E-LEARNING APPLICATION BASED ON WEB ON SMP NEGERI 2 SINDANGKERTA

Budi Santosa

10104258

Jurusan Teknik Informatika

Fakultas Teknik dan Ilmu Komputer, Universitas Komputer Indonesia

ABTRACT

Learning application on SMP Negeri 2 Sindangkerta still doing with the Conventional way. Which done with direct face to face and the time is limited so that it is needs more of learning which effective and effecient, the process learning is E-Learning.

In the development process of E-Learning application uses the descriptive research method with type research af case studies, where data collecting technique done with the stage of observation, interview and literature study. For software development methodology using waterfall method whereas for data modeling uses the structured method DFD (Data Flow Diagram) in depicting functional modeling and ERD (Entity Relationship Diagram) to illustratate data model and the programming language used is language of programming personal home pagetools (PHP) by using a database My Structure Querry Language (SQL) Server.

After going through stages of development in accordance with the chosen method is in implementing learning systems in E-Learning has a testing phase system consisting of alpha testing where this test using black box testing method that focuses on functional requirements and software testing is field testing Betha with data processing as a result of a choice accuracy score.

The application can help the students learn because there are several function including downloading materials, doing excercises, tests and directly communicate with teachers through lifechat, so that students no longer needed to study using conventional means because of all the data needed by the students was provided.

E-learning. learning and web.

1. INTRODUCTION

E-learning is all that covers the use of computers in supporting efforts to increase the quality of learning, which includes the use of mobile technologies such as PDAs and MP3 players. Also the use of web-based teaching materials and hypermedia, multimedia CD-ROMs or web sites, discussion forums, collaborative software, e-mail, blogs, wikis, computer aided assessment, educational animation, simulations, games, learning management software, electronic votting systems, and others

.

The advantages of using e-learning include:

1. *Save time teaching and learning process*
2. *Reduce travel costs*
3. *Saves the cost of education as a whole (infrastructure, equipment, books)*
4. *Reaching a wider geographic area*
5. *Train the students more independent in getting science.*

ANALYSIS AND DESIGN SYSTEM

2.1. Context Diagram

Context diagram is the first step in designing a structured system that is the description of the system outline (general), to describe the data flows into and out of the system.
Pengambaran context diagram is a pattern that serves to show the interaction of information systems with the environment in which the system is placed.

In this pengambaran, the system is considered an object that is not described in detail because the emphasis was on system interaction with the environment that will access it.
Pemebelajaran application context diagram on the web-based e-learning in the Junior Country 2 Sindangkerta can be seen in the picture below

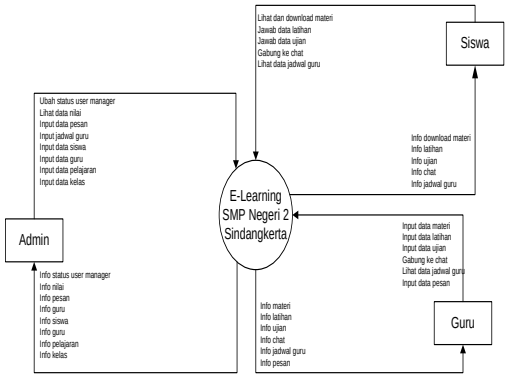


Figure 1. Context diagram

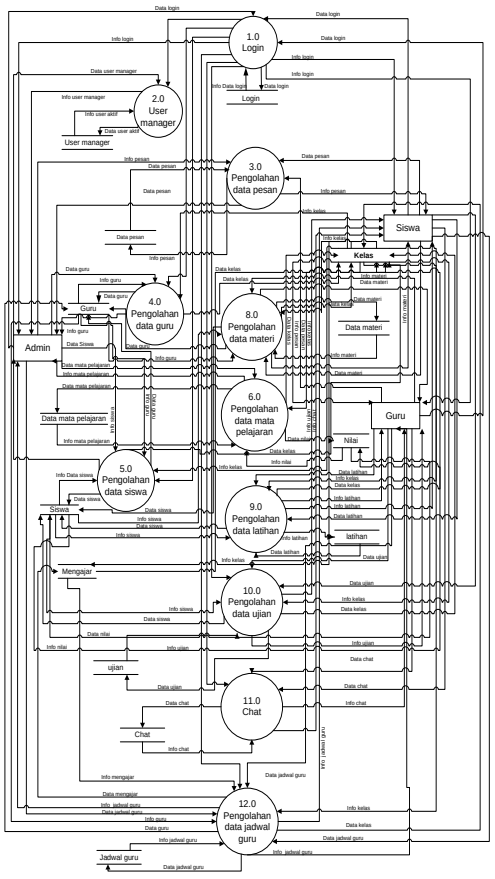
2.2. Data Flow Diagram (DFD)

Data Flow Diagrams (DFD) is used to describe the workflow of the system to be built or running system. Data Flow Diagram is a structured system development tool, which consists of several levels

.

