



Designing a School Information System and Admission of New Students at Gunadarma Middle School Based on a Website Using the Prototype Method

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Abstract

The school information system and registration of new students at Gunadarma Middle School is currently still manual and seems traditional. This causes the process to be slow, inefficient, and prone to errors. This requires a webdite-based information system that can help schools manage school information system and new student registration using the prototype method. The prototype method was chosen because it makes it possible to develop the system quickly and iteratively, so that a system can be obtained that suits the user's needs. The system designed will have several main features. Allows perspective students to register online by filling out the registration form and upload the required documents. The latter produces statistical reports on the number of students and selection results. This system is expected to increase efficiency and effectiveness in managing school information and new student registration.

Keywords: Information Systems, Schools, New Student Registration, Websites, Prototypes

1. Introduction

Information systems have developed quite quickly and have become quite an important part in various aspects of life, including in the field of education. The use of information systems itself functions to process various information managed by each company or organization, so that the resources needed are excessive and the time needed to complete the process is shorter [1]. The current information system proves the hypothesis about low student satisfaction with the current system, satisfaction with the information system and improving it to increase student satisfaction as users and customers [2]. So the school information system becomes a problem that arises in the process of conveying information, accepting new students, and managing school data because the methods used are still traditional and inefficient. So it can make it difficult to find data and information when needed [3].

Schools are educational institutions that have systems for teaching and learning activities, as well as various other activities that support the implementation of the teaching and learning process [4] A good school has the ability to keep up with technological developments and the ability to access and present information that can be accounted for in improving the quality of education, has a computerized information system so that it can provide accurate data and can help schools manage teaching and learning activities effectively and efficiently. A website-based school information system is one solution to increase the efficiency and effectiveness of school data management and the new student registration process.

Gunadarma Middle School as an institution that provides educational services also feels the impact of the rapid development of the world of information technology. This development has had a positive impact on secondary schools in improving the quality of education in the school environment [5]. However, the use of information technology is not yet effective at Gunadarma Middle School, such as still using manual systems in administrative activities and other academic activities, so an academic information system is needed that can organize and connect all aspects of the school.

So to overcome the problem above, the researcher put forward the idea of designing a website-based information system using the PHP language and carried out using the Prototype method. A prototype is a system used to demonstrate concepts, design experiments, and find more problems and possible solutions [6] By designing this website, it is hoped that schools can make it easier to convey information to students, or prospective students and also the community.

2. Research Method

The research method used in this research is the Prototype model, as a system design. The prototype model is a method that requires software developers to create a mockup in the form of an application model, very suitable for conditions where users cannot present clear information about their needs in accordance with their wishes [7]. The aim of this research is to build a web-based school information system with the aim of making it easier for schools to process school registration and school information.

2.1. Identify the problem

To complete this research the author carried out several research methods in collecting reference data including:

- a. Observation
Observation is a research process by looking at the situation and conditions of the research. This technique is very appropriate for classroom action research (PTK) which consists of observing the learning process, student attitudes and behavior, as well as interactions between students and teachers [8]. So the author used an observation method to review directly on a predetermined date.
- b. Interview
The author conducted direct interviews with the school to obtain the data needed for this research.
- c. Literature review
The author carries out research, namely looking for information that is relevant to the topic and problem that will be the object of research. The author got this information from lecture materials and journals on the internet.

2.2. System Development Model

- a. Software requirements analysis
In this stage, the author determines what tools are needed, such as programming languages and frameworks. In creating this website the author used the PHP programming language and Codeigniter as the framework.
- b. Design
After obtaining all the requirements needed to build the system, the next stage is creating the design. At this stage, the author makes a temporary design plan to get an overview of the system that will be created.
- c. Code Generation
At this stage, the author translates the design that has been created into a computer program or programming language and produces a software program that matches the design that has been created.
- d. Testing
When the development stage has been carried out, the next stage is testing the system that has been created. The goal is to detect whether an error occurred when the system was run.
- e. Support
At this stage, the author uses the Visual Studio Code application as a text editor to create website pages that can run on various operating system platforms. And to run the website page that has been created, you can use Google Chrome or a browser application that supports Javascript display.

