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# Designing Student's Registration Book and Student's Report Card Processing Application For Pangudi Luhur Don Bosko Elementary School Semarang

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**Abstract**— The development of information and communication technology continues to run over time in various fields, without exception in the field of education. Master data management of students has now started using electronic media. At Pangudi Luhur Don Bosko Elementary School also used electronic media in its management, but the application has limitations in storing data, therefore the authors designed the "Student's Registration Book and Student's Report Card Processing Application for Pangudi Luhur Don Bosko Elementary School". The purpose of this research is to design and build student's registration book and student's report card processing so that it can facilitate data processing, and determine the factors that influence users to adopt this application. This writing method starts with a literature study followed by the design and construction of the application, the next step is testing the application to making report card. This application is able to store data with a much larger capacity, so it can continue to be used for years. This application can process student data and be a good student data archive. The factor that can influence the user to adopt this application is the student report card archiving feature with a very complex K13 model.

**Keywords**— Main Book, Report Card, Data, Application

## I. INTRODUCTION

Over time the development of

technology continues to increase even in the field of education[1]. From its inception, the educational institution was in dire need of data storage media that would be used to record all student data of the media was the student's registration book[1].

Student registration book that still use the manual writing method have a great risk of error in the writing process, besides the manual student's registration book also has a size that is so large that it requires a fairly large storage area[2]. The student's registration book is an archive that stores student data including the report card grades of each student[3].

At the moment Pangudi Luhur Don Bosko Elementary School has used an electronic-based student's registration book that uses the Microsoft Access Database application, but this application has limitations in data storage, so that every year it must be replaced with a new application, because the application can no longer hold new data the following year.

Based on the description above it is known that applications owned by Pangudi Luhur Don Bosko Elementary School currently have deficiency, especially in the management of student's registration book from previous years, because it will take up a lot of storage memory and there will be a lot of these applications in school computers and will continue increase from year to year. Therefore, the authors conducted research under the title of Student's Registration Book and Student's Raport Card Processing Application for Pangudi Luhur Don Bosko Elementary School

which will be web-based so that data can be stored online and will facilitate its management.

a data storage limit that can only be used in one school year.

## II. LITERATURE REVIEW

### A. Definition of Application

Application is something that can store things, data, work problems into a media that is used to implement things or problems so that it changes into a new form without eliminating the basic values of these things (Jogiyanto, 2005:112)"[4].

### B. Website

Website is the whole web pages contained in a domain that contains information and are interconnected[5].

A website will be displayed in a language called HTML (Hyper Text Markup Language)[6].

### C. Database

The database is a collection of files that are interrelated and interact, the relationship is connected with the key of each file that exists[5].

While the database system is an information system that integrates data sets that are interconnected with one another and makes it available for several applications in an organization (Kusumadewi, 2004)[7].

### D. Student's Registration Book

The student's registration book comes from a combination of two main words namely the registration book and students. According to the KBBI, the master book is a book that contains the biodata of people registered in an organization, residents of an area, and school students[8].

At the moment Pangudi Luhur Don Bosko Elementary School uses an electronic based student handbook application that is using the Microsoft Access Database application. The application has the disadvantage of having open source product made by Mark Otto and Jacob Thornton[12].

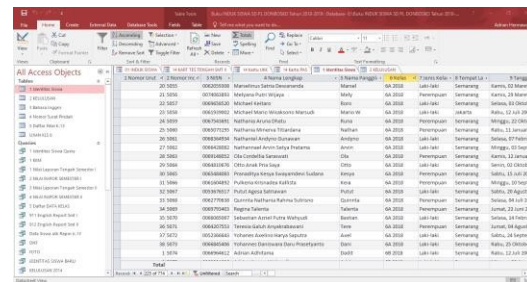


Figure 1. Current Don Bosko PL SD application

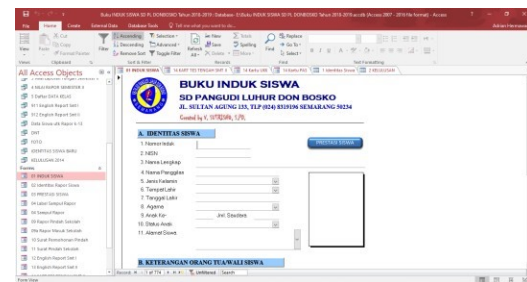


Figure 2. Current Don Bosko PL SD application

In this study the authors will make a web-based application so that data can be stored online and will facilitate its management.

### E. Report Card

Report cards are reports of student learning values and intelligence at school that are used as reports from schools to parents or guardians of students[9].

### F. Archives

Archive is everything that is written, illustrated and recorded which contains an explanation of a matter or information from an event that is used to help memories and / or can be used as guidelines[10].

### G. Bootstrap

Bootstrap is a framework used for creating website pages that provide features that are ready to use and easy to develop [11]. Bootstrap has a responsive nature, which is flexible for all devices used to access website pages[11].

