Geographic Information System Development Engineering Faculty of Manado State University

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Abstract: The development of technology is very rapidly give a very big influence on the media recognition and information systems, this study aims to Facilitate users to get more information about the introduction Faculty of Engineering State University of Manado, Analysis conducted among others by doing research on the products to be made and perform the data collection to Obtain the information needed. Result and development of geographic information system media has been made and tested its usage. The Achieved results are expected to provide convenience for the user, in Obtaining more complete information.

1 INTRODUCTION

Manado State University (UNIMA) is a public university located in the province of North Sulawesi. UNIMA is located in a mountainous area of Minahasa District, 800 meters above sea level and about 40 km from Manado, the provincial capital. Having a 270ha area to make UNIMA as a university that has a very wide area, campus Unima has 7 Faculties and many buildings supporting the activities of the faculties, staff and students, and the Faculty of Engineering is one of the faculty in between.

Having a large area and has many of the building and the room became a pretty big problem for most of the students and staff and faculty, information concerning the building and the room - the room contained in the scope of the Faculty of Engineering Unima.

Of the students, especially students of the first semester or freshmen, difficult to find a room lectures are very common in because of the lack of media information that can provide information to be obtained, as well as lecturer of general courses (lecturers from other faculties) which is difficult to determine the room lectures will used for lectures.

With the development of science and technology, particularly in the field of Geographic Information Systems, the authors are interested if this can be a new breakthrough or innovation in overcoming the lack of media recognition Unima Engineering Faculty in particular regarding the introduction of the concept of serving more complete information.

A system has the characteristics or specific traits, which have components (component), the limit system (boundary), the environment outside the system (environments), interface (interface), the input (input), keluatan (output), processing (process) and goals (objectives) or destination (goal) (Hartono, 1999).

A system consists of various elements which are complementary in achieving the goals or targets. The elements are complementary are included in the system are often called subsystems. The subsystem must always relate to and interact with relevant communications secar so the system can work effectively and efficiently.

From every perspective, the system can be classified as follows: Hartono, 1999

1. Abstract systems and physical systems
   Abstract system is a system of thought or ideas looks physically. While the physical system is a system that is physically can be seen.
2. Certain systems (deterministic) dantak course (probabilistic)
   Certain systems (deterministic) system was in operation predictable. While the system is indeterminate (probabilistic) system the conditions of the future is unpredictable contains elements of probability.
3. Closed systems and open systems

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Closed system is a system that is not related to external environment. While the open system is a system-related and affected by the external environment.

4. Natural systems and artificial systems
   Natural system is a system that occurs through natural processes, not through natural processes. While the artificial system is a system that designed by humans,

Data is the description of objects, events, activities, and transactions that do not have a meaning or not directly affect the value pemakai.Data can be formatted, text, image, audio and video (Kadir, 2003). Formatted data is data with a particular format. For example, the data stating the date or hour, ataumenyatakan currency values. The text is a series of letters, numbers, and symbols in particular (Eg "+" and "$") that the combination does not depend on each item individually tesk Examples are newspapers.

Image (image) is the data in the form of images. The image can be in the form of graphs, photographs, x-rays, and other ataupungambar signature.

Audio is data in the form of sound. Music instruments, voices or sounds of animals, splashing water, heartbeats are some examples of audio data. Video expressed sejumblah datan in the form of moving images and bias-equipped with the sound. Video can be used to capture an event or activity.

Information is data that has been processed so as to reduce the confusion about the circumstances or an event. While the data word itself is the fact that the actual reality.

Information can also be defined as a result of processing data in a form that is more useful and more meaningful to the recipient a portrait of an events (event) real (fact) that is used for decision making.

(Hartono, 1999). Within the scope of information systems, information has characteristics as described below: (Davis, Gordon B, 1989)

1. Right or wrong, this can relate to reality or not. When the recipient of the information is wrong to believe, the same result as correct.
2. New. Information may be completely new and fresh for the recipient.
3. Additional. Information can renew or give a new addition to the information already exists.
4. Corrective. Information data into a corrective on one of the previous information.
5. Confirmation. Information can reinforce the already existing information. This is still useful because it enhances the perception of the recipient for the correctness of this information open. One real example is OPEN MOVIE filmed Blender Institute.

1.1 Information Quality

The quality of the information (quality of information) depends on three factors, namely accuracy (accurate), timeliness (timeliness), and suitability (relevance). (Hartono, 1999)

a. Accuracy

Information should be free from mistakes and not biased or misleading. Accurate information can be also be interpreted must clearly reflect the intent.

b. Punctuality

The information that came at the recipient should not be too late. The information is already using will not have value because information is the cornerstone of decision making so that when information is delayed then the decision becomes incompatible with the state

c. Conformity

Such information has benefits for the wearer. Suitability for each person is different depending on the way of view and treat information that has been acquired.

It is known that the information is very important for management in decision making. Information can also be obtained from the system information (information system) or also called Processing system or information processing system or information-generating system.

1.2 Information Systems

The information system can be defined as a system within an organization that is a combination of people, facilities, technology, media, procedures and controls are shown to get the lines of communication is important, process the transaction type certain routine, giving a signal to management and the more of the events of internal and external are important and provide an information base for decision-making astute (Hartono, 1999 GIS can present a real world (real world) on the monitor as sheet maps can represent the real world on paper. However, SIG has the power more and flexibility of the sheet of paper. map is a graphical representation of the real world, objects are presented on a map called the element of a map or map features (examples are rivers, parks, gardens, roads, etc.). Since the map organize based on those elements of the locations. SIG menyimp an all elements of descriptive information as attributes in the database. Then, SIG to form and store it in tables (relational) thus, these attributes can be accessed through the locations of the map elements and instead, the elements of the map can also be accessed melaluiatribut-attribute. (Prahasta Eddy 2005).