3. Result And Discussion

The result of this research is the design of a new student registration information system in the form of a website at Gunadarma Middle School, where the design process begins by designing each page of the website. This research produced several pages such as admin login page, student login page, admin main menu page, student main page, student data input page, registration page, scheduling page and registration information.

3.1. Analyze software requirements

- a. Analysis Stages
System design is an activity that follows the activity analysis process, so that the design process is the core of every process. This process is at the core of any problem solving process, this chapter covers system design. below are the requirements (system requirements) for a web-based information system for the admission of new students at GUNADARMA SMP.
 1. Admin Page
 - A1. Admin can log in
 - A2. Admin can manage school profile
 - A3. Admin can manage registration information
 - A4. Admin can manage registration
 - A5. Admin can manage Registration Selection
 - A6. Admin can manage announcements
 - A7. Admin can manage receipt reports
 - A8. Admin can log out
 2. Prospective Student Page
 - B1. Prospective students can open students
 - B2. Prospective students can view the information
 - B3. Prospective students can register
 - B4. Prospective students can fill in their biodata

- B5. Prospective students can upload documents
- B6. Prospective students can see the announcement

b. Use Case Diagram

1. Use Case Diagram Admin Page

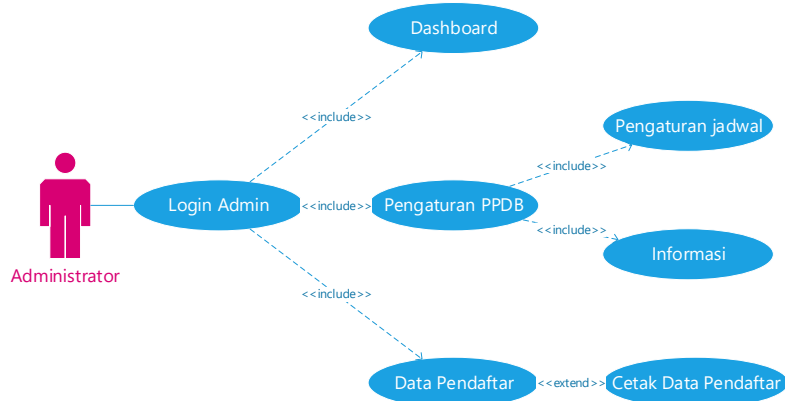


Fig. 1: Use Case admin

2. Use Case Diagram Student Page

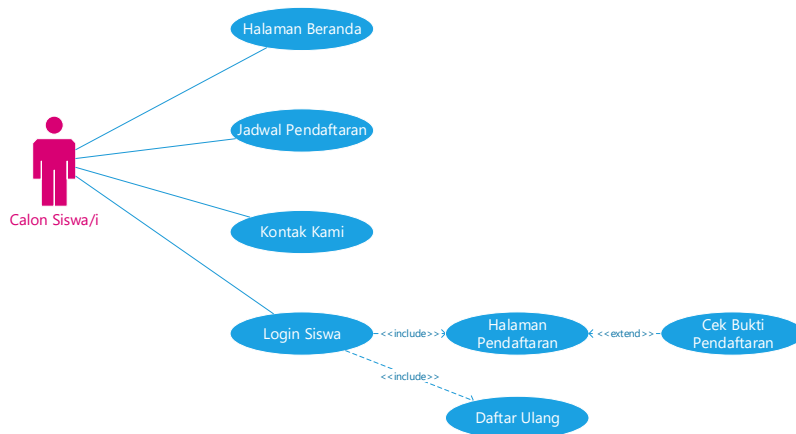


Fig. 2: Use Case User

c. Activity Diagrams

1. Activity Diagram for Prospective Student Registration

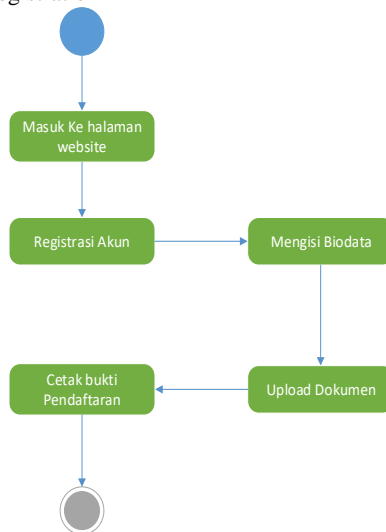


Fig. 3: Activity diagram user

2. Revenue Activity Diagram

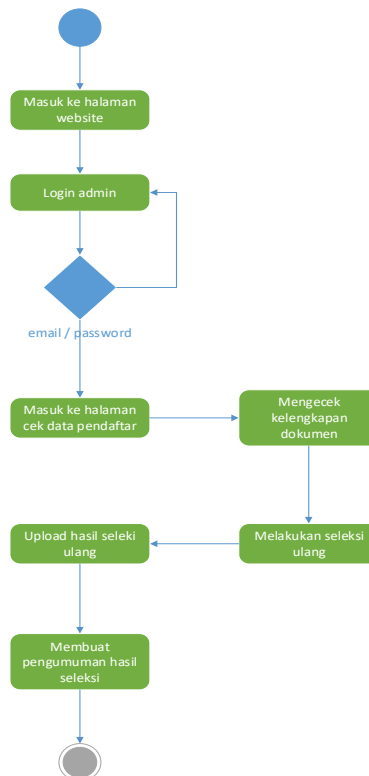


Fig. 4: Activity diagram user

3. Activity Diagram for Prospective Student Re-registration

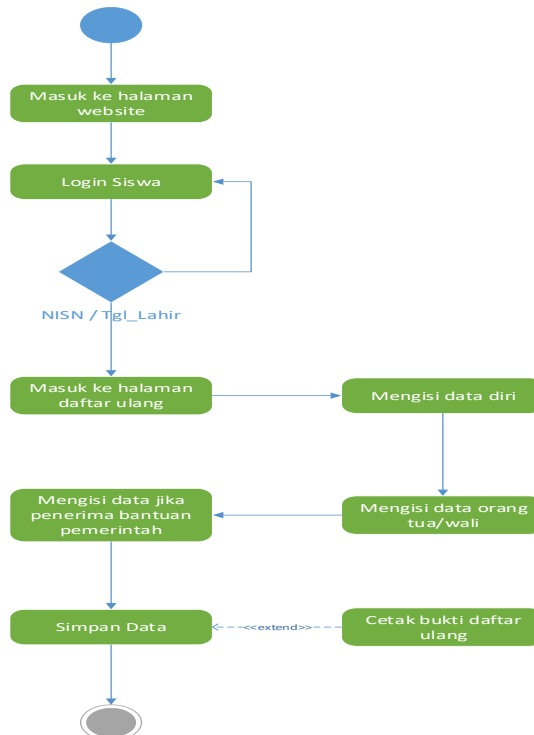


Fig. 5: Activity diagram user

3.2. System implementation

Visitor Views

1. Home Page

When you first open the Gunadarma Middle School new student registration website page, visitors will be shown the home page first. In this display, visitors will get information regarding the schedule and registration flow for Gunadarma Middle School.

