Information System Design at SMA Negeri 2 Linggo Sari Baganti Based on Web Server

* Kevry Ramdany [1], Dio Hermanto [2], Sri Ardiyanti [3], Mezia Kemala Sari [4]
[1] Department of Informatic, Universitas Siber Muhammadiyah, Yogyakarta, Indonesia
[2, 4] Universitas Muhammadiyah Sumatera Barat, Padang, Indonesia
[3] SMA Negeri 1 Tampung Hilir, Riau, Indonesia
Email: [1] c.ramdany@gmail.com
*Corresponding Author

Abstract — **The assessment system at SMAN 2 Linggo Sari Baganti still uses a grade book which is printed into the report card by each subject teacher. This allows errors to occur in entering grades into the report card. So a web-based assessment information system was designed that could help teachers in managing grades. The value data processing information system is a system that provides reporting information online to help speed up the delivery of information. The aim of creating this website is to build a grade information system that makes it easier to check, record, and report student grade data that can be accessed at any time. The information system was built using the PHP (Hypertext Preprocessor) language and MySQL (My Structured Query Language) database. The results of this research are in the form of an assessment website that can process data by teachers so that students can see the assessment results.**

Keywords — Database, MySQL, PHP, Sistem Informasi. Web Server

I. INTRODUCTION

Seeing the current development of information technology and telecommunications refers to the development and progress of infrastructure. Technology is used to present and provide clear and high-quality information, including in the education sector, which previously relied on more operational personnel and has now been replaced by computerization, one form of progress in delivering information is by using websites.

Nababan and Efendy [6], in his research entitled "Implementation of a Web-Based Application Student Assessment (Reporting) System", explains the problems of schools that still use Microsoft Excel to enter student data and search for student data. , and from these problems, the researchers created how to store student assessment data in web-based report cards, view the score results, how design a student assessment system using the PHP programming language, and how to create a student assessment database using MySql. The benefit of teacher research is that it is easy to carry out the daily assessment process, both from daily grades and exams. Nursahit, et al. [10], in their research entitled "Development of an Information System for Assessment of Learning Outcomes for State High School (SMA) 2.

Web-Based Rembang", explains the creation of an information system that can be used to assess learning outcomes. This research can provide convenience in the implementation of student learning result-processing activities carried out by fathers, teachers, and homeroom teachers.

Haerani, et. al [12], in their research entitled "Web-Based Student Grade Data Processing Information System", explain how to create a web-based student grade data processing information system, where this application uses XAMPP as a web server for system design and MySQL as a database, the benefit of creating this information system is to produce a value processing system that helps the work of administration and homeroom teachers and can make it easier for users to carry out the value processing process so that value management can be processed more efficiently and effectively, so that it can be directly accessed and value information can be conveyed. Padeli, et. al [16] in their research entitled "Design and Development of a Web-Based Student Assessment Information System at Al-Husna Vocational School, Tangerang City" explain the student assessment system which runs semi-computerized into a system which is completely computerized, namely a web-based system that can run effectively and does not take a long time. The method used in research problems uses the SWOT (Strength, Weakness, opportunities, Threats) method, while system design uses UML (Unified Modeling Language) and for programming languages uses PHP and MySQL in creating the database.

Anisya, et. al [1], in his research entitled "Web-Based Academic Data Processing Software Engineering at SMK N 1 Koto Baru", in his research explains how to design an academic data processing application. This research can make it easier for schools to process data and provide the information they need.

In current conditions, Linggo Sari Baganti State High School 2 has 59 teaching staff and total students from 2017 to 2020 are approximately 600 students, of which there are approximately 200 new students who register each year.

Currently, the website at SMAN 2 Linggo Sari Baganti school still displays general information about the school. In terms of assessment at SMAN 2 Linggo Sari Baganti school is now carried out by teachers manually. Which includes assessment from several aspects, namely daily assessments in the form of assignments, exercises, as well as daily tests (UH), assessments for mid-semester exams and final semester exams are carried out manually in a report by each teacher concerned. The student assessment process becomes slow, and there are opportunities for errors in entering report card data, and data loss because it is still done manually.

From this problem, an assessment information system is needed that can process value data so that the value data processing process can run quickly and accurately. So it can be used to make it easier for teachers to enter student grades and save time in assessing and searching for student grade data.

Thus, it is necessary to design an assessment information system in assessment management. such as test scores, exam scores, and assignment scores. With this assessment information system, it is hoped that it will make it easier and save time for teachers in carrying out assessments.