2.2.1 DFD Level 0

DFD Level 0 describes that web users can access the website by selecting the menu such as logging into the system as an administrator, teacher and students. Inside there are several different options according to each user's access rights. Some of them follow the material, doing exercises and so forth. Then the system will find the option in data processing files and then displays the menu to the user.



Gambar 2. DFD Level 0

2.2.1. DFD Level 1 process 1

In the DFD level 1 process 1 describes the details of the process 1 is the login process, in which there is some process again that is the verification process the username, and password verification process, especially for admins there are processes select the school year that aims to select the school year that will be processed . Login verification process is a process of checking into whether the database login data from a user in accordance with existing data in the database, Password verification process is a process for knowing the password entered is valid or not and the verification process of the school year is to determine whether years of lesson selected in accordance with the existing database. *username*, dan proses *verifikasi password*.

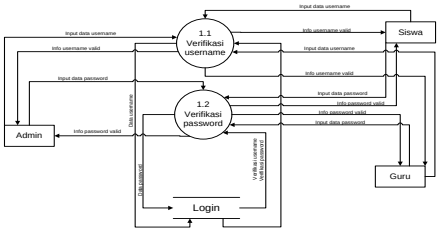


Figure 3. DFD Level 1 proses 1

2.2.2. DFD Level 1 process 2

In DFD Level 1 Process 2 describes the process manager where admin users can to know which users are already doing a register so that it keeps the user checks that have not done the registration. Inside there are 2 menus that refer to active users and change the status of the user, if the user status changed to non-active then the user is not able to login.

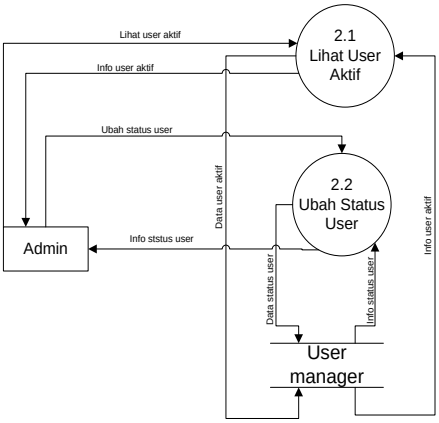


Figure 4. DFD Level 1 process 2

2.2.3. DFD Level 1 process 3

In the DFD level 1 process 3 describes the data message is processed by the user where the admin and teachers can actively perform message processing, message processing performed by the admin includes several processes that include select a destination delivery of the message and input message to be sent, the message processing performed by teachers include input messages to be sent and the message is intended only for students and

students could only see the messages sent by teachers and admin.

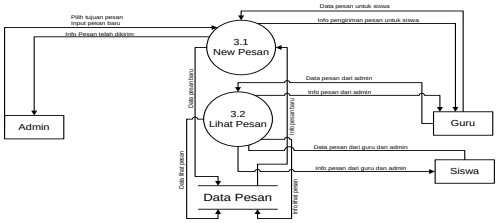


Figure 5. DFD Level 1 process 3

2.2.4. DFD Level 1 process 4

In DFD Level 1 process 4 describes the process of teacher data by admin, in this process an admin can perform additional editing teacher and teacher data.

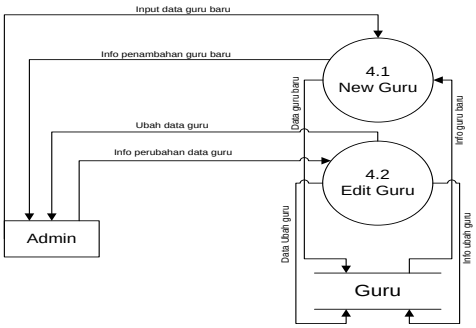


Figure 6. DFD Level 1 process 4

2.2.5. DFD Level 1 process 5

In the DFD level 1 process 5 describes how the admin to process student data, in this process there are two treatment processes including the addition of new students and edit student data.