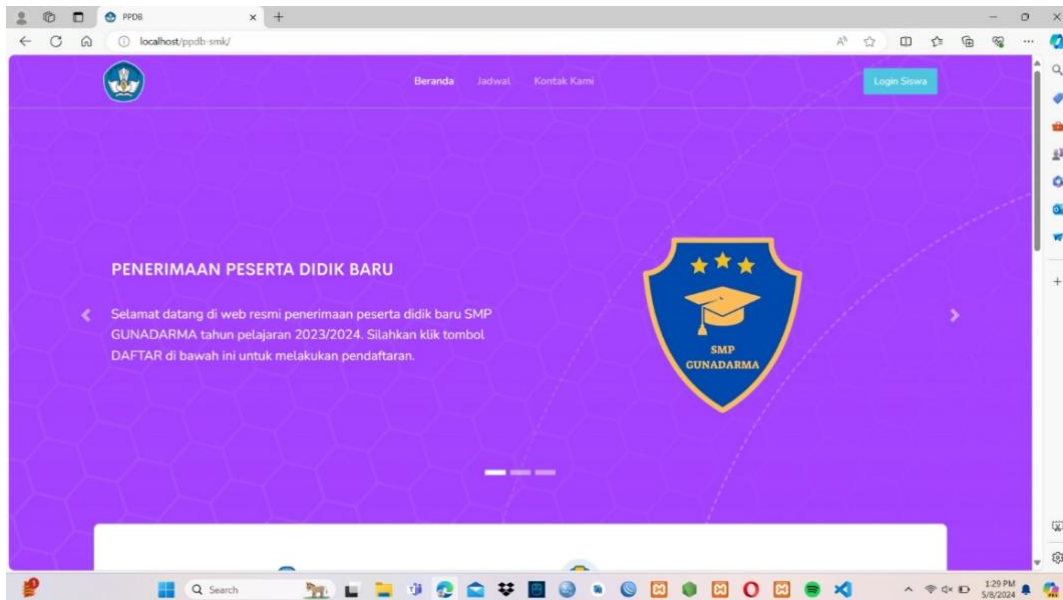


Fig. 6: Website page

2. Student Registration Page

On this page, students register an account to fill out the registration form.

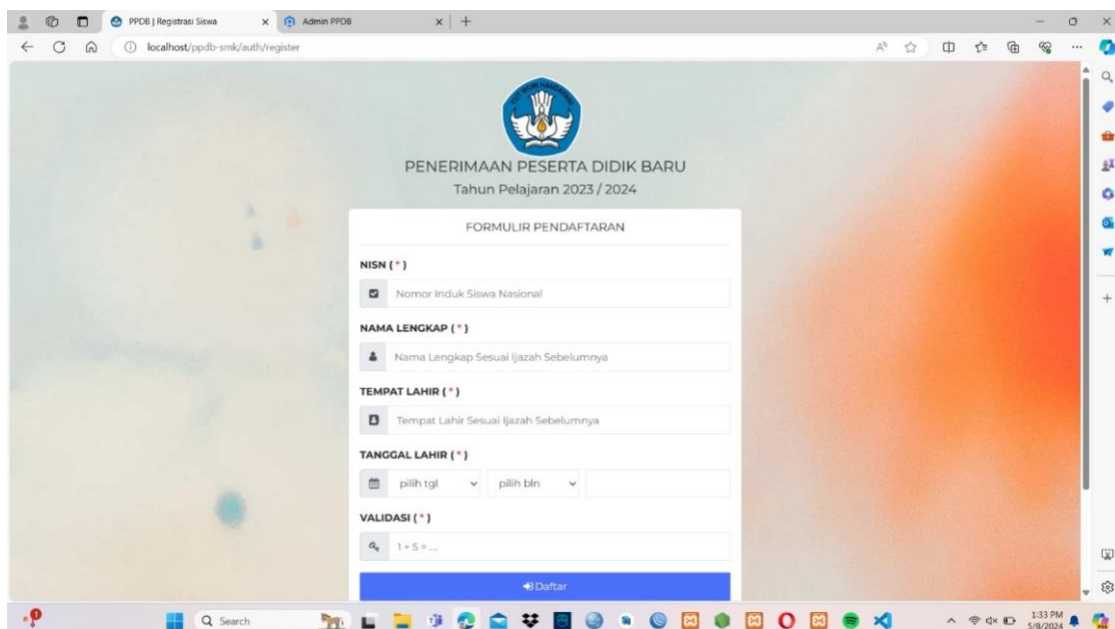


Fig. 7: Website page

3. Student Registration Page

This page is the page for the student registration form. After students have registered, students will enter this page and fill in biodata such as nisan, full name, gender, place of birth, date of birth, religion, complete address, and so on.