II. RESEARCH METHODS

In developing the SMA N 2 Linggo Sari Baganti website, where previously there was no assessment system on the website, the assessment system was developed to make it easier for teachers to monitor student data and students could also see their grades. This system was created using PHP and MySQL. The design and development of this academic value information system is more focused and cannot be separated from information and data related to the subject of discussion, so several methods are used to obtain information and data. The method used is the research method, which is an activity that aims to find facts in writing. In this thesis, the author uses the following method:

A. Development Method

Based on the description of the background and objectives, this research uses a research approach with SDLC or the Software Development Life Cycle. SDLC is a software development method, namely a process that is usually used by system analysts in developing information systems, both in determining design needs, validation, and training. SDLC is not only important for the software production process but is also very important for the software maintenance process it self. Without archiving software development data, it will be very difficult for companies to maintain the software in the future Pratama, [17]. The model used in designing this information system is the waterfall model. The waterfall model provides a sequential or ordered software life flow approach starting from analysis, design, coding, testing, and support stages. This model is depicted in the Figure below:

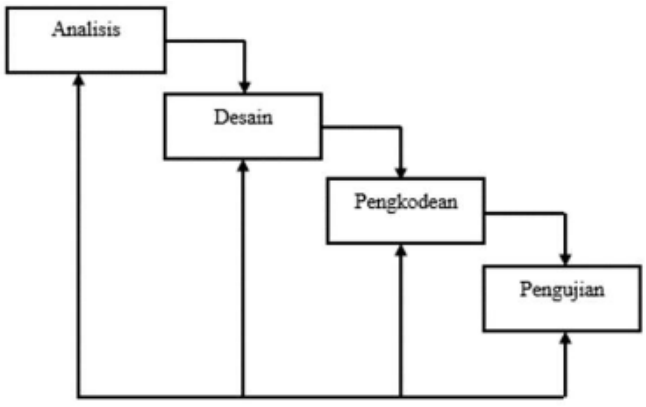


Figure 1 WaterfallTable Process Model

B. Waterfall Process Model

Research Instrument

The data collection techniques used in this research include the following:

- The observation stages carried out were by direct observation of the system management process at SMA Negeri 2 Linggo Sari Baganti. The purpose of this observation is to understand the system that is running and find out the problems and needs that exist in the field.
- Interview are data collection techniques carried out through direct or indirect conversations and questions and answers. The objects used for interviews in this research were direct system officers, the form of questions was generally about the school and the problems faced in the Linggo Sari Baganti 2 State High School system..
- Literature study is research that uses existing system sources. This literature study aims to obtain an adequate theoretical basis for preparing this research. Literature study is used to find sources of research and information on the internet, journals/articles, or in printed books.
- Questionnaire is a data collection tool in the form of questions that will be filled in or answered by respondents. Several reasons for using questionnaires are that they are mainly used to measure factual variables, to obtain information that is relevant to the research objectives, and to obtain information with the highest possible validity and reliability. The software testing process on the functionality and usability aspects using a questionnaire. To obtain data from respondents, the questionnaire used was closed.

III. RESULT AND DISCUSSION

The design and development of this academic value information system is more focused and cannot be separated from information and data related to the subject of discussion, several methods are used to obtain this information and data, including:

- The literature Study carried out is by studying and understanding journals, citing theories from several literatures, final assignments related to web topics, and books related to web-based applications.
- Field Research or observation is direct data research on the object to be studied.

A. Database Design

To fulfill information containing user needs and facilitate understanding of information structures, a database was designed to process academic data at SMA N 2 Linggo Sari Baganti.

1) Abnormal Table. In an abnormal table, all data is collected to determine the needs of a database system, at this stage, it is made into one table and there is still a repetition of data, from all the data there is some data collected such as id_admin, id_teacher, nip, name teacher, date of birth, place of birth, address, cell phone number, NISN, student name,

date of birth, place of birth, address, cell phone number, class, year, kd_mapel, maple name, kd_major, department name, kd_semester, semester, kd_value, mid-exam, and final exam.

TABLE 1. ABNORMAL

Id_Admin		Id_Teacher	
1		1	
2		2	
NIP	**Teachers' name**	**Date of birth**	**Place of birth**
197108281998022001	Ririn Indah Sari	23-04-1987	Kambang
197108281998022001	Ririn Indah Sari	23-04-1987	Kambang
197108281998022001	Ririn Indah Sari	23-04-1987	Kambang

2) Normalization Table. After the data is collected, data normalization is carried out, whereas before normalization the data is not yet in the right table and there is data repetition.

a) 1NF Normalization. The first normal of a relation or table satisfies the first normal if and only if each attribute of the relation only has a single value in one row. The abnormal stage produces the normal form of the first stage,

b) Normalize Admin Login Data. The following is a form of normalization of the first stage of admin login. From the first normalization of the admin login, there are several data, namely, kd_admin, username, and password.

TABLE 2 1NF LOGIN ADMIN NORMALIZATION

Kd_Admin	Username	Password
1	Fauziah	123
2	Haliman	1234

c) Normalization of Teacher Login Data. The following is a form of normalization for the first stage of teacher login. From the first normalization of the teacher login, there are several data, namely, kd_teacher, username, and password.

