APPLICATION DEVELOPMENT HOUSE MONITORING SYSTEM USING MEDIA-BASED SMS TO EMAIL, SMS GATEWAY AND LIVE IMAGE CAPTURING

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ABSTRACT

Along with the times, also increased monitoring of technological developments or supervision of a place or location. monitoring initially done manually by placing the power to chill location supervisor is supervision. However, monitoring technology, supervision can be done through a camera that can monitor a site with an unlimited range and can provide detailed information and accurately through a device that can display the results of monitoring data.

With the development of mobile technology, especially in the GSM and GPRS, which provides SMS (Short Messaging Service) you can send an sms and email in the form of POP and IMAP on the phone, it is possible acceptance and demand for monitoring data can be done. To monitor a room house, home owners can monitor the house by sending an SMS message reply to the application will take a picture and send the monitoring results of the image data to the email sender. In this system uses a method of research methodology that describes the problem deskriftif is happening in the field as it is. Then analyze and explain the data by using waterfall method.

From the test results, obtained by conclusion that the application is made to help home owners to monitor the home via SMS messages. Facilitate the reception of information and time.
***Keywords**: Data, Systems, Monitoring, SMS Gateway, Email.*

1. INTRODUCTION

1.1 Background

In a world of information technology development is currently one of monitoring or surveillance technologies, such as a location monitoring system in the building room by using the camera, where surveillance cameras record all activity that occurs in a room that is determined, such as monitoring earthquake prone area or landslide, monitoring the activities of employees, supervision at the supermarket, parking areas, and houses and so forth, with the development of technologies that have such supervision is no longer necessary in many places continuously. Simply by using a camera placed at the desired place for supervision as a substitute for human labor. Homeowners who do not want to busy to check on the house by opening the laptop to check the activities of his home, wherever its existence with only capture an image without using a video that should continue to record and thus require a lot of storage capacity.

With the development of cellular technology, especially in the GSM and GPRS, which provides SMS (Short Messaging Service), we can send a sms with a specific format, and email in the form of POP and IMAP on the phone to transfer data, which will be responded by the application which is the trigger for the camera capture and transmit the results of commands that form the desired image through email messages automatically (Autorespons) to the owner's cell phone

1.2 Problem Identification

Identify the problem to be studied in this thesis is how to make home monitoring application that can process data requests via SMS as data capture and application settings on the SMS gateway, and send data images via EMAIL that can be accessed through mobile phones, so that

the development application monitoring system home use media-based email to sms sms gateway and a live image capturing created.

1.3 The Aim and The Purpose

Based on the problems studied, the purpose of this thesis is to build the Live Image Capture application and the delivery of image data using an SMS gateway and email facilities

1.3.1intention

The purpose of making this application is how the monitoring room in the house through cameras and accept the monitoring results via email messages.

1.3.2Destination

While the objectives of the development application is monitoring this room:

a. Monitoring application built to help home owners in the monitoring room via the image data that is sent with the email media.

b. Monitoring application built to help home owners in the monitoring room at certain times accurately.

2. MODELS, ANALYSIS, DESIGN AND IMPLEMENTATION

2.1 Model

Data analysis technique of software construction using software modeling with waterfall paradigm as shown in Picture 1.1, consist of several process which are:

a. System / Information Engineering

It is a part of the biggest system in a project construction, begin with determine various requirement from the entire element that necessary for the system and allocated it into software construction.

b. Analysis

It is analysis stage of materials that necessary to perform the software construction project.

c. Design

It is translation stage of analyzed data into comprehensible form for user.

d. Coding

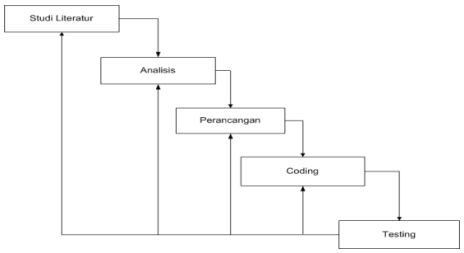
It is a stage of translation data or problem solving that has been designed into specific programming language.

e. Trial

It is a trial of the constructed software.

f. Maintenance

It is a final stage where the settled software may have any modification or addition congruent with the user demand.



Picture 1. Waterfall Paradigm

2.2Analysis

A. System Analysis

System development tool is a very important element in doing the steps in a structured system development methodology. Tools that are used commonly in the form of drawings, diagrams or graphs and data dictionary.

B. Database Analysis

Unified Modelling Language (UML) is a "language" which has become the industry standard for visualizing, designing and documenting software systems. UMLmenawarkan a standard for designing a system.

