Strategy Development Policy Course Information For Submission Of Application Based Sms Gateway To High School Teacher Training And Education
(Stkip Pgri Pacitan)

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Abstract

In STKIP PGRI PACITAN still in the process of lecture information on paste on the notice board. To be able to view information lecturing students sometimes make a long queue waiting to get that information. To facilitate students in getting the campus information system invented sms based information that can be accessed from anywhere 24 hours. This system aims to produce application-Based Information Systems course and SMS Gateway Makes it easy for students to view course information. The method used in this research are methods Library, observations, interviews, data analysis, system design, programming, testing and implementation program. Results from this study is the existence of information systems based SMS Gateway is the BAAK STKIP PGRI PACITAN easier in the delivery of information to students. Based on the opinion of 30 respondents with a variety of questions covering the quality of text-based systems, the ability of the system to help get the information, the ease and speed of process-based Information Systems sms gateway that generated an average of 85% - 90% of respondents are very appreciate for SMS Based Information System Gateway.

Keyword : **Information Systems, SMS gateway**

1.1 Background of The Problem

Lectures at colleges provide different methods of providing education to elementary and secondary schools, namely the concept of Semester Credit System (SKS), which can manage the performance of college students with self. SKS concept provides flexibility to students if it does not pass in a course, the student simply repeat the course.

Based on the observation that researchers do the research object that includes organizer BAAK STKIP PGRI Pacitan and students, through the interview process, documentation, and questionnaires obtained primary data existing problems in BAAK STKIP PGRI PACITAN. Where in the process of delivering information dipapan lecture was taped announcement. To be able to see information lecturing students must come to campus, the college presented the info is not delivered to all students, to be able to see the information on the bulletin board of students sometimes have to wait first. To overcome these problems needs to be a college information services that can be easily accessed by students that the lecture for students of Information Systems-Based SMS Gateway. On the other hand the development of information and communication technology so rapidly and that information technology can be used to assist or facilitate human work. The role of information technology in education including the charging schedule to inform students through Short Message Service (SMS). Given the current use of Hand Phone (HP) is very reasonable and every student has the mobile communication device, enabling the use of the HP services in menggakses college student information. SMS is a service of various kinds of GSM and CDMA operators. SMS technology allows us to send short alphanumeric messages from a phone to another mobile phone.

1.2 Problem Formulation

1. During the process of delivering information is still in the paste on the bulletin board so students must come to campus.
2. How to make Application-Based Information Systems lecture Sms Gateway in order to provide services to students with course information easily?

1.3 Limitation

1. Object Research in STKIP PGRI Pacitan Pacitan
2. This system serves requests of students in terms of KRS schedule information and KRU and Information About Events Campus.

1.4 Purpose of Research

Produce Information System Based SMS Gateway lectures.

1.5   Benefits of Research

Information will be easily and quickly spread to the entire academic community in need.

2.1   Information System

Information system is a set of components of the human form, procedure, data, and technology (such as computers) are used to carry out a process for decision-making in order to support the success of every organization (in achieving the goals). Information system is a system, which contains the SPD network (data processing system), which is equipped with the communication channels used in the system of data organization. Elements of the system include collecting data information (data gathering), manage stored data, disseminate information. (Wardani, 2012:151)

2.2   SMS

SMS Gateway is a software that uses computer assistance and utilize mobile technology integrated to distribute the messages that are generated by the information system through SMS media that are handled by the cellular network. SMS is handled by the network through a data service text or SMS Center (SMSC), which serves to store and forward messages from the sender to the receiver side. SMS format used by manufacturers of MS (Mobile Station) is a Protocol Data Unit (PDU). PDU format will change the code ASCII (7 bits) into PDU byte (8 bits) at the time of sending data and will be converted back into ASCII code when the recipient gets an SMS. (Rahmalia, 2012 :)

2.3   How it works SMS

SMS services using channels or lines of text in the delivery process. So even if the SMS receiving is doing activities with his cell phone conversation, SMS messages can still be received. The journey of SMS from the sender to get to the mobile receiver is as follows.

Picture 2.1 How to Work Scheme Simple SMS (Source: Susila: 2012)

When there are tapping into tele How to Work Scheme Simple SMS (Source: Susila: 2012) pounds of our cell, first message through the SMS Center (SMSC), then forwarded to the tower (Base Transmission System, BTS), and from the tower will be forwarded to our cell phones. Also when we send an SMS, the message in advance through SMS Center, then to a cell phone tower and then to the destination. Among other data transmitted message length (number of characters), time of delivery, destination number, message, message format (plain text or multimedia), along with other information (Susila, 2012).