TABLE 3 1NF LOGIN TEACHER NORMALIZATION

Kd_teacher	Username	Password
1	Ririn Indah Sari	123
2	Hasminar	1234
3	Amran	1233
4	Wenda Saputra	1243

d) Normalization of Teacher Data. The following is the form of the first stage of normalization from the teacher normalization table. From the first normalization of the teacher, there are several data, namely, nip, teacher's name, date of birth, place of birth, address, cellphone number, NISN, student's name, date of birth, place of birth, address, cellphone number, class, and year.

TABLE 4 1NF DATA TEACHER NORMALIZATION

NIP	Teachers' name	Date of birth
197108281998022001	Ririn Indah Sari	23-04-1987
197108281998022001	Ririn Indah Sari	23-04-1987
197108281998022001	Ririn Indah Sari	23-04-1987
197108281998022001	Ririn Indah Sari	23-04-1987
197108238923829301	Hasminar	25-04-1990
197108238923829301	Hasminar	25-04-1990
197108238923829301	Hasminar	25-04-1990
197108238923829301	Hasminar	25-04-1990
197108233223242233	Amran	18-09-1986
197108233223242233	Amran	18-09-1986
197108233223242233	Amran	18-09-1986
197108233223242233	Amran	18-09-1986
197232433299020011	Wenda Saputra	20-02-1980
197232433299020011	Wenda Saputra	20-02-1980
197232433299020011	Wenda Saputra	20-02-1980
197232433299020011	Wenda Saputra	20-02-1980

e) Normalization of Student Data. The following is the form of the first stage of normalization from the student normalization table. From the first normalization of the student, there are several data, namely, NISN, student's name, date of birth, place of birth, address, cellphone number, NISN, student's name, date of birth, place of birth, address, cellphone number, class, and year.

TABLE 5 1NF STUDENT DATA NORMALIZATION

NISN	Student's Name	Date of birth
0053899297	Leo Nopriandi	20-03-2003
0035050190	Rahmat Firdaus	25-08-2002
0032037319	Sri Nova	15-02-2002
0022039530	M. Fauzan	23-03-2003
0033038493	Siska	02-04-2003
0003847598	Putri Natasya	09-03-2001
0030494030	Azura	23-08-2001
0009379389	Yumiza	20-11-2003
0009376399	Widya Wati	25-04-2000
0039903930	Debby Putri	22-09-2002
0029039390	Tari	11-03-2000
0040999309	Siska permata	22-03-2001
0020039389	Rangga Firdo	28-06-2001
0050403330	Silvi Febriani	30-05-2000
0030033899	Rizaldi Afta	20-12-2003
0033099393	Fitri Anis	19-08-2002

f) Normalization of Subject Data. The following is the form of the first stage of normalization from the subject normalization table. From the first normalization of subjects, there are several data, namely, kd_subject and name_subject.

TABLE 6 1NF SUBJECT NORMALIZATION

Kd_Subject	Subject's name
MP2002	Biologi
MP2003	Kimia
MP2012	Geografi
MP2013	Sosiologi

g) Normalization of Department Data. The following is the form of the first stage of normalization from the department normalization table. From the first normalization of majors, there are several data, namely, kd_major and name_major.

TABLE 7 NORMALIZATION OF 1NF MAJORS

Kd_Majors	Name_Majors
JR01	IPA
JR02	IPS

h) Semester Data Normalization. The following is the form of the first stage of normalization from the semester normalization table. From the first semester normalization, there are several data, namely, kd_semster and semester name.

TABLE 8 1NF NORMALIZATION OF SEMESTER DATA

Kd_Semester	Semester
Kd01	1
Kd02	2

i) Normalization of Value Data. The following is the form of the first stage of normalization from the value normalization table. From the first normalization of values, there are several data, namely, kd_values, assignments, daily, tests, midterms, and exams.

TABLE 9 NORMALIZATION OF 1NF VALUE DATA

Kd_Value	Assignment	Daily
NL0022	85	87

j) 2NF Normalization. The second normalization of a relation satisfies the second relation if and only if the relation satisfies the first normal and every non-key attribute is functionally dependent on the primary key. From the first normal stage, the second normal form is produced.

k) Normalization of Teacher Data. The following is the second stage of normalization form from the teacher normalization table. From the normalization of the two teachers, there are several data, namely, nip, teacher's name, date of birth, place of birth, address, and cellphone number.