According to Spurlock (2013: 1) states that Bootstrap is a framework for CSS and is an

### H. PHP dan MySQL

PHP (Perl Hypertext Preprocessor) which is a code or script that will be

run on the server side (Deni Sutaji, 2012: 2). PHP is sever side, which means skip work is done on the server, which later the results will be sent to the browser (MADCOMS, 2008: 1)[13].

MySQL is a database management system that is open source. This database system is the brainchild of Michael "Monty" Widenius, David Axmark, and Allan Larson in 1995[14].

### III. RESEARCH METHODOLOGY

The application development method applied in this study is the waterfall method. The waterfall method is a systematic and sequential information system development method[15]. The stages begin with requirements analysis, application design, program coding, testing and implementation.

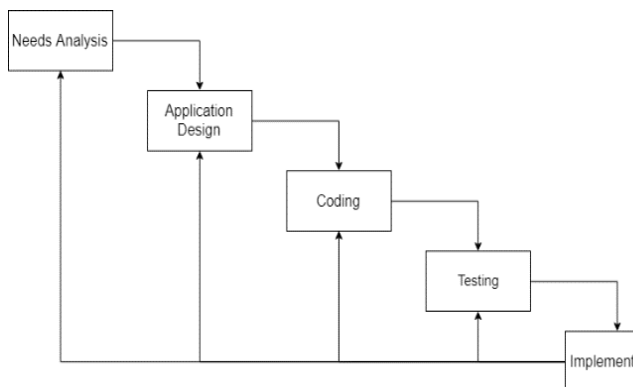


Figure 3. The waterfall method

### IV. RESULT AND DISSCUSSION

The application of the Student's Registration Book and Student's Report Card for Pangudi Luhur Don Bosko Elementary School is designed based on a flowchart that will be used by 4 users, namely the principal, administration, homeroom teacher, and teacher.

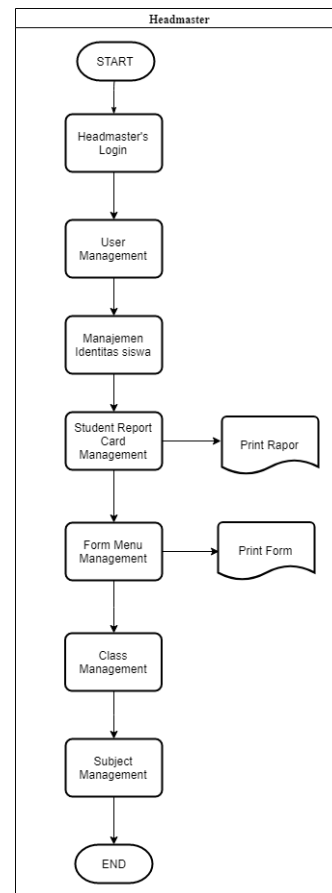


Figure 4. Headmaster User flowchart

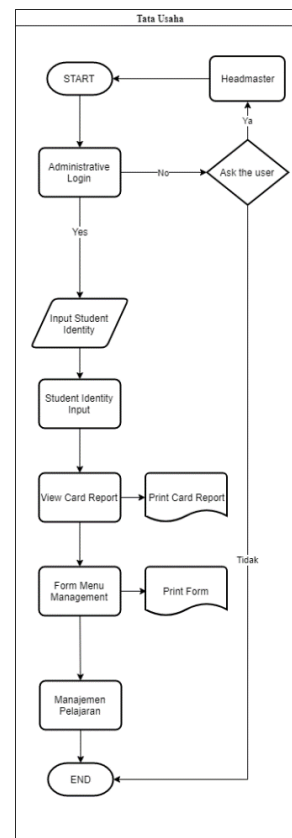


Figure 5. Administration User flowchart

designed based on ERD in Figure 9-11

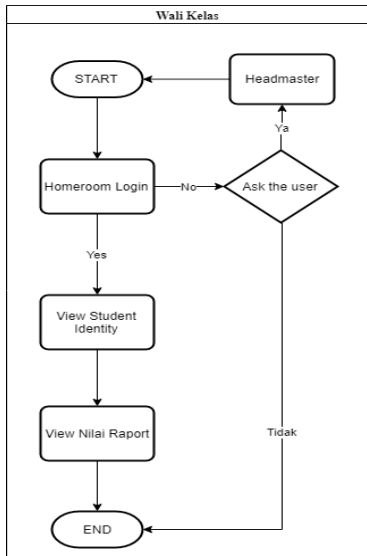


Figure 6. Homeroom teacher User flowchart

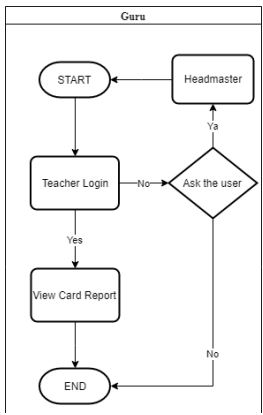


Figure 7. Teacher User flowchart

Making use case diagrams is useful for knowing the number of users and features that can be accessed by each user.