2.4 SMS CENTER (SMSC)

SMSC is responsible for the operation of a wireless SMS. When the SMS is sent, the recipient does not receive the SMS directly, but the SMS will be received by the SMSC first and then forwarded to the recipient. This will give you the convenience of the sender, in the sense that when the receiver is off, the SMS sent will be kept on trying to be delivered to the recipient by SMSC during active periods (Sunardi, Murti, Listiyono 2009).

2.5 SMS GATEWAY

SMS Gateway is a device that offers SMS transit, transforming messages to mobile network from other media or vice versa, allowing transmission or receipt of SMS messages with or using a mobile phone. SMS Gateway can connect to other media such as the SMSC and the content provider's server through an IP link to process the SMS service. One of the problems is that the SMS messages SMSCs developed by different companies using their own communication protocol and most of these protocols are proprietar. We can not connect two different SMSC if they do not support a common SMSC protocols or standards. To overcome this, then made a SMS gateway is placed between two SMSC. (Daughter: 2012) As an illustration, can be seen   in   the   image below:

Picture 2.2 SMSC *Communication*

2.6 PHP

PHP stands for "PHP: Hypertext Preprocessor", which is a scripting language that is attached to the HyperText Markup Language (HTML). Most of the language syntax is similar to C, Java and Perl, PHP plus some specific functions. The main goal is the use of language is to allow web developers to write dynamic web pages. (Nursahid, 2012:126)

2.7 MYSQL

My Structured Query Language (MySQL) is a database management program or a manufacturer and is often called the Database Management System (DBMS). This is the nature of open source DBMS. MySQL is also a database that is accessed the program network, so it can be used for multi-user applications (many users). Another advantage of MySQL is using query language (demand) SQL standard. SQL is a structured query language, SQL has been standardized for all programs accessed the database. (Fahrudin, 2012:106)

2.8 GAMMU

According acho (2008) Gammu is a tool for developing SMS Gateway application is fairly easy to implement and free. Gammu excess of other SMS gateway tool is:

a. Gammu can be run on Windows or Linux.

b. Many compatible device or cell phone with Gammu.

c. Gammu use MySQL database and can use desktop applications and web-based interface.

d. Gammu can help use existing mobile fiturfitur more efficiently.

e. Either a USB data cable or SERIAL, all compatible in Gammu (Novianti, Fauzijah, 2009)

2.9. Education Policies

Policies is a speech or writing which gives general guidance on the determination of the scope and boundaries that give general direction to managers to move. Policies also means a wide decision to become the basis for the implementation of management benchmark. Decision in question has been well thought and carefully by decision makers and not peak repetitive activities and routines associated with programmed or decision rules **(Nurkolis, 2004).**

Slamet (2005), education policies is what it says (disconnected) and carried out by the government in the field of education. Thus, education policies contains the decisions and actions that allocate values. According to him, education policies includes five types, namely regulatory policies, distributive policies, redistributive policies, capitalization policies and situation ethics policy.

Noeng Muhadjir (2003: 90), distinguish between substantive policies and policies implementation. Implementable policies is a description of the operation as well as substantive policies.

Sugiyono (2003) presents three terms of policies (policy), namely (1) a written statement Lesan or leader of the organization he leads, (2) the provisions that should be used as guidelines, handle or instructions for each activity, in order to achieve fluency and coherence in achieving organizational goals, and (3) as a road map for action in achieving organizational goals.

3.1. Analysis of Issues

At this time students at STKIP PGRI Pacitan in the information process is still taped lectures dipapan pengumuman.Untuk can view the lecture students should come to the campus, the info was submitted to the college is not delivered to all students, to be able to see the information on the bulletin board sometimes students must queue up first. This sometimes can not facilitate students to get the info that is on the bulletin board. Authors analyze the problem based on three aspects of the research that includes data Primary Data, Interview and Documentation.

Based on the opinions expressed by the manager of BAAK STKIP PGRI Pacitan described that in STKIP PGRI Pacitan in the delivery of student information is posted on the bulletin board so students must come to campus to get the information conveyed campus and is currently using the technology that is digital as in sms gateway shape.