TABLE 10 2NF NORMALIZATION OF TEACHER DATA

NIP	Teachers' name	Date of birth
197108281998022001	Ririn Indah Sari	23-04-1987
197108238923829301	Hasminar	25-04-1990
197108233223242233	Amran	18-09-1986
197232433299020011	Wenda Saputra	20-02-1980

l) Normalization of Student Data. The following is the second stage normalization form of the student normalization table. From the normalization of the two students, there are several data, namely, nip, teacher's name, date of birth, place of birth, address, cellphone number, class, and year.

TABLE 11 2NF NORMALIZATION OF STUDENT DATA

NISN	Student's name	Date of birth
0053899297	Leo Nopriandi	20-03-2003
0035050190	Rahmat Firdaus	25-08-2002
0032037319	Sri Nova	15-02-2002
0022039530	M. Fauzan	23-03-2003
0033038493	Siska	02-04-2003
0003847598	Putri Natasya	09-03-2001
0030494030	Azura	23-08-2001
0009379389	Yumiza	20-11-2003
0009376399	Widya Wati	25-04-2000
0039903930	Debby Putri	22-09-2002

m) Normalization of Maple Data. The following is the second stage normalization form of the maple normalization table. From the normalization of the two subjects, there are several data, namely, nip, teacher's name, date of birth, place of birth, address, and cellphone number.

TABLE 12 2NF NORMALIZATION OF SUBJECT DATA

Kd_Subject	Subjects' name
MP2002	Biologi
MP2003	Kimia
MP2012	Geografi
MP2013	Sosiologi

n) Normalization of Department Data. The following is the form of the second stage of normalization from the department normalization table. From the normalization of the two departments, there are several data, namely, kd_major, and the name of the department.

TABLE 13 2NF NORMALIZATION OF DEPARTMENT DATA

Kd_departments	Departments' name
JR01	IPA
JR02	IPS

o) Semester Data Normalization. The following is the form of the second stage of normalization from the semester normalization table. From the normalization of the two semesters, there are several data, namely, kd_semester, and semester name.

TABLE 14 2NF NORMALIZATION OF SEMESTER DATA

Kd_Semester	Semester
Kd01	1
Kd02	2

p) Normalization of Value Data. The following is the form of the second stage of normalization from the value normalization table. From the normalization of the two values, there are several data, namely, kd_value, mid-exam, and final exam.

TABLE 15 NORMALIZATION OF 2NF VALUE DATA

Kd_Value	Assignment	Daily
NL0022	85	87
NL0022	80	85
NL0022	87	87
NL0022	87	87
NL0033	70	85
NL0033	87	87
NL0033	85	87
NL0033	80	85
NL0044	87	87
NL0044	87	87
NL0044	75	87
NL0044	75	87
NL0055	87	77

B. Table Design in the Assessment Database

1) Admin Login Table. To log in to access the admin page, you need a username and password to log in.

TABLE 16 ADMIN LOGIN

Field	Type	Length	Information
Username	Varchar	50	
Password	Varchar	50	

2) Teacher Login Table. To log in to access the teacher's page, you need a username and password to log in.

TABLE 17 TEACHER LOGIN

Field	Type	Length	Information
Username	Varchar	50	
Password	Varchar	50	

3) Student Login Table. To log in to access the student page, you need a username and password to log in.

TABLE 18 STUDENT LOGIN

Field	Type	Length	Information
Username	Varchar	50	
Password	Varchar	50	

4) Teacher's Table

To enter teacher data, there are several teacher data, namely nip, teacher name, and date. Birth, place of birth, address, and no. mobile phone.

TABLE 19 TEACHER

Field	Type	Length	Information
NIP	Varchar	20	Primary Key
Username	Varchar	50	Foreign Key
Name_teacher	Varchar	50	
date_birth	Date	8	
place_birth	Varchar	50	
address	Varchar	50	
Phone_Number	Varchar	15	

5) Students' Table. To enter student data, there are several teacher data, namely nisn, student name, and date. Birth, place of birth, address, no. cellphone, class, and year.

TABLE 20 STUDENTS

Field	Type	Length	Information
NISN	Char	20	Primary Key
Name_Student	Varchar	50	
date_birth	date	8	
place_birth	Varchar	50	
Address	Varchar	50	
phone_number	Varchar	15	
Class	Char	5	
Year	Year	4	