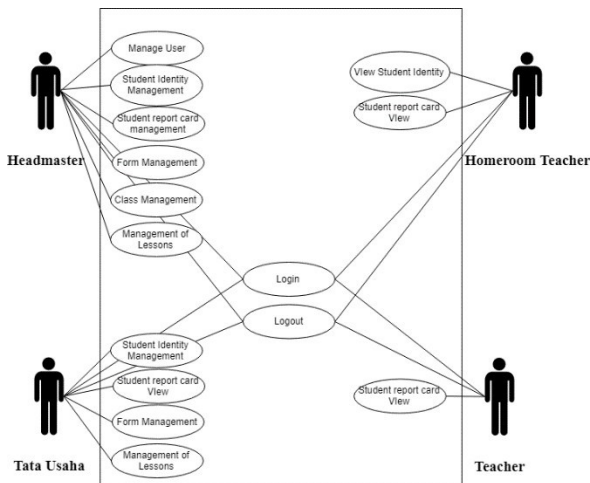


Figure 8. Use Case Diagram

The database in this application is

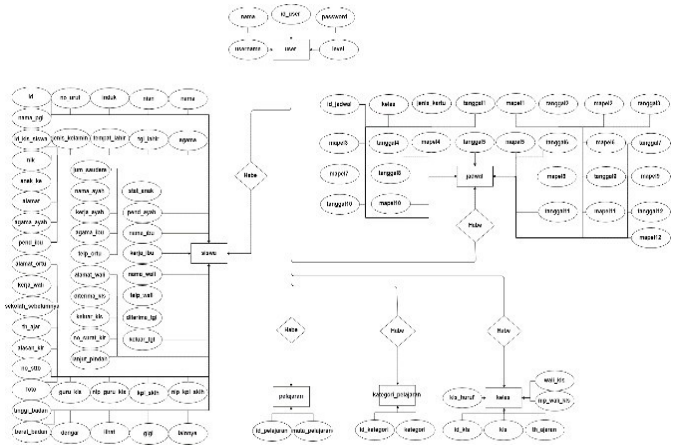


Figure 9. Entity Relationship Diagram Part 1

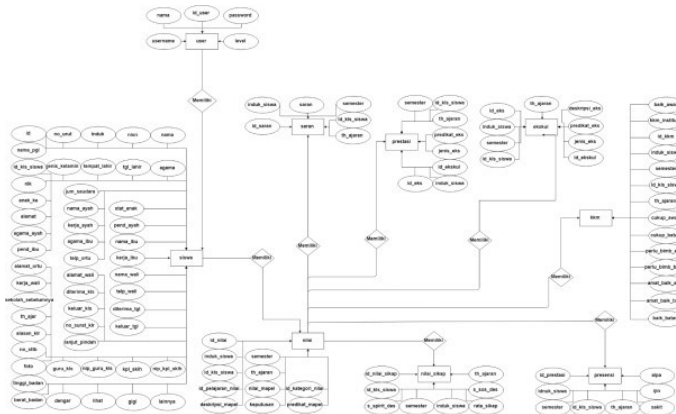


Figure 10. Entity Relationship Diagram Part 2

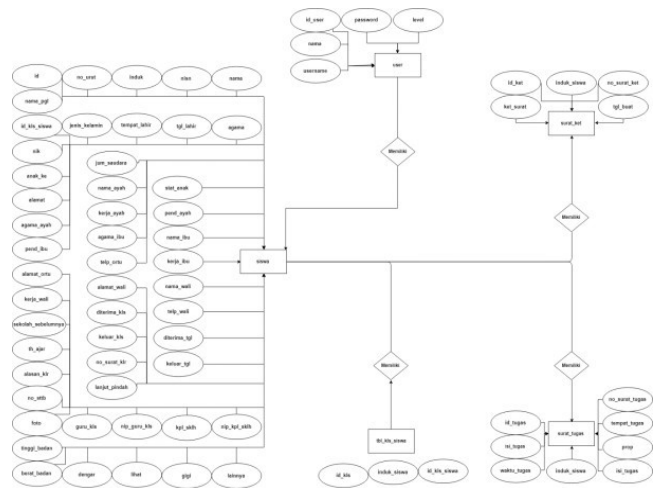


Figure 11. Entity Relationship Diagram Part 3

In the login process is determined by 4 roles to determine what pages can be accessed by that user. The four roles are the principal, administration, homeroom teacher, and teacher.

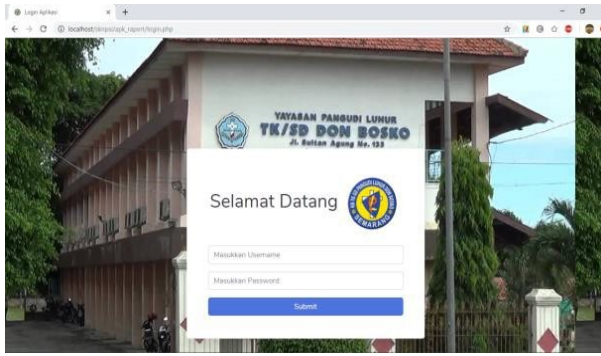


Figure 12. Login display

The Student identity page has features including adding, updating and deleting data. In addition to these common features, there are also features that add student data by importing through Excel files, then export the data displayed by the table into an excel file, and can select the columns you want to display using the column visibility feature.