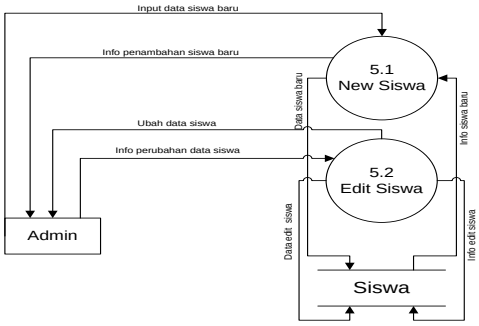


Figure 7. DFD Level 1 process 5

2.2.6. DFD Level 1 process 6

In the DFD level 1 process 6 tedapat some subjects processing performed by the administrator including the addition of lessons, lessons edit, delete and change the status of learning lessons. If the lesson status is not active then these lessons can not be accessed by teachers and students.

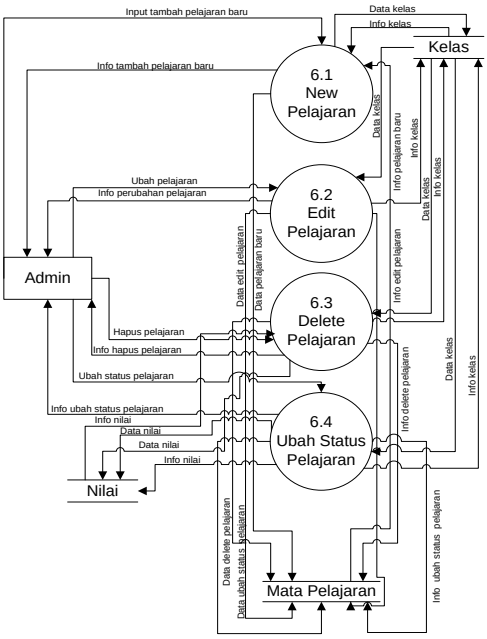


Figure 8. DFD Level 1 process 6

2.2.7. DFD Level 1 process 7

In the DFD level 1 process 7 explains the data processing course material that can be done by two users with each task differently.

Teachers in this case can be made additional lesson material, edit the subject matter, remove the subject matter and upload materials to be delivered to students in accordance with diolahnya subjects, while students in this manner can make the process look at subject matter in order to learn the lessons given by a teacher who is at the core-core of the material provided now for more details students can download course material so that students can learn more in the material being taught by teachers.

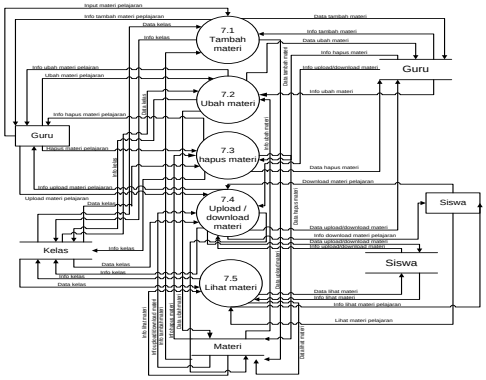


Figure 9. DFD Level 1 process 7

2.2.8. DFD Level 1 process 8

In the DFD level 1 process 8 describes the data processing exercise performed by teachers and students. Teachers can do more exercise, change and delete training and exercises students can only do the responsible exercise of the process to answer practice questions that are considered by selecting the correct answer.

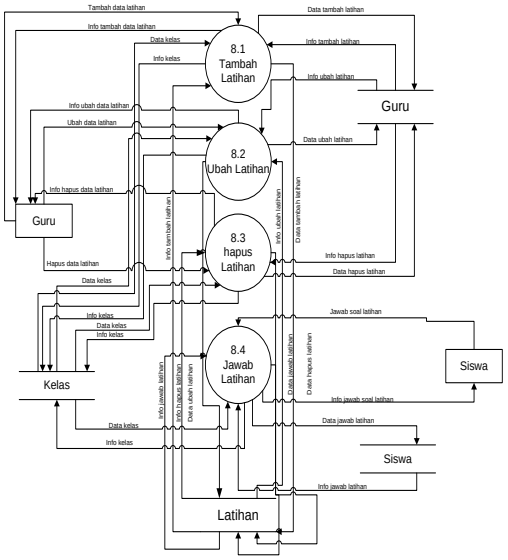


Figure 10. DFD Level 1 process 8

2.2.9. DFD Level 1 process 9

In the DFD level 1 process 9 there is some processing done by teachers and students, while teachers in this process can perform additional data about the test, change and delete exam questions exam in accordance with the needs of students while in this case can do the exam answer is answer exam questions before the deadline given by subject teachers.