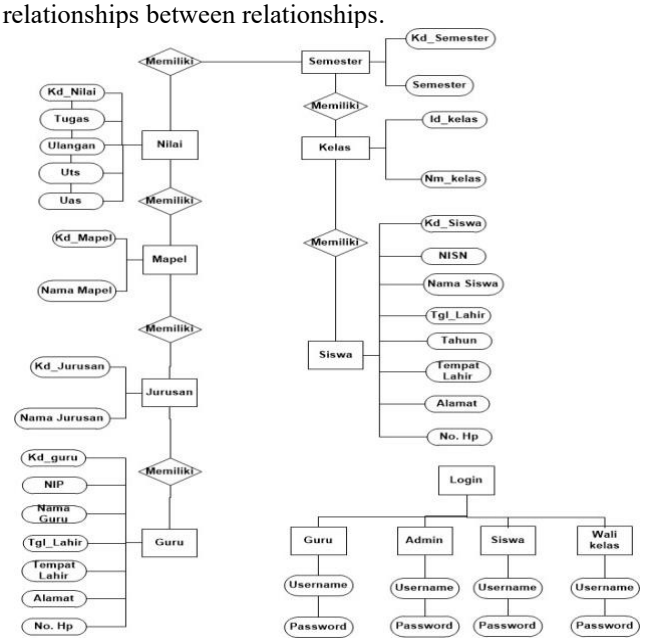
6) Subject Table. To store subject names, there are several subject data, namely kd_mapel, and subject name.

TABLE 21 SUBJECTS

Field	Type	Length	Information
Kd_subject	Int	15	Primary key
Subject's name	Varchar	50	
Department	Varchar	5	

C. ERD (Entity Relationship Diagram)

Entity Relationship Diagram is a form of diagram that explains the relationship between data objects that have relationships. The following is an ERD display to explain the relationships between data in a database that has relationships between relationships.



Picture 1 ERD (Entity Relationship Diagram)

D. Context Diagram

A context diagram is a diagram that describes the flow of data in this information system.

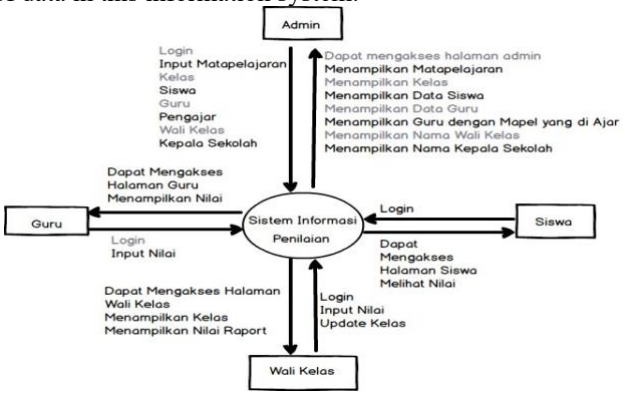


Figure 2 Context Diagram

Information:

1) Admin logs in to be able to access subject, teacher, student, class, year, teaching, semester, and department data.

2) The teacher logs in to be able to access student grade data.

3) Students can see the grades from the assessment information system.

E. Interface Design

To facilitate use between the user and the system, an interface description was designed by the author as follows.

1) Login Admin. To enter the admin page, you must log in to be able to access the admin page.

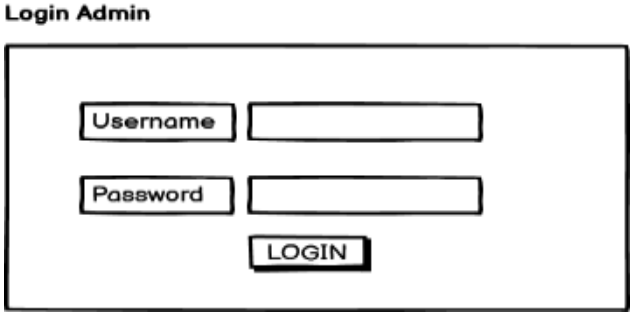


Figure 3 Admin Login

2) Teacher Login. To enter the teacher's page, you must log in to be able to access the teacher's page.

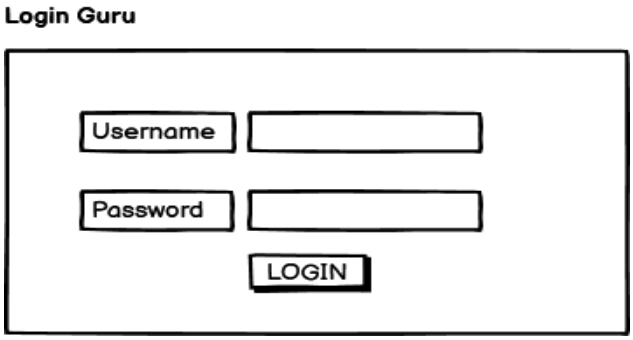


Figure 4 Teacher Login

3) Admin Dashboard. The initial display of the Admin page.

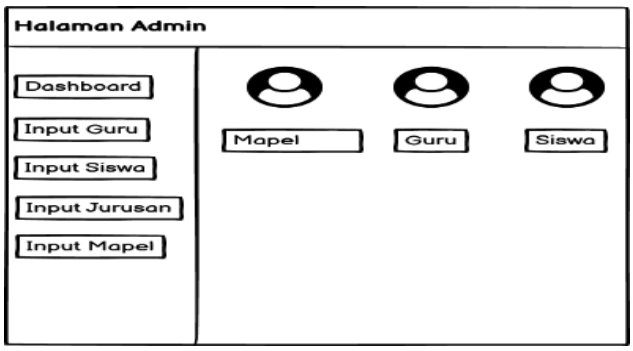


Figure 5 Admin Dashboard

4) Teacher Dashboard.Initial display of the teacher page.