A similar argument was also presented the results of the student questionnaire writer who expressed less maximum service to students that the students have to come up informing kekampus sometimes have to wait a long queue, and conveyed the information was not conveyed to all college students. Expectations of students is easy access to campus information quickly.

3.2. Framework
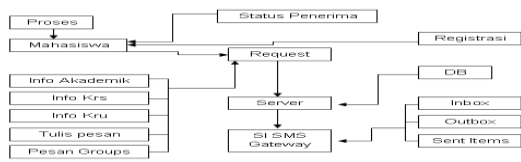

Picture 3.1 Framework

3.3. Format SMS Messages

Writing format tailored to the type of request. The writing format as follows:

1. SMS format to see academic information
   Format: NIM (#) ACADEMIC
   Example: 200922461 # ACADEMIC
2. SMS format to see KRS information
   Format: NIM (#) KRS
   Example: 200922461 # KRS
3. SMS format to view information KRU
   Format: NIM (#) CREW
   Example: 200922461 # CREW
4. Format SMS SMS Format To Help
   Format: NIM (#) INFO

3.4. Flowchart Alur Sistem
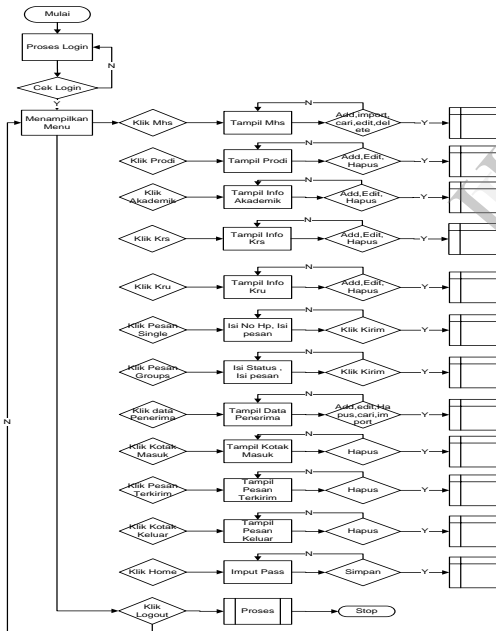
Picture 3.2 Flowchart Auditan Administrator

3.5. Structure Design Table

a. Table KRS

Table 3.1 Table krs

Field	Type	Length	Ket
Kd_krs	Varchar	3	PK

SendingDate Time	Timestamp		
Pesan	Varchar	400	
Jumlah		403	

b. Student Table

Table 3.2 Student Table

Field	Type	Length	Ket
Id	Int	5	
Nim	Varchar	17	PK
Nama	Varchar	30	
Kd_prodi	Varchar	5	FK
Hp	Varchar	17	
Alamat	Text		
Jumlah		75	

c. Table Prodi

Table 3.3 Table Prodi

Field	Type	Length	Ket
Kd_prodi	Varchar	5	PK
Prodi	Varchar	25	
Jumlah		30	

d. Table Status

Table 3.4 Table Status

Field	Type	Length	Ket
kd_status	Varchar	5	PK
Status	Varchar	25	
Jumlah		30	

e. Table Receiver

Table 3.5 Table Receiver

Field	Type	Length	Ket
Id	Int	5	PK
Hp	Varchar	14	
Nama	Varchar	30	
Status	Varchar	25	
Alamat	Text		
Jumlah		74	

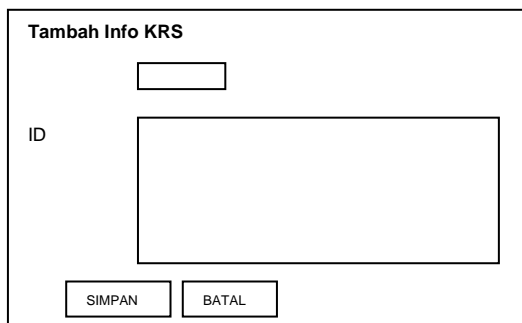### 3.6. Interface Design
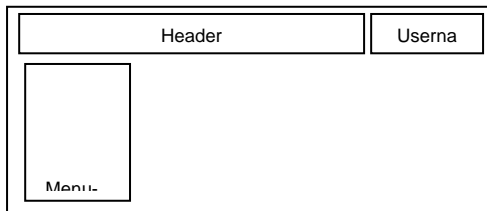
Picture 3.3 Home Form

c. The Draft Form Student Input
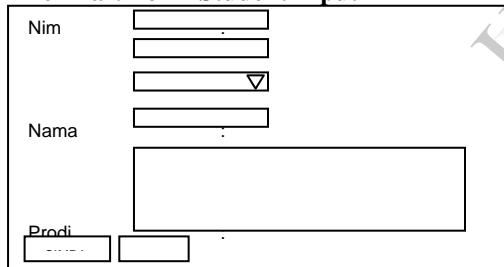
Picture 3.4 Form Student Input

f. The draft Form Input KRS Info

Picture 3.5 Form Input KRS Info

4.1 Implementation

a. Student Input Page

On this page is a page that displays the data input of students.