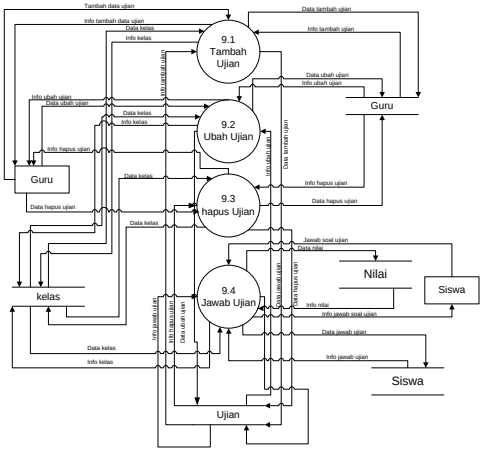


Figure 11. DFD Level 1 process 9

2.2.10. DFD Level 1 process 10

In the DFD level 1 process 10 describe the data processing performed by the teacher chat

and students, the chat data processing which have two charging a name that will be used as a name in the chat and the next is to join the chat which is a process that is done sending messages directly between users who are logged in the application

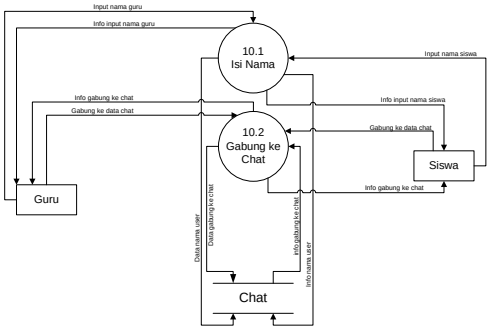


Figure 12. DFD Level 1 process 10

2.2.11. DFD Level 1 process 11

In the DFD level 1 process 11 describes how the processing schedule of teachers conducted by the admin and the schedule can be viewed by students and teachers to know the days and hours of how a teacher can make the learning process. An admin can perform the addition of teacher schedules when there is no addition of new teachers or teachers, teacher schedules change if there are changes to the schedule of teachers and teacher schedules do the deletion if a teacher has been out of school. Teachers and students can only view the schedule made by the admin without being able to perform the processing schedule of teachers.

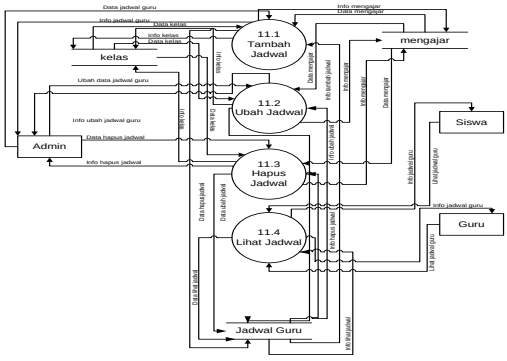
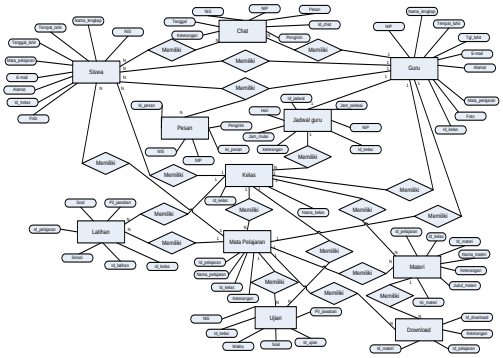


Figure13. DFD Level 1 process 11

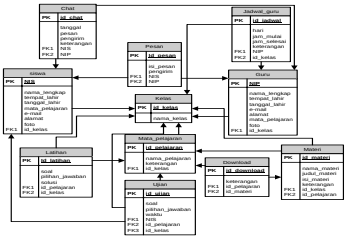
2.3. Entnity Relationship Diagram (ERD)

Entity Relationship Diagram (ERD) is one way to process a database so that data can know the relationship between files and technique, it can be used to overcome the redundancy of data or the like. For more details, the form of Entity Relationship Diagram (ERD) can be seen in the picture below:



2.4. Relation Scheme

Relation schema is a set of relationships between two or more tables in the database system. The following is an explanation of a series of databases on the application of E-learning



3. DATABASE IMPLEMENTATION

3.1 Generate User

Nama Tabel	Hasil *Generate*
User	GO CREATE TABLE `an_contact` (`id` int(11) NOT NULL auto_increment, `nomorinduk` text, `nama` text, `alamat` text,

