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## Web-Based Academic Information System Design Plan for Kindergarten

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### ABSTRACT

*Website* is one of the services that can be used by computer users connected to the *internet*. The *website* makes it easy for computer users to interact with other internet users and browse information on the *internet network*. Kindergarten is one of the institutions engaged in the field of education for early childhood. The purpose of making this thesis is to create an academic information *website* for parents of students in kindergarten. To create a kindergarten *website*, several methods are needed. In this thesis report the methods used include literature study, observation and interviews. This *website* was developed using the PHP programming language and *database* used is a *MySQL database*. In this thesis report, a system has been created that has facilities such as student data, teacher data, class data, child achievement data, child grade data, child report cards data, announcement data, and activities in kindergarten.

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## 1. INTRODUCTION

Learning in kindergarten is guided by the principle of learning while playing or playing while learning. Play is a demand and need for early childhood, so that learning activities are carried out with various kinds of games in a fun atmosphere and stimulate children to be actively involved.

In the learning process in early childhood, the role of parents is also very important in monitoring the development and activity of their children. Parents and teachers in kindergarten must maintain communication with each other so that information in schools can be channeled properly. However, there are some cases where there are parents who work and are not active in school so that the information in the school is not conveyed.

The purposes of this study are: 1) Creating an academic information system that can facilitate parents in getting information about their children's academic development in kindergarten. 2) Creating an academic information system that can make it easier for parents to get information about activities in kindergarten. The purpose of writing this article is to develop my knowledge on a website-based information system.

With the creation of an academic information system in kindergarten, it is hoped that it will be able to channel information in schools, it can be in the form of academic assessments of children, child development, children's activities at school, or activities for parents at school.

According to Darmawan and Kunkun (2013: 2), information is the result of data processing, but not all the results of the processing can be information. Meanwhile, according to Subhan (2012:17), information is a collection of data that is processed into a form that is more useful and more meaningful for those who receive it. Without any information, a system will not run smoothly and may eventually die. In other words,

the source of information is data. According to Sibero (2011:10), " the *internet* ( *interconnected network*) is a computer network that connects *global networks*, the *internet* can also be called a very wide network ". The *Internet* is a public computer system, which is connected globally and uses TCP/IP as a *packet switching communication protocol* . The beginning of the internet starting from the ARPANET project, which is a communications network project for the United States military. The ARPANET network is only intended for military personnel and researchers who build the network.

According to Dukom (2011: 5) , " *website* is a term for a group of *web pages* (*webpages*) which are generally part of a *domain name* on the WWW ( *World Wide Web*) on the *internet* ." Both *dynamic* and *static*. It is *static* if the information content of *the website* remains (unchanged) while it is *dynamic* if the information content of *the website* is always changing and active two-way communication occurs.

PHP stands for " *Hypertext Preprocessor*". According to Master.com (2012:8) PHP is an *open source* application or an application that has a GPL ( *General Public License* ) *license* . used as a *server side scripting language in web* development embedded in HTML documents . At first PHP was short for *Personal Home Page* ( *personal site* ). and PHP was created by Rasmus Lerdorf in 1995, and at that time PHP was still called FI ( *Form Interpreted* ), which was in the form of a set of *scripts* used to process *form data* from the *web*.

Understanding CSS according to Madcoms (2013:163) is a collection of codes for formatting, which controls the appearance of content in a *web page* . The use of CSS *styles* in the format of a page is placed separately from the appearance of the page. The content of the HTML code page is located in the HTML file, while the CSS code can be a display code that is in another file or in one part of the HTML code, and is usually placed in the head section or the <head> tag. *Style Sheets* is a very important *feature* in creating *Dynamic HTML*.

*web server* according to Madcoms (2013: 311) is a computer program that has the responsibility or task of receiving HTTP requests from *client computers*, known as *web browsers*, and serving them by providing HTTP responses in the form of data content, usually in the form of *web pages* consisting of HTML documents, and related objects such as images. MySQL is very fast, free, easy to configure, easy to learn and available *source code* . Those are some of the main advantages of MySQL over existing commercial RDMS. MySQL uses SQL (*Structured Query Language*) which is a global standard in database management.

## 2. RESEARCH METHOD

### 2.1. Data collection technique

- a. Interview, Interview is a research method by doing a question and answer session directly with the object of research. In conducting this interview method, the authors conducted interviews with the principal and several teachers in the kindergarten.
- b. Observation, the observation method is a way of collecting data directly by observing the object of research in kindergarten. The process observed is the child's learning process, child assessment, and activities at school.
- c. Literature Studies, Writing this thesis is supported by several journals, books containing theories related to the problems discussed as well as lecture notes and other supports. In this method, the author gets a lot of input on how to design or develop an information system according to the experts.

### 2.2. System Development Model

Analyzing the existing problems of the research object, then developing a logical process to solve the problem in the form of a programming algorithm. Activities carried out in the information system development stage include:

- a. Analysis of Software Requirements ( *Software* ), Admin can *login* and manage student data, school activities, and manage children's grades. *Users* can see children's academic results, school announcements, see activities at school.
- b. Design, *Website design* using *Adobe Dreamweaver CS6* to facilitate the manufacturing process using *Cascading Style Sheet* (CSS) as well as UML and ERD.
- c. *Code Generation*, the programming language that will be used includes structured programming, namely PHP and Mysql.