The screenshot shows a web browser window with the URL `localhost/ppdb-smk/siswa`. The page title is "Halaman Pendaftar". The form is titled "Kelengkapan Data Pendaftar" and contains the following fields:

- Nomor Pendaftaran: PPD-002
- NISN: 1234567892
- Nama Lengkap: AZKA
- Tempat Lahir: BOGOR
- Tanggal Lahir: 16 - 09 - 2000
- Jenis Kelamin: Laki-laki Perempuan
- Agama: Islam
- Penerima KIP: Ya Tidak
- Alamat: JL.H.M ASYHARI NO.22A
- RT / RW: 01 / 01
- Desa: CIBINONG

On the right side, there are three sections for uploading files:

- Foto Pendaftar:** Includes a "Foto Pendaftar" label, a "Choose File" button with the selected file `WIN_202211...1_46_Pro.jpg`, and a "Simpan" button.
- Bukti Kartu Keluarga:** Includes a "Bukti KK" label, a "Choose File" button with the selected file `WIN_202303...7_03_Pro.jpg`, and a "Simpan" button.
- Bukti Nilai Report:** Includes a "Bukti Report" label and a "Choose File" button.

Fig. 8: Website page

4. Proof of Registration page

After filling in the registration form and sending the files, prospective students can print proof of registration results.

The screenshot shows a web browser window with the URL `localhost/ppdb-smk/siswa/cetakbuktidaftar`. The page displays a printed document from the "PEMERINTAH PROVINSI JAWA BARAT DINAS PENDIDIKAN DAN KEBUDAYAAN SMP GUNADARMA". The document is titled "BUKTI PENDAFTARAN" and contains the following information:

Saya yang bertanda tangan di bawah ini:

- Nama : AZKA
- NISN : 1234567892
- Tempat, Tgl Lahir : BOGOR, 16 - 09 - 2000
- Jenis Kelamin : Laki - laki
- Agama : Islam
- Sekolah Asal : SMAN 1 CIBINONG
- Tahun Lulus : 2017
- Penerima KIP : Tidak
- Alamat : JL.H.M ASYHARI NO.22A RT 01 RW 01 Desa CIBINONG Kecamatan CIBINONG
- Pilihan Jurusan 1 : Teknik Informatika
- Pilihan Jurusan 2 : Teknik Bangunan

Nilai Raport

Semester 1	Semester 2	Semester 3
Bahasa Indonesia : 80	Bahasa Indonesia : 80	Bahasa Indonesia : 80
Matematika : 80	Matematika : 80	Matematika : 80
Bahasa Inggris : 80	Bahasa Inggris : 80	Bahasa Inggris : 80
IPA : 80	IPA : 80	IPA : 80
Semester 4	Semester 5	
Bahasa Indonesia : 80	Bahasa Indonesia : 80	
Matematika : 80	Matematika : 80	
Bahasa Inggris : 80	Bahasa Inggris : 80	
IPA : 80	IPA : 80	

Prestasi Non Akademik

Prestasi Tingkat : -

Fig. 9: Website page

5. Announcement Page

This page displays all information regarding the results of the registration selection that prospective students have carried out.