Picture 4.1 Student Data Input Page
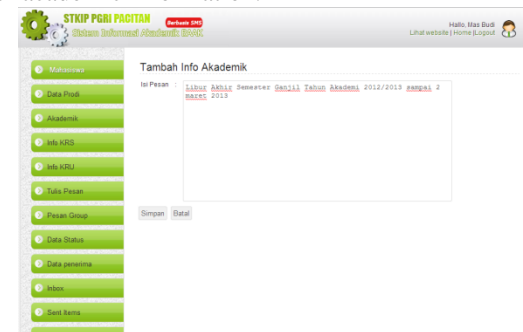
b. Input Page Prodi

On this page is a page that displays the data input Prodi.

Picture 4.2 Prodi Input Page
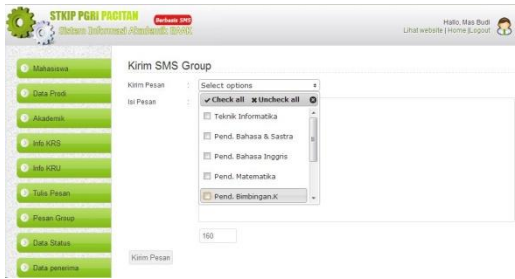
c. Input page Academic Info

On this page is a page that displays the data input of academic information.
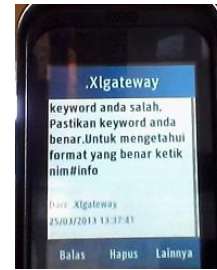

Picture 4.3 Academic information data input page

d. Page Input Message Group

On this page is a page that displays the form input messages Group.

Picture 4.4 Page Input Message Group

4.2. Trial

At this stage, the authors test the system prior proposals have been made if it is running as expected.

Picture 4.5 Academic Info

Picture 4.6 Academic Information Request

Picture 4.7 SMS Format Information

Picture 4.8 Information Keyword / Format One

No	Form Yang Diuji Coba	Hasil
1	Login	✓
2	Input data mahasiswa	✓
3	Input data prodi	✓
4	Input data Info Akademik	✓
5	Input data Info KRS	✓
6	Input data Info KRU	✓
7	Input data Status	✓
8	Input data Penerima	✓
9	Tampil data Mahasiswa	✓
10	Find NIM	✓
11	Data Prodi	✓
12	Tampil data Info Akademik	✓
13	Data Info KRS	✓
14	Data Info KRU	✓
15	Data Status	✓
16	Data Receiver	✓
17	Data Inbox	✓
18	Data Outbox	✓
19	Sending Status	✓
20	Edit password	✓
21	Edit Mahasiswa	✓

22	Edit Prodi	✓
23	Edit Info Akademik	✓
24	Edit Info KRS	✓
25	Edit Info KRU	✓
26	Edit Data Status	✓
27	Edit Data Receiver	✓
28	Del Data Mahasiswa	✓
29	Del Prodi	✓
30	Del Info Akademik	✓
31	Del Info KRS	✓
32	Del Info KRU	✓
33	Del Data status	✓
34	Del Data Receiver	✓
35	Import data Receiver	✓
36	Find Receiver	✓
37	Request Info Akademik	✓
38	Request Info KRS	✓
39	Request Info KRU	✓
40	Message Group	✓

Table 4.3 Comparison Table

NO	Description	Old Sistem	New Sistem
1	Get Campus Information at manual board	30 sc – 1,5 Hr	30 sc – 100 Sc

Tabel 4.4 Some Operator SMS Rates table (taken on August 1, 2012)

Jenis Layanan	Tarif	Keterangan
XL		
Same XL	Rp. 125	
Ext Operator	Rp. 150	

SIMPATI		
Same telkomsel	Rp. 150	- Free 500 SMS Morning - Free 200 SMS Night
Ext Operator	Rp. 150	- Free 500 SMS Morning - Free 200 SMS Night
AS		
a. Same Telkomsel	Rp. 150	- Free SMS After 3 SMS Hr 00.00 – 05.59 WIB - Free 1000 SMS after 7 SMS Hr 06.00 – 16.59 WIB - Free 1000 SMS After 7 SMS Hr 17.00 – 23.59 WIB

5.1 Conclusion

1. With this information system is party-based SMS Gateway BAAK STKIP PGRI PACITAN easier in the delivery of information to students.