User Pk: NIP Fk: NIP, Nama, Alamat, Kelas, Kelas Mengajar, Mata Pelajaran, Email, Tempat Lahir, Tanggal Lahir, Foto	`kelas` int(11) default NULL, `matpel` text, `published` int(11) default NULL, `email` text, `tempatlahir` text, `tgllahir` date default NULL, `level` int(11) NOT NULL, `foto` text NOT NULL, PRIMARY KEY (`id`)) ENGINE=MyISAM DEFAULT CHARSET=latin1 AUTO_INCREMENT= 15 ; GO

3.2 Generate Mata Pelajaran

Nama Tabel	Hasil *Generate*
Materi Pelajaran **Materi Pelajaran** Pk: Id_Pelajaran Nama Pelajaran, Keterangan	GO CREATE TABLE `an_matpel` (`id` int(11) NOT NULL auto_increment, `parentid_kelas` int(11) default NULL, `nama` text, `published` int(11) default NULL, PRIMARY KEY (`id`)) ENGINE=MyISAM DEFAULT CHARSET=latin1 AUTO_INCREMENT= 14 ; GO

3.3 Generate Materi

Nama Tabel	Hasil *Generate*
Materi **Materi** Pk: Id_Materi Nama Materi, M_Judul, Keterangan	GO CREATE TABLE `an_materi` (`id` int(11) NOT NULL auto_increment, `title_m` text, `title_alias_m` text, `kelas` text, `matpel` text, `fulltexts` text,
	`created` date default NULL, `created_by` int(11) default NULL, `published` int(11) default NULL, `ordering` int(11) default NULL, `hits` int(11) default NULL, `fileupload` text NOT NULL, PRIMARY KEY (`id`)) ENGINE=MyISAM DEFAULT CHARSET=latin1 AUTO_INCREMENT= 6 ; GO

3.4 Generate Latihan

Nama Tabel	Hasil *Generate*
Latihan **Latihan** Pk: Id_Latihan Username, Kelas, Soal, Pil Jawaban, Jawaban, Solusi	GO CREATE TABLE `an_latihan` (`id` int(11) NOT NULL auto_increment, `soal` text, `a` text, `b` text, `c` text, `d` text, `jawaban` text, `published` int(11) NOT NULL, `kelas` int(11) NOT NULL, `matpel` int(11) NOT NULL, `username` text NOT NULL, `solusi` text, PRIMARY KEY (`id`)) ENGINE=MyISAM DEFAULT CHARSET=latin1 AUTO_INCREMENT= 13 ; GO

3.5 Generate Ujian

Nama Tabel	Hasil *Generate*
Ujian **Ujian** Pk | Id_Ujian Username Kelas Soal Pil Jawaban Waktu	GO CREATE TABLE `an_ujian` (`id` int(11) NOT NULL auto_increment, `soal` text, `a` text, `b` text, `c` text, `d` text, `jawaban` text, `published` int(11) NOT NULL, `kelas` int(11) NOT NULL, `matpel` int(11) NOT NULL, `username` text NOT NULL, `solusi` text, `waktu` text NOT NULL, `ujian_id` int(11) NOT NULL, `judul_ujian` text NOT NULL, PRIMARY KEY (`id`)) ENGINE=MyISAM DEFAULT CHARSET=latin1 AUTO_INCREMENT=25 ; GO

3.6 Generate Pesan

Nama Tabel	Hasil *Generate*
Pesan **Pesan** Pk | Id_Pesan Judul Pesan Pengirim	GO CREATE TABLE `an_pesan` (`id` int(11) NOT NULL auto_increment, `untuk` text, `judul` text, `isi` text, `published` int(11) NOT NULL, `dari` text NOT NULL, PRIMARY KEY (`id`)) ENGINE=MyISAM DEFAULT CHARSET=latin1 AUTO_INCREMENT=7 ; GO

4. CONCLUSIONS AND SUGGESTIONS

4.1 Conclusion

The conclusion that can be drawn about the software program an additional learning application in web-based e-learning in the Junior Country 2 Sindangkerta are:

1. *Learning media that helps in the learning process enhancement.*
2. *Facilitate the delivery of material to students since.*
3. *Make it easier for teachers to deliver teaching materials.*
4. *This application is equipped with a means of message (announcement) so the students can continue to follow the development of school because message data can be directly sent by the admin.*

4.2 Suggestions

Here are some suggestions for further research, include:

1. *It is expected that an increase in security system*
2. *It is necessary to interactive video and audio streaming so that users can better understand the material taught in*
3. *In need of changes in terms of functional keypad interface so that applications can be more easily understood by users*

5. REFERENCES

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