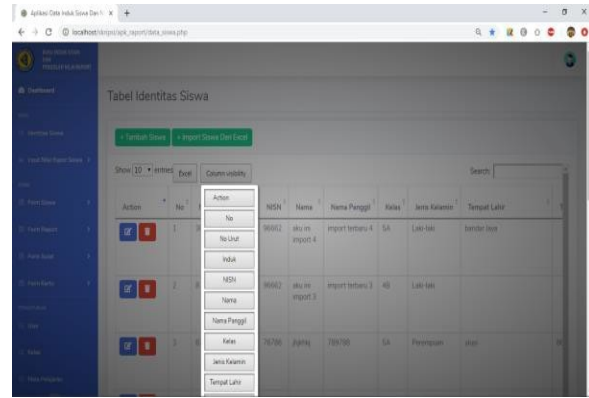


Figure 15. Display column visibility of student identity

The student report card page serves to display the student report card value data which is divided into semester 1 and semester 2 grades. Values that have been inputted can then be updated and printed. The value input process can also be done by importing data from an excel file.

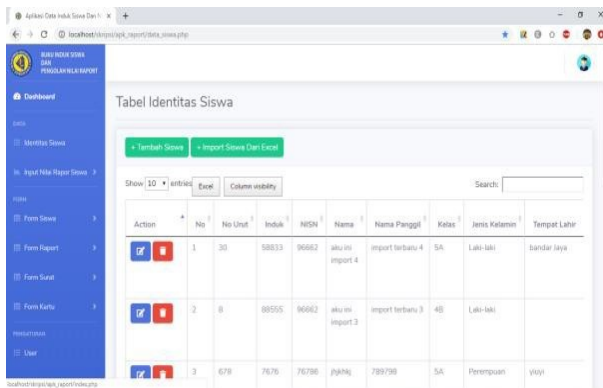


Figure 13. Students' identity page views

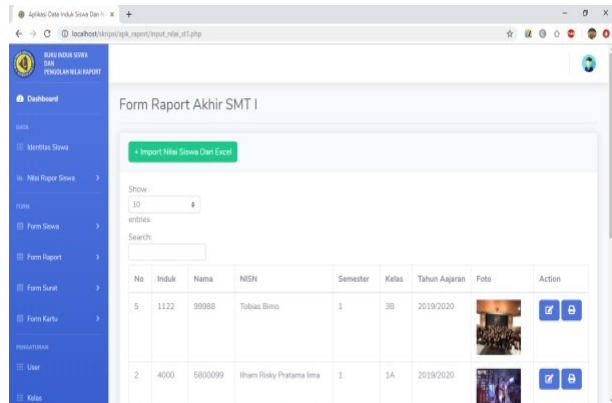


Figure 16. Display of student report card grades

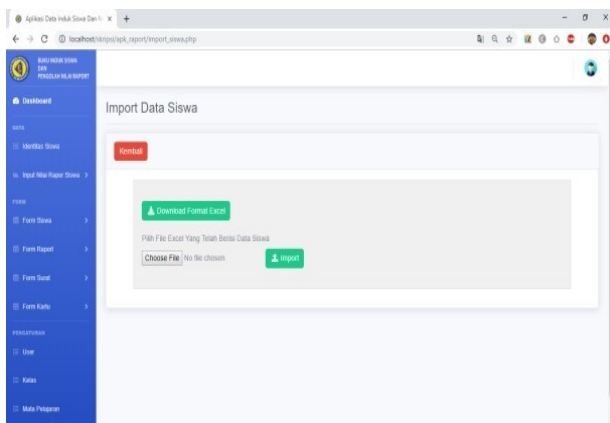


Figure 14. The student identity import page display

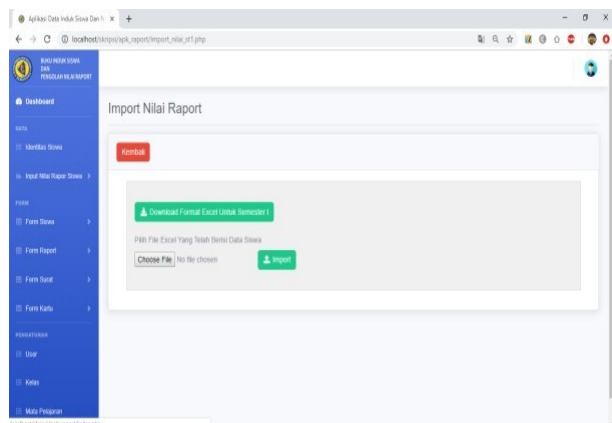


Figure 17. Display page import report card value

**RAPOR DAN PROFIL PESERTA DIDIK SEKOLAH DASAR  
TAHUN PELAJARAN 2019/2020  
SD PANGUDI LUHUR DON BOSKO  
.Telp. (024) 8319196.**

Nama : Nomaika  
 Nomor Induk : 40009 Kelas : 4  
 NISN : 43242 Semester : 1

**A. NILAI SIKAP**

No.	Aspek Penilaian	Nilai	Deskripsi
1.	Sikap Spiritual	Sangat baik	
2.	Sikap Sosial	Baik	