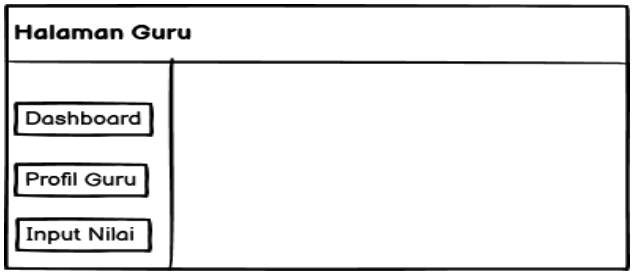


Figure 6 Teacher Dashboard

5) Teacher Input. To add teacher data, which can be changed and deleted.

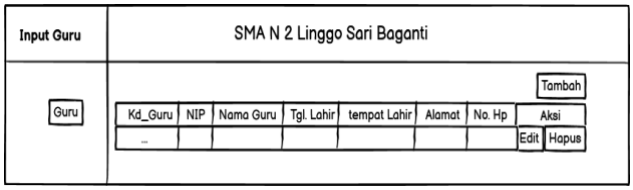


Figure 7 Teacher Input

6) Student Input. To add student data, which can be changed and deleted.

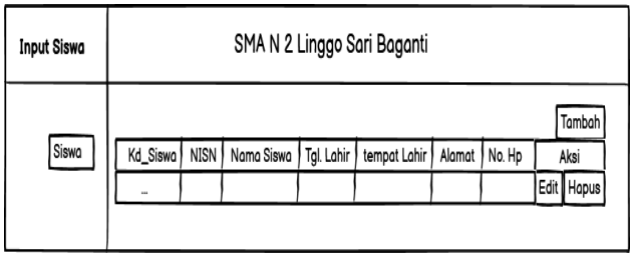


Figure 8 Student Input

7) Input major. To add majors, which can be changed, and deleted.

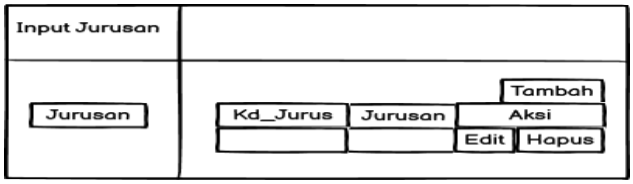


Figure 9 Major Input

8) Subject Input. Input subjects to add what subjects will be added can be changed, and deleted.

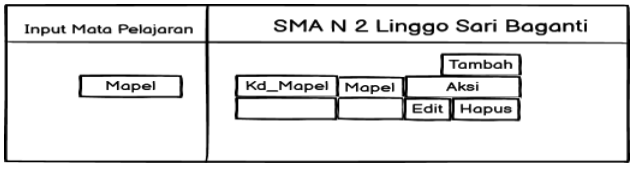


Figure 10 Subject Input

9) Input Value. Input values to add what values will be added can be changed, and deleted.

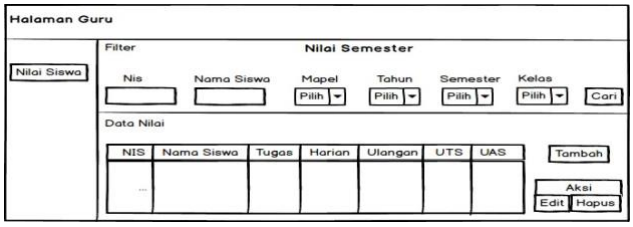


Figure 11 Value Input

10) Value Output. An output design is needed as a basis for designing a system, for the output of data that has been entered into a system, so an output design is needed as follows:

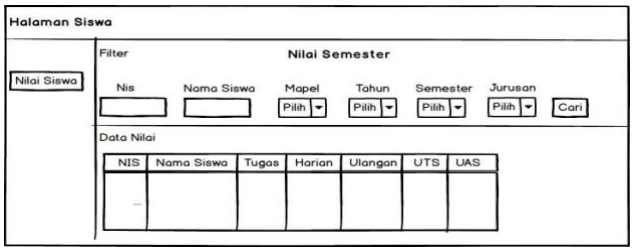


Figure 12 Value Output

11) Admin Login Page (Figure 13). The admin login page is a login that will appear before the system is run by the user. So that users can access the admin page, users must enter their username and password as admin to be able to access the system.

