SIM Rukun Warga that is synergized

with SMS Gateway, information about an incident will be evenly distributed, because as soon as news about security is sent to the system, at that time the data is automatically distributed to the community whose cellphone numbers are registered in SISFOGA.- Emergency response to danger, with the Neighborhood SIM and SMS received by residents simultaneously, residents who are threatened by danger, for example a fire, will quickly execute their belongings or help put out the fire, or those who are working can immediately go home to see the situation of their loved ones. - goods or help put out the fire, or those who are working can immediately go home to see the situation of their loved ones. d.

SISFOGA is very relevant, actual and in accordance with the situation of the needs of the times, considering that in this age of globalization, all levels of society must be able to come into direct contact with technology and feel its benefits and uses to help facilitate their lives.e. When associated with other research, this research is relevant to previous research, namely IKAN KOKI (Integration of Our City Area) which has been launched in the ISBN - UNILA proceedings with the number 978-602-7005-0-0-6 December 3-4, 2013. f. The result of this research is a security system that will be implemented directly in Kampung Bulak Wareng Cimari Pondok aren Tangerang Selatan with six months of maintenance and 1 month of operator training.

SISFOGA was created with the aim of making it easier for the community to control the security of their environment individually either day or night, and integrate with the system if there are oddities in the environment that concern the interests and safety of the community.

Some neighborhoods are far from residential areas so that the information and / or guarding received is not optimal and evenly distributed at each incident

RESULT AND DISCUSSION

1) The creation of SISFOGA is worth the benefits of research if it is related to the author's knowledge in the field of informatics engineering and management. 2) Fisible (cost, time and conditions) In its manufacture, SISFOGA requires 4 workers consisting of:

Table 1 Cost Calculation

No	Role	Price	People	Total
1	Project Manager	Rp 4,500,000	1	Rp 4.500,000
2	Analyst Specialist	Rp 3,750,000	1	Rp 3,750,000
3	Programmer Specialist	Rp 3,500,000	1	Rp 3,500,000
4	Database Specialist	Rp 3,250,000	1	Rp 3,250,000
Grand Total				Rp 15.000.000

Table 2 Flow Table: Mechanism for Preparing Work Stages

Stage	Process	Details
Organizational Phase	Sources and References	- Sources of Opportunities and References
		- Organizational Plans and References
	Sub-Processes	- Institution for Opportunity/Reference Sources
		- Short-Term and Long-Term Literacy
		- Operational and Financial Supporting Institution
Planning Phase	Input Processes	- Reserve Organizational Sources Institution
		- Activity/Program Proposals from the Previous Year
	Coordination	- Leader/Member Hearing Forum
Drafting Phase	Core Committee Meetings	- Consultation with Leaders and Branch Committees
		- Review of Resources and Literature
		- Program and Activity Drafting
Approval Phase	Finalization	- Performance Evaluation and Feedback
		- Program Plan by Committees
	Confirmation	- Submission for Approval
		- Feedback and Final Approval by Leaders/Committees

The type of expertise needed to solve all problems or needs of partners, and state who each expert is. The experts needed for the work of the Community Association Security Information System are: Expert Team Coordinator, with a Master's degree, Master of Management Education or similar and experience as a project manager for related projects. Project Manager, with a Master's degree, Informatics Engineering Management Education or similar and experience as a project manager to carry out or manage the administration of the project. Analyst Specialist, with a bachelor's degree, an Informatics Engineering Management Education or similar and experience as an analyst in the construction and development of software to identify related problems. Programmer Specialist, with a bachelor's degree, understands software systems. Database Specialist, with a bachelor's degree, Information Engineering Management Education or similar and experience as a Database Designer. The facilities that will be provided are: System socialization to the field thoroughly, Guidebook, Fast auto response sms gateway without bugs. Database maintenance.

CONCLUSION

The Neighborhood Security Management Information System (SIM-KRW) in Bulak Wareng Village, Jurang Mangu Timur Village, Pondok Aren, South Tangerang is a software-based innovation that is used as a tool for Neighborhood Security. Compared to manual methods such as siskamling, this software provides security information more efficiently through the sounding of different signs on each information, using a speaker tool integrated with the software. In addition to providing security benefits, SIM-KRW also has positive social impacts, such as creating employment opportunities for village youth who are employed periodically through the management of RW cash funds. This shows that the implementation of this software not only improves security effectiveness but also empowers the local community economically.

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