Rata-rata nilai sikap : C

**B. NILAI PENGETAHUAN DAN KETERAMPILAN**

No.	Muatan Pelajaran	A	N	P	Deskripsi
1.	Pendidikan Agama Katolik dan Budi Pekerti	Pengetahuan	90	A	Amat baik
		Keterampilan	90	A	Amat baik
2.	Pendidikan Pancasila dan Kewarganegaraan	Pengetahuan	66	C	Cukup
		Keterampilan	66	C	Cukup
3.	Bahasa Indonesia	Pengetahuan	90	A	Amat baik
		Keterampilan	90	A	Amat baik
4.	Matematika	Pengetahuan	66	C	Cukup
		Keterampilan	66	C	Cukup
5.	Ilmu Pengetahuan Alam	Pengetahuan	80	B	Baik
		Keterampilan	80	B	Baik
6.	Ilmu Pengetahuan Sosial	Pengetahuan	90	A	Amat baik
		Keterampilan	90	A	Amat baik
7.	Seni Budaya dan Prakarya	Pengetahuan	66	C	Cukup
		Keterampilan	66	C	Cukup
8.	Pendidikan Jurnani (Ketrampilan dan Kesehatan)	Pengetahuan	90	A	Amat baik
		Keterampilan	90	A	Amat baik
9.	Muatan Lokal	Pengetahuan	90	A	Amat baik
		Keterampilan	90	A	Amat baik

Rata-rata Nilai Aspek Pengetahuan : 80,89  
 Rata-rata Nilai Aspek Keterampilan : 79,78  
 Banyaknya Predikat D : 0  
 Banyaknya Predikat D : 0

**C. NILAI PENGEMBANGAN DIRI/EKSEKUTIF/ILUSTRER**

1. Pengembangan Diri

No.	Jenis Penilaian	P	Deskripsi
1.	Kepengabdian	A	memiliki pengalaman amat baik

Figure 18. Display print of student report card on page 1

**2. Ekstrakurikuler**

No.	Jenis Penilaian	P	Deskripsi
a.	Sepak Bola	B	Baik
b.	Bulu Tangkis	B	Baik
c.	Sepak Takraw	B	Baik
d.	Manik	B	Baik
e.	Basket	B	Baik

**\*Singkatan dan Keterangan :**  
 A : Aspek N : Nilai P : Predikat KKM : Kriteria Ketuntasan Minimal  
 KKM Institusi : 70 Predikat Rentang Nilai  
 A Amat Baik 85 - 100  
 B Baik 75 - 84  
 C Cukup Baik 65 - 74  
 D Perlu Bimbingan 50 - 64

**D.SARAN**  
 saran yang panjang

**E. KONDISI FISIK DAN KESEHATAN**

No.	Aspek Fisik	Nilai	Aspek Fisik	Kondisi Kesehatan
1.	Tinggi Badan	120	1. Pendengaran	baik
			2. Penglihatan	-2
2.	Berat Badan	40	3. Gigi	baik
			4. Lainnya	baik

**F. Prestasi**

No.	Jenis Prestasi	Keterangan
1.	lomba	melukis
2.	lomba	memwarnai
3.	lomba	mengambar

**G. KETIDAKHADIRAN**  
 1. Sakit : 0 hari  
 2. Ijin : 0 hari  
 3. Tanpa Keterangan : 1 hari

Kepala Sekolah : Orang Tua Wali : Guru Kelas

Kepala sekolah  
 NIP 24243424 ( ) Guru kelas 1  
 NIP 3232324

Figure 19. Display print of student report card on page 2

The student master form page functions to display student data, which can later be printed and can display all student identities in the student master book.

**BUKU INDIK SISWA  
SD PANGUDI LUHUR DON BOSKO**  
 JL. SULTAN AGUNG 133, TEL (024) 8319196 SEMARANG 50234

**A. IDENTITAS SISWA**

1. Nomor Induk	: 40006
2. NISN	: 5555
3. Nama Lengkap	: Puntia Dewa
4. Nama Panggilan	: Puntia
5. Jenis Kelamin	: Laki-Laki
6. Tempat Lahir	: Jogjakarta
7. Tanggal Lahir	: Thursday, June 04, 1998
8. Agama	: Katolik
9. Anak Ke-	: 2. Jun. Saudara : 2
10. Status Anak	: Kandung
11. Alamat Siswa	: Karang Rejo

**B. KETERANGAN ORANG TUA/WALI SISWA**

12. Nama Ayah	: Ayah Puntia
13. Pekerjaan Pendidikan/Agama	: Guru-SI/Katolik
14. Nama Ibu	: Ibu Puntia
15. Pekerjaan Pendidikan/Agama	: Wirawasta-SI/Katolik
16. Alamat Orang Tua	: Jogjakarta
17. Telpun	: 082424083432
18. Nama Wali	: Wali Puntia
19. Pekerjaan	: Dosen
20. Alamat Wali	: Jogjakarta
21. Telpun	: 823232

**C. MUTASI SISWA**

22. Sekolah Asal	: Sma jogjakarta
23. Diterima Kelas	: 1
24. Diterima Tanggal	: Saturday, June 18, 2005
25. Kelas Baru	: 6
26. Kelas Tanggal	: Tuesday, July 09, 2019
27. Alasan Keluar	: Tamat
28. Nomor STTB	: 234342DD
29. Melanjutkan/Pindah ke	: UNIKA Soegijpranata

Figure 20. Display print form student master

Student report card pages function to display student data, which can later be printed and can display student identity, which will be used as student identity on student report cards.