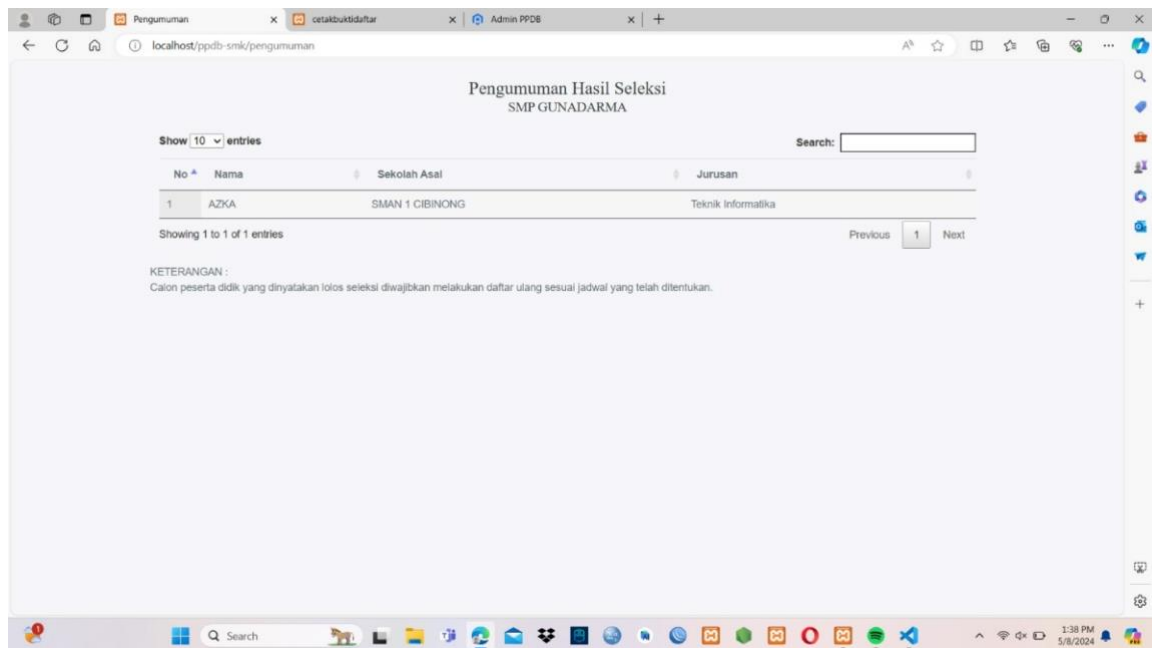


Fig. 10: Website page

6. Student Re-Registration Page

On the re-registration page for prospective students who have passed the selection, prospective students can fill in the re-registration form on this page.

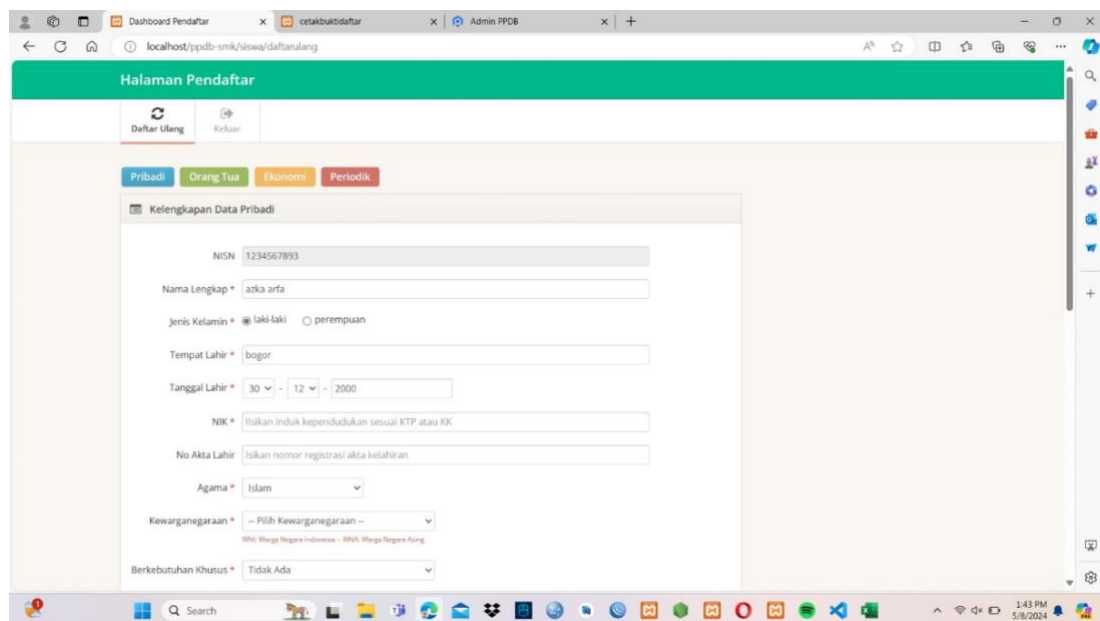


Fig. 11: Website page

4. Conclusion

The results of this design show success in creating a new student registration website and making it easier for Gunadarma Middle School to select prospective students. By using the prototype method, the information system development process can run in a structured and organized manner, and allows the development team to identify needs clearly, design the system appropriately, and test functionality thoroughly. The application of the prototype method in creating a new student registration website at Gunadarma Middle School has been successful and provided satisfactory results. Thus, this research provides positive results and contributions in the development of website-based information systems and shows how important it is to use appropriate methodology in the process of creating and developing software. With the results of this design, it is hoped that the website can become an effective means of improving the registration process for prospective new students at Gunadarma Middle School.

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