12) Admin Dashboard Page (Figure 14). The Admin dashboard page will appear after completing the login process. This home page will display several other pages, such as Admin pages, subject pages, class pages, teachers, students and others.

13) Subject Data Page (Figure 15). On the subject data page there is data on the subjects being taught, such as subject ID, subject name, major, level, kkm, and electives. On the added subjects page, you can change the subjects taught by the teacher.

Figure 13 Admin Login Form Page

Figure 14 Dashboard Admin

NO	ID MAPEL	NAMA MATA PELAJARAN	JURUSAN	TINGKAT	KKM	PILIHAN
1	M0001	Pendidikan Agama Islam (X A)	umum	1	70	
2	M0002	Pendidikan Agama Islam (XI A)	umum	2	70	
3	M0003	Pendidikan Agama Islam (XII A)	umum	3	70	
4	M0004	Pend. Kewarganegaraan (X A)	umum	1	70	
5	M0005	Pend. Kewarganegaraan (XI A)	umum	2	70	
6	M0006	Pend. Kewarganegaraan (XII A)	umum	3	70	
7	M0007	Bhs. Indonesia (X A)	umum	1	75	
8	M0008	Bhs. Indonesia (XI A)	umum	2	75	
9	M0009	Bhs. Indonesia (XII A)	umum	3	75	
10	M0010	Bhs. Inggris (X A)	umum	1	75	
11	M0011	Bhs. Inggris (XI A)	umum	2	75	

Figure 15 Subject Data Page

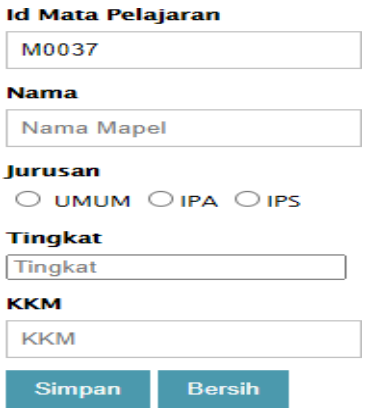


Figure 16 Add Subject Page Student Report Card

14) Report Card (Figure 16 and 17). The report page functions to display student assessment results.

F. Functionality Testing Analysis.

Based on the test results using test cases distributed to 3 expert respondents, it can be concluded that the test results can be calculated using the ISO 9126 formula as follows:
X=1-A/B X=1 -0
X=1-0/27 X=1

Based on the test formula above, a maximum value can be obtained, namely 1. Thus the software meets the functionality aspect.

NO	MATA PELAJARAN	KKM	NILAI RATA-RATA	STATUS	PILIHAN
1	Sosiologi (X A)	70	85.0	Tuntas	Detail Nilai
2	Ekonomi (X A)	70	80.0	Tuntas	Detail Nilai
3	Geografi (X A)	70	90.0	Tuntas	Detail Nilai
4	Biologi (X A)	70	90.0	Tuntas	Detail Nilai
5	Fisika (X A)	70	85.0	Tuntas	Detail Nilai
6	Sejarah (X A)	70	85.0	Tuntas	Detail Nilai
7	Kimia (X A)	70	85.0	Tuntas	Detail Nilai
8	Matematika (X A)	70	80.0	Tuntas	Detail Nilai
9	Bhs. Inggris (X A)	75	80.0	Tuntas	Detail Nilai
10	Bhs. Indonesia (X A)	75	80.6	Tuntas	Detail Nilai
11	Pend. Kewarganegaraan (X A)	70	81.3	Tuntas	Detail Nilai
12	Pendidikan Agama Islam (X A)	70	80.0	Tuntas	Detail Nilai

Figure 17 Student Report

G. Usability Testing Analysis

Based on testing the usability aspect using a questionnaire that was distributed to 30 respondents as users. Determining whether usability testing is feasible or not is by calculating the product of the instrument results by the number of respondents. The data obtained is quantitative and then the data is converted into qualitative data using a Likert Scale in interval form. The calculation can be seen as follows.

Total Score answering SS	= 289 x 5	=	1445
Total Score answering S	= 315 x 6	=	1890
Total Score answering RG	= 214 x 3	=	636
Total score answering TS	= 24 x 2	=	45
Total score answering STS	= 0 x 1	=	0
Total score overall		=	4016

Information:

- SS: Totally agree
- S: Agreed
- RG: Doubtful
- TS: Disagree
- STS: Strongly disagree

IV. CONCLUSION

The conclusion that can be drawn from the design of the school assessment information system at SMAN 2 Linggo Sari Baganti is that it can help teaching staff in processing student score data. From the results of the research and discussions that have been carried out, the following can be obtained: (1) The Information System at SMA Negeri 1 Linggo Sari Baganti was successfully created. In its development, it uses the CodeIgniter framework. Furthermore, in the software development process using method (2) Based on the results of the software feasibility assessment carried out by experts, it produces a max value of 1. The waterfall consists of 4 stages, namely: Analysis, Design, Coding, and Testing. In this way, the software meets the functionality aspect. Meanwhile, the assessment results from 30 respondents consisting of teachers and students obtained a result of 79.5%. This result can be said

to be in the appropriate category because it is in the interval of 68% to 83%. In this way, it meets the usability aspect.