**IDENTITAS SISWA**

1. Nama Siswa	: Puntia Dewa
2. Nomor Induk	: 40006
3. NISN	: 5555
4. Jenis Kelamin	: Laki-Laki
5. Tempat, Tanggal Lahir	: Jogjakarta, Thursday, June 04, 1998
6. Agama	: Katolik
7. Sekolah Asal	: Sma jogjakarta
8. Alamat Siswa	: Kandung
9. Nama Orang Tua	: Ayah Puntia
a. Ayah	: Ayah Puntia
b. Ibu	: Ibu Puntia
10. Pekerjaan Orang Tua	: Guru
a. Ayah	: Wirawasta
b. Ibu	: Wirawasta
11. Alamat Orang Tua	: Jogjakarta
Telpun	: 082424083432
12. Wali Siswa	: Wali Puntia
a. Nama	: Wali Puntia
b. Pekerjaan	: Dosen
c. Alamat Wali	: Jogjakarta
Telpun	: 823232

Semarang, 21 Oktober 2019  
 Kepala Sekolah

Kepala Sekolahnya  
 NIP : 32423424

Figure 21. Display print form student report cards

The report card cover form page serves to display student data which can later be printed later used as a cover label on the student report card.

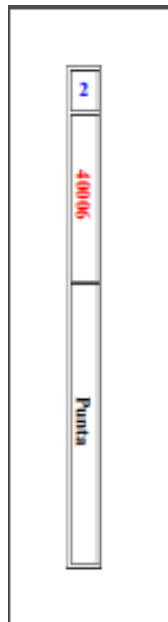


Figure 22. Display of printed report card cover sheet

The report card cover form page serves to display student data which can later be printed and can display student data needed, in the student report card cover.

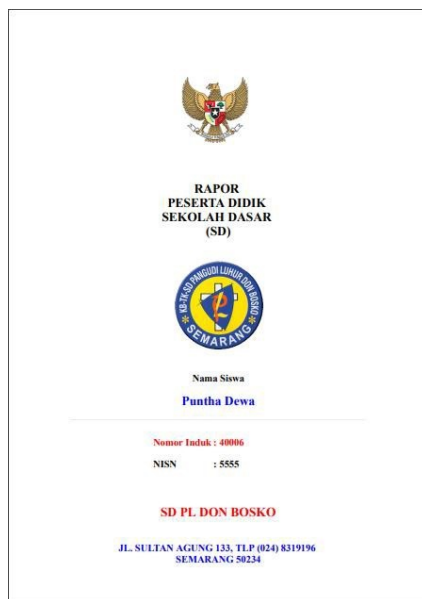


Figure 23. Display report card cover print

The school transfer report form page serves to display student data which can later be printed and can display the student data needed, in the school transfer report card.

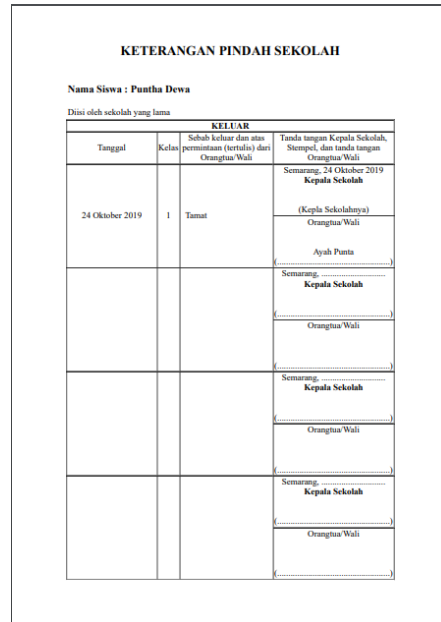


Figure 24. Display report card transfer school

The school entrance report form page serves to display student data which can later be printed and can display student data needed, in the school entry report card.

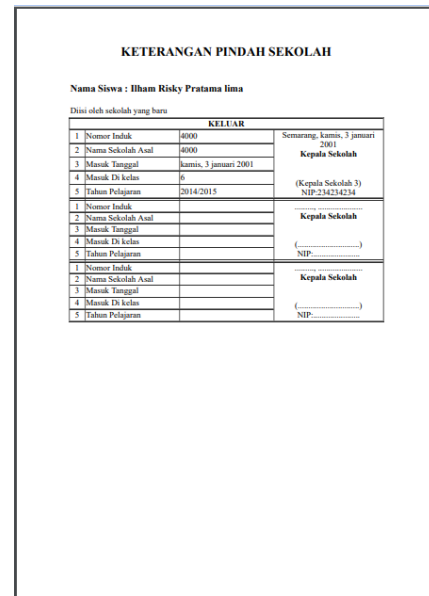


Figure 25. Display report card entry to school

The school transfer request page serves to display student data which can later be printed and can display student data needed, in the application letter for transferring schools.