2 METHOD

System development method used is the Waterfall method that consists of 6 phases:

a. planning
b. analysis of needs
c. Design (Design)
d. Coding (coding)
e. Testing (Testing)
f. Maintenance

In this development methodology only reached the stage of testing (Testing) only.

2.1 Sequential Linear Systems Development Method (Waterfall model)

Method development system linear sequential or who is often called the life cycle of a classic or waterfall model (waterfall model) provides an approach to system development systematic sequence, begins the phase of system planning, analysis, design, code, test and maintenance (Pressman, 2003). Figure 1 shows the waterfall model.

1. **Planning or engineering**
   In this phase of the identification system, the user needs study and a feasibility study system both technically and secarateknologi and scheduling system development.
2. **Software requirement analysis**
   In this phase the collection of identified needs and is focused on systems that will be used include the domain identification information, tinkah behavior of the system, to work and interface system. The need for the system is documented and consulted again for the user.
3. **Design**
   In this phase focused on the process data structure design, system architecture, interface representations and program algorithms.
4. **Coding**
   Once the design process is completed, the results should be d terjemahnak into the form of a computer program which will then be amended and produce a system that can d use.
5. **Testing**
   Testing is done to find mistakes that allow occurred in the coding process and to ensure that input is restricted provide maximum results and in accordance with future user needs.
6. **Maintenance**
   Marked with the delivery of software to the user to operate. In the operational period, the software enables masi event of a fault or failure in implementing its functions, the software is still in need of the process (maintenance) from time to time in line with developments in the research object at first.

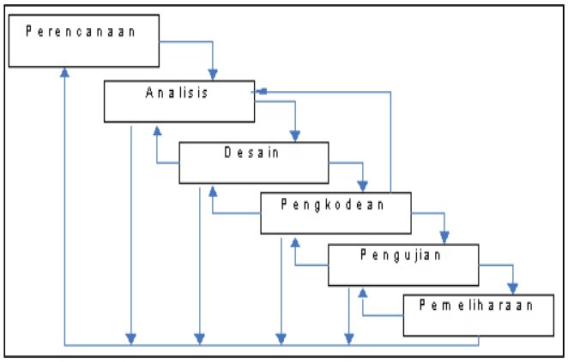

Figure 1: Waterfall Model.

2.2 Data collection technique

Data to be collected in this study consisted of two: qualitative and quantitative data.

Qualitative data is data on the geographic information system development process in the form of criticism and suggestions from media experts, students and lecturers.

Quantitative data is the main data is data geography, dann Building rooms in the Faculty of engineering.

3 RESULTS AND DISCUSSION

This study originated from the observation made in the Faculty of Engineering Unima is directly in view of the recognition process in the Faculty of Unima techniques. Based on the observations that have been done, researchers found recognition that is given to the students of the first semester is lacking, especially in the field of geographic information and other information so that the impact on the slow adjustment mahsiswa early half or could be in katakana new students to the system and the order of geographic faculty which is environment merekauntuk new gain knowledge. From the results of this observation, the lack of recognition means that can provide information to the students of the first semester. Thus the need for additional means of introduction which utilize advanced technology to facilitate the provision

of information to students. That is by making the introduction program which contains more complete information and is easy to use using Arc view and Adobe Flash. However memgingat Arc view and Adobe Flash in its use is quite complicated researchers tried mebuatnya easy to use yet has more information.

3.1 Stage Design

At this stage the design Storyboard made. Storyboard an overall picture of the application that will be created. Here is the storyboard that would serve as guidelines in making this application

3.2 Stages Collection of materials

To this end the researchers to collect all the materials that will be used in the making of this program. Starting from the information and images as well as software and hardware.

a. Information

To make this program the researchers collected information about the geographical location, information on uses of the room, the data and the student data lecturer in the Faculty of engineering. When finished creating storyboards, researchers compiled information that will be used in the making of the program.

b. Picture

To supply the pictures, taken from every corner of the existing building within the scope of the Faculty of techniques including pictures of the room that will be used for modeling to be used in the program, and in the edit mengunaka Arc View, Adobe Photoshop, and Skechup Pro.

c. Software-Hardware

Software used in the process of making this program has the following specifications:

- Arc View
- Adobe Flash Professional CS6
- Adobe Photoshop CS6
- Skechup Pro 2016
- Make Skechup 2016

Based on the above data, the hardware required to make this program are:

- Processor: Intel® Core ™ i3
- RAM: 4.00 GB
- Hard disk: 1 TB

3.3 Stage Creation

Before the programs are made in advance to prepare the material that will be used in the manufacturing process such as information engineering faculty program, taking pictures of the building, the room, and the position of the building that has been edited using ArcView, Skechup, Adobe Photoshop CS6. After that the process be using the program Adobe Flash Professional CS6. Here PrintScreen manufacture geographic information system program that has been created.

4 CONCLUSIONS

From the results of research and discussion above, the conclusions obtained are as follows:

Geographic information system development engineering faculty had a very nice benefit to make it easier to get information that is within the scope of the engineering faculty of the UNIMA. With this program students and lecturers get more complete information and help as a means that is easier to use to get

Based on the quality of existing programs, weaknesses and limitations of existing research, it can be given some suggestions utilization and further development of the program as follows:Can increase program usage areas in geographic areas of UNIMA. Giving more in-depth information in any outline in the program.

Geographic Information System should be developed further because in this program show only a small area of Manado State University.

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