REFERENCES

[1] Anisya, A. N. I. S. Y. A., and Wahyu Hidayat. "Analisa Perancangan Aplikasi Pengolahan Data Akademik Berbasis Web." Jurnal TeknoIf, ISSN (2017): 2338-2724, DOI: http://dx.doi.org/10.30645/j-sakti.v2i1.58.

[2] Budi Sutedjo, Dharma Oetomo,2006, Perencanaan dan Pembangunan Sistem Informasi, Penerbit Andi, Yogyakarta

[3] Bunafit Nugroho.2004. PHP dan MySQL dengan Editor Dreamweaver MX Yogyakarta.

[4] Fathansyah. 2007. Buku Teks Ilmu Komputer Basis Data. Bandung: Informatika. Hutahaean, Jeperson. 2014. Konsep Sistem Informasi. Yogyakarta: Deepablish. Indrajani. 2015. Database Design Case All In One. Jakarta: Elex Media Komputindo.

[5] Leman. (1998). Metodologi Pengembangan Sistem Informasi. Jakarta. PT. ElexMedia Komputindo.

[6] Marlince NK Nababan and Efendy, "PENERAPAN WEB BASED APPLICATION SISTEM PENILAIAN (REPORTING) SISWA", JIKOMSI, vol. 3, no. 2, pp. 44-48, Sep. 2020, DOI: https://doi.org/10.9767/jikomsi.v3i2.62.

[7] (Reporting) Siswa", JIKOMSI Jurnal Ilmu Komputer Dan Sistem Informasi Vol 3 No 2, September 2020, pp 60-64.

[8] Ni Luh Wiwik Sri Rahayu Ginantra, Ni Wayan Wardani, dkk. (2020) Basis Data Teori Dan Perancangan. Penerbit: Yayasan Kita Menulis.

[9] Nugroho, Bunafit. (2008). Latihan Membuat Aplikasi Web PHP dan MySQL dengan Dreamweaver. Gava Media, Yogyakarta.

[10] Riasti, Berliana Kusuma, and Bambang Eka Purnama. "Pembangunan sistem informasi penilaian hasil belajar siswa Sekolah Menengah Atas (SMA) Negeri 2 Rembang berbasis web." Indonesian Journal of Networking and Security (IJNS) 4.2 (2013), DOI: http://dx.doi.org/10.55181/ijns.v4i2.1339.

[11] Oktaviani, Ika. "Sistem Informasi Pengolahan Data Nilai Siswa Berbasis Web Pada SMP NEGERI 2 Rasau Jaya", 21 Agustus 2017. https://repository.bsi.ac.id / index.php / repo / viewitem / 444 [Diakses pada 24 Oktober 2020].

[12] Haerani, Reni, and R. Dewi Mutia Farida. "PERANCANGAN SISTEM INFORMASI MEDIA KOMUNIKASI BERBASIS ANDROID." JSiI (Jurnal Sistem Informasi) 7.2 (2020): 116-122, DOI: https://doi.org/10.30656/jsii.v7i2.2517.

[13] Repository.amikom.ac.id. "Perancangan Sistem Informasi Penilaian Hasil Belajar Dan Kepribadian Siswa Pada SD Negeri Gilis Rembang", 02 Juni 2013. [Diakses Pada 05 Desember 2020].

[14] Yakub. 2008. Sistem Basis Data Tutorial Konseptual. Yogyakarta: Graha Ilmu.

[15] AW Subroto, RA Agustina, FA Chelsea, DA Anggoro Abdi Teknoyasa. 2021. Perancangan sistem informasi sekolah berbasis website sebagai sarana promosi pada SDN TOSO 02. Abdi Teknoyasa. https://doi.org/10.23917/abditeknoyasa.v2i2.201

[16] Padeli, Padeli, Gilang Kartika Hanum Ramadhan, and Ulfa Tiana Aprilyani. "Perancangan Sistem Informasi Penilaian Siswa Berbasis Web Pada SMK Al-Husna Kota Tangerang." Technomedia Journal 4.2 Februari (2020): 155-169, DOI: https://doi.org/10.33050/tmj.v4i2.1033.

[17] Pramana, Galang Yuda. "Sistem Informasi Pada Dekorasi Diajeng Salon Berbasis Web Mobile." JTKSI (Jurnal Teknol. Komput. dan Sist. Informasi) 2.2 (2019): 62-67, DOI: 10.56327/jtksi.v2i2.730.