**KETERANGAN PINDAH SEKOLAH**

Kepada  
Yth. Kepala Sekolah SD PL Don Bosko  
Jl. Sultan Agung 133, di Semarang

Dengan hormat,

Yang bertanda tangan di bawah ini

Nama : Ayah Bimo  
Alamat : Jakarta

Orangtua/Wali murid dari

Nama : Tobias Bimo  
Nomor Induk : 1122  
NISN : 99988  
Jenis Kelamin : Laki-laki  
Murid tingkat/kelas : 1

Mengajukan pindah anak tersebut ke

Nama Sekolah : UNIKA Soegijapranata  
Kecamatan : Gajah Mungkur  
Kabupaten/Kota : Semarang  
Propinsi : Jawa tengah  
Alasan Pindah : Tamat

Semarang, 25 Oktober 2019  
Hormat kami

Ayah Bimo

Figure 26. Display print of transfer request letter

The transfer page form page serves to display student data which can later be printed and can display the student data needed, in the transfer letter.

NAMA SISWA : .....

NAMA SEKOLAH : .....

ALAMAT : .....

DESA : .....

KELURAHAN : .....

KECAMATAN : .....

KABUPATEN/KOTA : .....

PROPINSI : .....

DITERIMA : .....

TANGGAL : .....

DI : .....

TINGKAT KELAS : .....

Figure 28. Display print certificate of transfer to school page 2

The certificate form page functions to display student data which can later be printed and can display the required student data, in a certificate.

Nomor Statistik Sekolah  
102030104025  
20329018

Nama Sekolah : SD PL Don Bosko  
Alamat : Jl. Sultan Agung 133, Semarang

**KETERANGAN PINDAH SEKOLAH**

Nomor : 12345

Yang bertanda tangan di bawah ini: Kepala Sekolah Dasar PL Don Bosko, Kecamatan Gajahmungkur, Kota Semarang Propinsi Jawa Tengah, menerangkan bahwa

Nama : Ayah Puntia  
Nomor Induk : 40006  
NISN : 5555  
Jenis Kelamin : Laki-Laki  
Murid tingkat/kelas : 1

Sesuai surat permohonan pindah sekolah dari Orang Tua

Nama : Ayah Puntia  
Alamat : Jogjakarta

Mengajukan pindah anak tersebut ke

Nama Sekolah : SD N 01  
Kecamatan : Semarang  
Kabupaten/Kota : Semarang  
Propinsi : Jawa Tengah  
Alasan Pindah : Ikut orang tua

Demikian surat pindah ini, agar dapat digunakan untuk pendaftaran siswa di sekolah yang baru

Semarang, 22 Oktober 2019  
Hormat kami

Kepala Sekolahnya  
NIP: 324234324

Setelah anak tersebut diterima di sekolah ini, isian di bawah ini harap diisi dan dikirim kembali kepada kami.

Nomor Statistik Sekolah

Figure 27. Display print certificate of transfer to school page 1

**SURAT KETERANGAN**  
No. 12345

Yang bertanda tangan di bawah ini

Nama : Victorianus Sutrisno  
NIY : G.10.245  
Jabatan : Kepala Sekolah  
Unit kerja : SD Pangudi Luhur Don Bosko

Menerangkan dengan sesungguhnya bahwa :

Nama : Puntia Dewa  
Tempat, tgl. lahir : Jogjakarta, Thursday, June 04, 1998  
Nomor Induk : 40006  
NISN : 5555  
Jenis Kelamin : Laki-Laki  
Alamat : Karang Rejo

Mengikuti lomba cerdas cermat

Demikian Surat keterangan ini saya buat dengan keadaan yang sebenar-benarnya, agar dapat dipergunakan sebagaimana mestinya.

Semarang, 22 Oktober 2019  
Kepala Sekolah

Kepala Sekolahnya

Figure 29. Display page print certificate

The assignment form page serves to display student data which can later be printed and can display student data as needed, in the assignment letter.

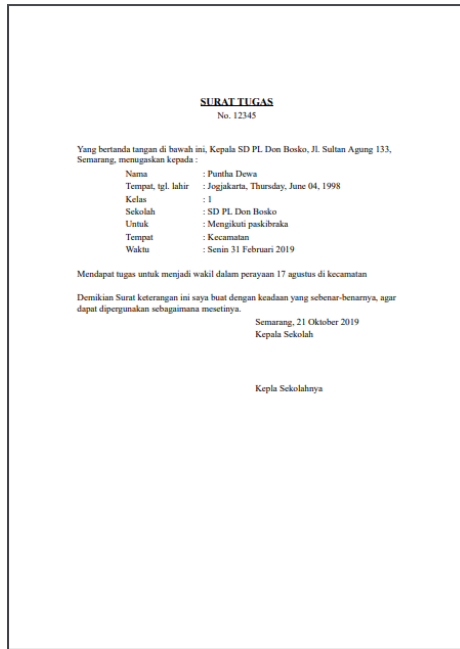


Figure 30. Print job page views

The card form page functions to create exam cards for students. The exam card can be in the form of midterm 1, final exam semester 1, midterm exam 2, and final exam semester 2.