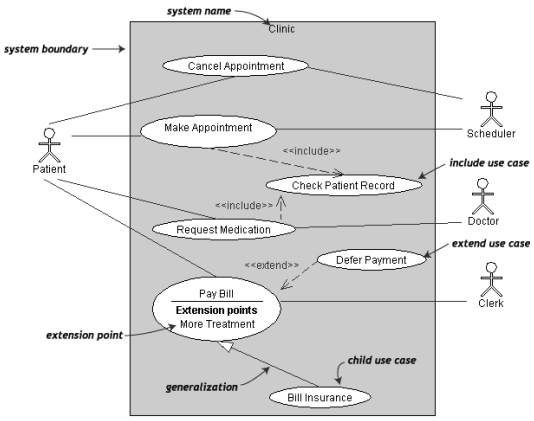
Abstraction of the basic concepts of UML structural classification, dynamic behavior, and model management, we can easily understand if we look at the picture above from the diagrams. Main concepts we can view as terms that will arise when we make a diagram

UML diagrams defined as follows:

1. *Use Case Diagram*

   Use case diagram is a description of a system of a typical describe the interaction between the user (users) of a system with its own systems through a story of how a system is used. Sequence of steps that describe the user and the system is called scenario.

   In talking about the use case, users are usually referred to as actors. Actor is a role that could be played by users in their interaction with the system. Example use case diagram:



Picture 2 *Usecase Diagram*

2. Class Diagram

a. *Class Diagram* is a specification that if diintansi will menghasilak an object and is the core of the development of object-oriented design. Class describing a state (attributes or properties) of the system, as well as offer services to manipulate the state of the three principal areas:

a.Name
b.Attribute
c.Methods
Attributes and methods can have one of the following characteristics:

a. Private, not be called from outside the class in question

b. Protected, can only be called by the class in question and children who inherit it

c. Public, anyone can be called by

Account
+ Notes: string + order: ordered + orderBalance: currency + Orderstatus: string
+ Getitembalance():currency + getorderID(): orderID

Class can be an implementation of an interface, ie an abstract class which only has a method. interface can not directly, but must be implemented first into a class. Thus the interface supports a resolution method at run-time

3. statechart diagram

Statechard diagram describing a state of transition and change (from one state to another state) of an object on the system as a result of stimuli received. In general statechard diagram illustrates a particular class (class can choose more than one statechard diagram).

4. Activity Diagram

Activity diagram describe a variety of flow activity in the systems being designed, how each of flow begins, the decision may occur and how they ended. Activity diagrams can also illustrate the parallel process that occurs in some execution.

Activity diagram is a special state diagram where most of the Action and the state is largely triggered by the completion of the transition in the state before (internal processing).

5. Sequence Diagram

Sequence diagram describe interactions between objects in and around the system (including user, display and so on) in the form of message over time. Sequence diagrams consist of vertical dimension (time) and horizontal dimensions (objects) associated.

6. Collaboration Diagram

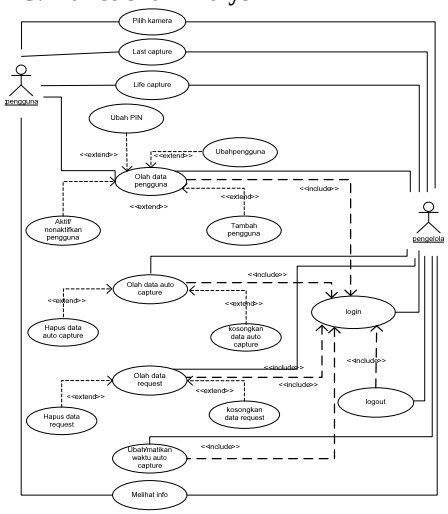
Collaboration diagram also illustrates the interaction between object such as sequence diagrams, but more emphasis on the role of each object and not on message delivery time of each message has a sequence number, where the message from the highest level has the number one. Message from the same level have the same prefix.

7. Component Diagram

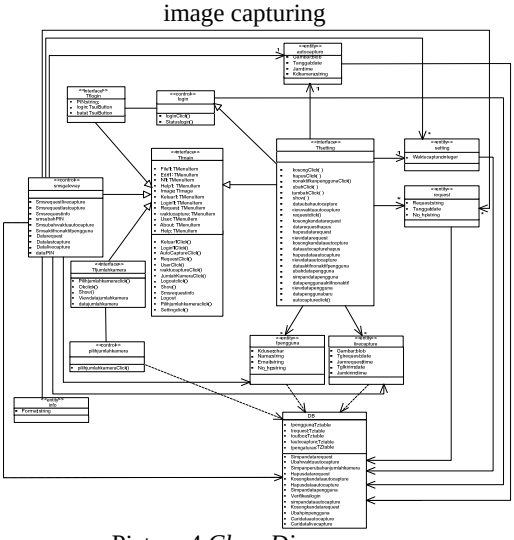
Component diagrams illustrate the relationship between structure and software, including dependence (dependency) among others. Component software is a module containing the code, both containing the source code and binary code, both libraries and executables, both appearing at compile time, link time or run time.

8. *Deployment Diagram*
Deployment diagram describes in detail how the components deployed in the infrastructure system in which components will be located (on a machine, server or hardware), how the ability of the network at that location, such as servers and others who are physically.