- d. *Testing*, This stage is the stage of testing the system so that it can be known whether the system is running as expected in order to see deficiencies before the system is ready to operate with *Blackbox testing* .
- e. *Support*, Provide whatever is needed to support the system so that the system can run better and anticipate unexpected things, both *software* and *hardware* and *hosting* .

### 3. RESULTS AND DISCUSSIONS

#### 3.1. System Business Process

Based on the observations that have been made in kindergarten, the authors observe and analyze the process of academic assessment and the development of students in kindergarten including:

1. At the beginning of the semester, the teacher will provide a lesson plan for the next semester in the form of a syllabus to parents.
2. Every day students will carry out learning activities according to the lesson plan and the teacher will provide an assessment of the development of students every day which will be included in the student achievement card.
3. The exam is held every semester where students will be given questions related to things that students have learned for one semester.
4. The final result will be given in the form of student report cards to parents.

#### 3.2. System and Program Design

The following is a requirement specification ( *system requirement*) of a *website* -based academic information system .

Administrator page:

- A1. Managing student data
- A2. Managing teacher data
- A3. Managing class data
- A4. Managing child achievement data
- A5. Manage iqro achievement data
- A6. Manage test score data
- A7. Managing report data
- A8. Manage announcement data
- A9. Managing activity data

Teacher Page:

- B1. View student data
- B2. View class data
- B3. Managing child achievement data
- B4. Manage iqro achievement data
- B5. Manage test score data
- B6. Managing report data
- B7. Manage announcements
- B8. Manage activities

Parent Page:

- C1. View the child's bio
- C2. Viewing the child's achievement card
- C3. View iqro achievement card
- C4. View test scores
- C5. View Reports
- C6. View school activities
- C7. View announcements

**Table 1. Description of Administrator Use Case Diagram**

<b>Use Case Name</b>	Administrator Academic Sisfo
<b>Requirements</b>	A1-A9
<b>Goal</b>	Administrator manages academic information system
<b>Pre-Conditions</b>	The administrator has <i>logged in</i>
<b>Post-Conditions</b>	Administrators add, change, and delete data
<b>Filed End Condition</b>	Administrator failed to save, modify and delete
<b>Primary Actors</b>	Administrator
<b>Play Flow</b>	<ol style="list-style-type: none"> <li>1. Administrators manage student data</li> <li>2. Administrator manages teacher data</li> <li>3. Administrator manages class data</li> <li>4. Administrator manages child achievement data</li> <li>5. Administrator manages iqro achievement data</li> <li>6. Administrator manages test score data</li> <li>7. Administrators manage report data</li> <li>8. Administrator manages announcement data</li> <li>9. Administrator manages activity data</li> </ol>

**Table 2. Description of Teacher's Use Case Diagrams**

<b>Use Case Name</b>	Teacher Academic Sisfo
<b>Requirements</b>	B1-B8
<b>Goal</b>	Teachers manage academic information systems
<b>Pre-Conditions</b>	Teacher has <i>logged in</i>
<b>Post-Conditions</b>	The teacher adds, changes, and deletes data
<b>Filed End Condition</b>	Master failed to save, modify and delete
<b>Primary Actors</b>	Teacher
<b>Play Flow</b>	<ol style="list-style-type: none"> <li>1. The teacher sees the students' data</li> <li>2. Teacher looks at class data</li> <li>3. Teachers manage children's achievement data</li> <li>4. Teachers manage iqro achievement data</li> <li>5. The teacher manages the test score data</li> <li>6. Teacher manages report card data</li> <li>7. Teacher manages announcement data</li> <li>8. Teachers manage activity data</li> </ol>

**Table 3. Parental Use Case Diagram Description**

<b>Use Case Name</b>	Parents Academic Sisfo
<b>Requirements</b>	C1-C7
<b>Goal</b>	Parents looking at academic information system
<b>Pre-Conditions</b>	Parents have <i>logged in</i>
<b>Post-Conditions</b>	Parents know the information about the child's development
<b>Filed End Condition</b>	Parents failed to login to the academic information system
<b>Primary Actors</b>	Parent
<b>Play Flow</b>	<ol style="list-style-type: none"> <li>1. Parents view child's bio</li> <li>2. Parents looking at child's achievement card</li> <li>3. Old man looking at iqro achievement card</li> <li>4. Parents see test scores</li> <li>5. Parents looking at report cards</li> <li>6. Parents watching children's activities</li> <li>7. Parents see the announcement</li> </ol>

## 4. CONCLUSION

### 4.1. Conclusion

After the author pays attention to the descriptions of the previous chapters, it can be concluded that:

1. By creating an *online academic information system*, it can make it easier for parents to get information about their child's educational development in kindergarten.
2. By creating an *online academic information system* can make it easier for parents to know the activities that take place in kindergarten.

### 4.2. Suggestion

The author hopes that further research will be able to improve the results obtained in this study, namely:

1. It is hoped that in the future the system that has been created at this time can be redeveloped so that it can help the kindergarten in the academic field of students, such as providing material on the website so that parents can download their children's subject matter.
2. It is hoped that in the future the system can be further developed from the administrative side of students, such as the status menu for tuition payments, registration fees, and others.

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