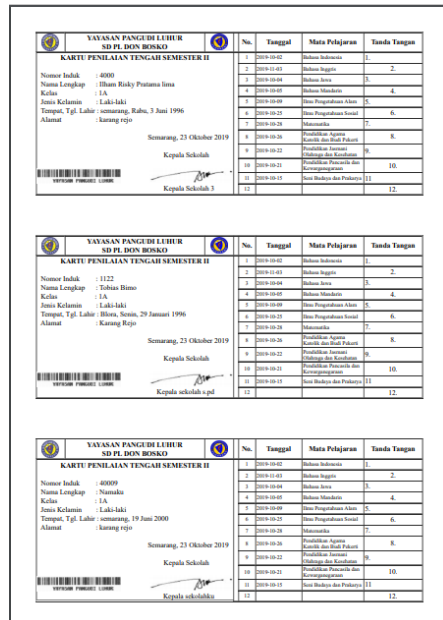


Figure 31. Test card printout results

The user page is for the principal, on this page the principal can add new users, and determine in what level the user is included. In addition, the principal can also do the update and delete process.

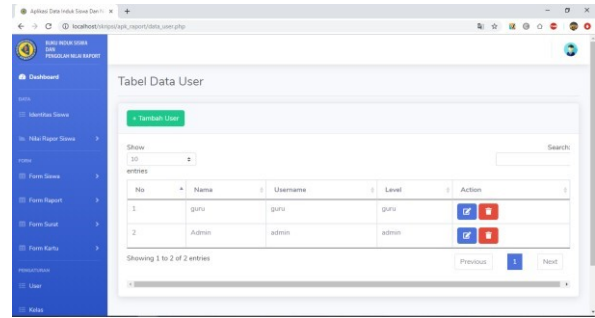


Figure 32. User page views

The class page is for the principal, on this page the principal can add new classes and can also do the update or delete process. Classes also contain homeroom data and the school year.

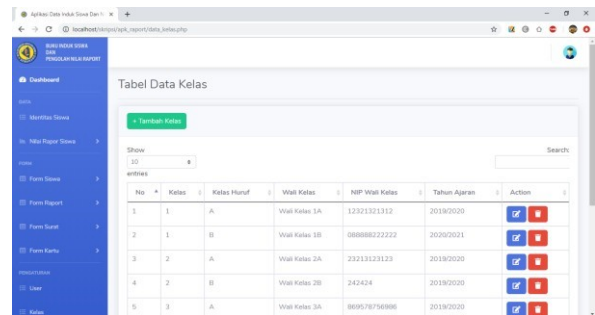


Figure 33. Class page views

The subject page is for the principal, on this page the principal can add new subjects and can also do the update or delete process.

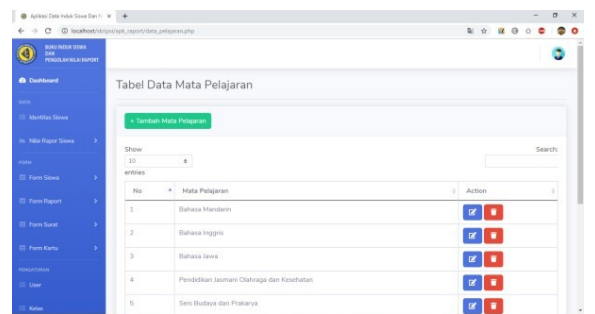


Figure 34. Subject page views

## Interview result

Interviews were conducted at Pangudi Luhur Don Bosko Elementary School with the school principal. The following are the results of the interview.

This application is very good and very needed for SD Pangudi Luhur Don Bosko, this application is very helpful in processing

student master books because it can accommodate student data, and manage data so that it can display the data needed for administrative purposes such as letters correspond.

With the import of data from excel archiving values becomes very easy, and can be done in seconds. The correspondence forms are very helpful because the features are made according to the request of the school, which is made similar to the application that the school has today, so that its use is very easy.

The best feature is the filing of report cards because the report card model K13 is very complex at this time with so many values especially with the long description-shaped value, so it is greatly helped by the data storage feature that is so long in this application.

## V. CONCLUSION

The design of the Student's Registration Book and Student's Report Card Processing Application for Pangudi Luhur Don Bosko Elementary School begins with designing the initial display framework, followed by designing the database, so that it knows what entities should be related and easy to develop.

Strategies so that the Student Registration Book Application and student report card processor for Pangudi Luhur Don Bosko elementary school are applications that can simplify student data processing and be a good student data archive and provides data import features through Excel files, so that the input process becomes easy and fast.

Factors affecting prospective users of the Student Registration Book Application and student report card processor for Pangudi Luhur Don Bosko elementary school to adopt this application are the report archive features, because the current K13 model report card is very complex with many grades, especially with old grades, values in the form of descriptions, so it is greatly helped by the large data storage feature in this application.

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