C. Functional Analys

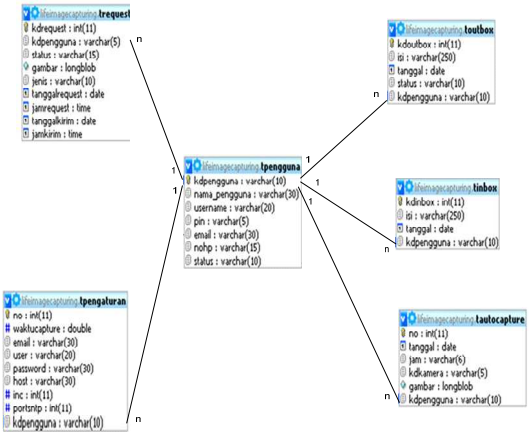


Picture 3 *Use case* diagram of monitoring system for home applications using media-based email to sms sms gateway and a live image capturing



Picture 4 *Class Diagram*

1. Relation Scheme

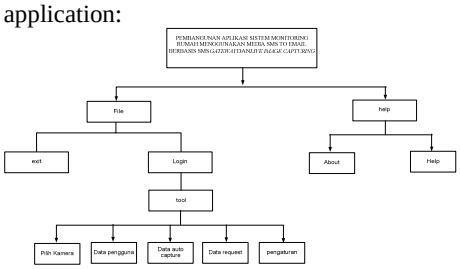


Picture 5. Relation table

1.3 Design

A. Structure Menu Design

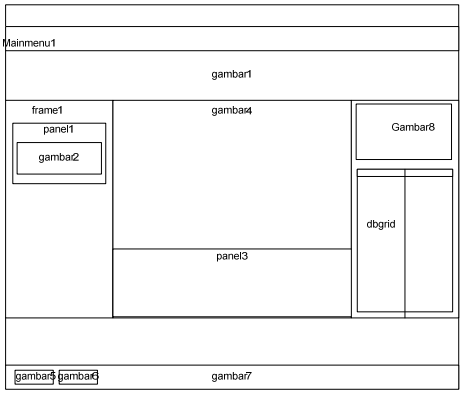
In designing a menu structure that required the application menu and submenu contains functions to allow a user to use the application. Here was described on the menu structure in this application:



Picture 6. Structure Menu Design

B. Main Menu Design

The following are the design drawings main menu..



Picture 7. Main Menu

1.4 Implementasi

In this implementation phase, will be implemented some components of a system built supporters.

A. Sistem Implementation

The objective is to confirm the implementation program modules principals of design in the system so the user can provide input to the system builder..

B. Hardware Implementation

Hardware used to implement the system are as follows:

1. 1. Processor: Intel Celeron M 6.1
2. GHz or higher
3. 2. Hard Drive: 80 Gb
4. 3. Memory: 1 GB DDR
5. 4. Monitor: 14 "
6. 5. Data cable siemens c55
7. 6. Webcams
8. 7. Internet Network
9. 8. Keyboard and mouse.

C. Software Implementation

Software used to implement the system are as follows:

1. Operating System, using Microsoft Windows XP Professional
2. Borland Delphi 7
3. XAMPP 7.1
4. Webcam driver
5. Siemens GSM modem driver c55
6. Internet.

D. Form Implementation

Implementation of the form carried out to find every page program. Here is the implementation of the form that made

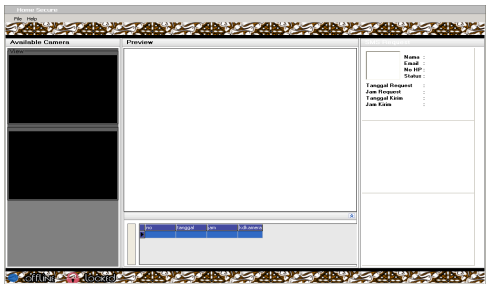
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2 RESULT AND DISCUSION

From analysis and design that has been done, the results of the application built to look like the below in the display i :



Picture 8. Form *Splashscreen*



Picture 9. Form Utama

3 CONCLUSION AND SUGGESTION

3.1 CONCLUSION

After passing through the home monitoring system for application development using the media-based email to sms sms gateway and a live image capturing and conducting the test, then the following conclusions can be drawn:

1. Application Development using a home monitoring system for media-based email to sms sms gateway and a live image capturing can be easily constructed home owners in the monitoring room via an sms message request and auto response email messages.
2. Application Development using a home monitoring system for media-based email to sms sms gateway and capturing a live image built can facilitate users in performing the process of taking pictures at certain times.

3.2 SUGGESTION

1. Home monitoring system applications using media-based email to sms sms gateway and capturing a live image built can still be developed in line with the development of user requirement specification which must be fulfilled in the system reaches a higher stage and better system performance. Here are some suggestions for further development:
   1. Expected for the next development, it is hoped the system can handle data capture better images, which in this system still uses the time benchmark.
   2. For further development, it is expected that systems can be built using more cameras.

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