2. Based on the opinion of 30 respondents with a variety of questions covering the quality of text-based systems, the ability of the system to help get the information, the ease and speed of process-based Information Systems sms gateway that generated an average of 85% - 90% of respondents are very appreciate for SMS Based Information System Gateway.

REFERENCES

[1] **Maryono, Bambang Eka Purnama (2012),** *Education Policy Development With Development Strategy Application Of National Test Exercises For Vocational High SchoolCase Study Vocational High School Bina Taruna Masaran Sragen,* International Journal of Computer Science Issues (IJCSI) Volume 9 Issue 5 Pages 136-145

[2] **Bambang Eka Purnama,** *Pemanfaatan Teknologi Wap Telepon Seluler Untuk Media Pembelajaran Jarak Jauh***,** Indonesian Jurnal on Computer Scoence - Speed 4 Volume 2 Nomor 2 *Desember 2007,* ISSN 1979 – 9330

[3] **M Affan Effendi, Bagus Wungu Hendrajati, Bambang Eka Purnama,** *Perancangan Sistem Layanan Informasi Akademik Berbasis Short Message Service*, Indonesian Jurnal on Computer Science – *Speed 11 Vol 8 No 2 – Agustus 2012* , ISSN 1979 – 9330

[4] **Sunardi, Murti Hari., Hersatoto Listiyono.** *Aplikasi SMS Gateway.* Universitas Stikubank Semarang.(2009)

[5] **Susila Budi Candra.** *Sistem Informasi Nilai Mahasiswa Berbasis Sms Gateway Pada STIT Muhammadiyah Pacitan,* University of Surakarta, (2012) ISSN

[6] **Rahmalia, Renita Diani., Simamora, Dani Mohamad.** Sistem Pendeteksi Keamanan Ruangan Dengan *Mikrokontroler ATMega16* Berbasis Layanan SMS *Gateway,* Telkom Polytechnic Bandung,(2012)

[7] **Putri, Dati Karina., Simamora, Hendriyanto Robby.** Implementasi Layanan SMS Gatewey Dengan Memanfaatkan Jaringan Interkoneksi Dalam Dukungan Media Koneksi Dosen-Mahasiswa, Telkom Polytechnic Bandung,(2012)

[8] **Fahrudin, Allex., Haryani.** Perancangan Sistem Informasi Penerimaan Peserta Didik Baru Sekolah Menengah Atas 2 Kudus Berbasis Intranet, Universitas of Surakarta,(2012) ISSN

[9] **Novianti Ariza., Fauzijah Ami.** Sistem Informasi Sekolah Dasar Berbasis SMS, Islamic University of Indonesia,(2009) ISSN

[10] **Tyas, Wardani Kristin.** Pembangunan Sistem Informasi Pembayaran Lembaga Bimbingan Beelajar Spectrum, Universitas of Surakarta,(2012) ISSN

[11] **Wijaya, Arif., Wijayaning, Nur.** Layanan informasi pembayaran kuliah Berbasis sms interaktif, Islamic University of Indonesia, (2009) ISSN

[12] **Lestari, Puji., Sasongko, Dimas.** Layanan informasi pembayaran kuliah Berbasis sms interaktif. Universitas of Surakarta, (2012) ISSN

[13] **Muslih, Muhammad Taufiq.** Pengembangan aplikasi sms gateway untuk informasi pendaftaran Peserta didik baru sman 1 jepara. Universitas of Surakarta, (2012) ISSN

[14] Lantip Diat Prasojo, Financial Resources Sebagai Faktor Penentu Dalam Implementasi Kebijakan Pendidikan, Jurnal Internasional Manajemen Pendidikan, Faculty of Education UNY

[15] Aminuddin Bakry, Kebijakan Pendidikan Sebagai Kebijakan Publik, Jurnal Medtek, Volume 2, Nomor 1, April 2010