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(ICVEE) 2015

Edited by ICVEE Team

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OPENING SPEECH FROM RECTOR OF UNESA

Assalamu Alaikum Wr. Wb.,

Good morning Ladies and Gentlemen, allow me in this opportunity to open this conference by first praying our grateful and praise to Almighty God for all His blessings, grace, and mercies that have made us possible to gather here in this room in excellent condition and health.

Dear distinguished guests and participants of the **The International Conference on Vocational Education and Electrical Engineering (ICVEE) 2015 with the theme** "Overcoming Challenge towards Asean Economic Community (AEC) 2015 in Profesional Qualification on Vocational Education and Electrical Engineering". Universitas Negeri Surabaya (Unesa) is very pleased to host this conference in Surabaya.

I believe the conference will provide an opportunity for participants to disseminate new knowledge specially in Vocational Education, Electrical Engineering, and Informatics major, and share recent experiences and knowledge as well as new practices, technologies, and new concept.

My sincere appreciation also goes to all Keynote Speakers who have volunteered and spent your tight schedule to contribute to this special event in Surabaya. Your contribution to this conference and specially to Indonesia is highly appreciated.

Greatest thanks are due to all our Organizing Committee members for their dedication and continuous efforts and hard work in preparing as well as organizing this conference with the supports from Unesa lecturers and students. To our main and supporting sponsors and donors, our most gratitude and thanks for their generous contributions to make this conference possible.

Greatest thanks also to our participants, especially those who have contributed technical papers, thank you for your participation in this conference. I am convinced that this conference will be inspiring, and wish you all a successful and memorable time.

I would like to sincerely congratulate all of you to have fruitful conference and discussions and enjoy meeting new friends and colleagues and to take advantages to support your profession during this conference. I wish you all have a truly sweet memory and enjoyable stay in Surabaya.

Wassalamu Alaikum Wr. Wb.,

Prof. Dr. Warsono, M.S.
Rector of UNESA

ADDRESSING MESSAGE FROM DEAN OF FACULTY OF ENGINEERING UNESA

Honorable Rector of Universitas Negeri Surabaya, Prof. Dr. Warsono.
Honorable Speakers and Participants,
Distinguished Delegates, Guests, Ladies, and Gentlemen.
Assalamu Alaikum Wr. Wb.,

I am sincerely glad to welcome all you here, especially as I see very many familiar colleagues, friends, and our patners.

Welcome to our campus!

First of all, I would like to praise God for His blessings and mercies which allow all of us to be here today in this building in good health. I wish to express our deepest appreciation to those who have come from far away, many of them having been involved in commencing exactly what we have gathered here for.

It would be our great pleasure to welcome all of you, experts, engineers, and professional researchers from all over the world. **The International Conference on Vocational Education and Electrical Engineering (ICVEE) 2015** is a scientific forum where all of us could meet colleagues and friends of broad areas, discuss and disseminate research findings and discoveries as well as to develop knowledge, technology, arts, and sustainable research networks, particularly in vocational education, electrical engineering, and informatics. This year conference raises a very important theme on "Overcoming Challenge towards Asean Economic Community (AEC) 2015 in Profesional Qualification on Vocational Education and Electrical Engineering". Therefore, it is a great pleasure and beneficial for all of us here today if we are able to take this advantage to build strong sustainable networks among researchers in order to develop knowledge, technology through recent research and innovation.

By hosting this conference, Faculty of Engineering Unesa is not only gaining the advancement of science and technology from all the findings and discoveries delivered during the conference, but also fruitful to encourage and enhance the arts and cultural values that would further dignify our nation and country among other worldwide.

Finally, I would like to convey our sincere gratitude to all participants, distinguished guests, and speakers that make this conference a great success. Thank you very much for being here. On behalf Faculty of Engineering Unesa, I thank you very much for your hard and untiring efforts. I wish that all of you may put all your continuous plants into undisturbed actions. And should push come to shove, that all your core processes may be continued seamlessly elsewhere. Today's program offers many various approaches to the issue. I wish you a very successful, productive, and inspiring conference!

The conference is an annual event which is held near the end of the year. We do hope that we could welcome you again next year in the 2nd ICVEE 2016, which certainly offers the most recent topics as well as advance science and technology in various areas.
Thank you most cordially for your attention.
Wassalamu Alaikum Wr. Wb.

Dean of Faculty of Engineering
Universitas Negeri Surabaya

Prof. Ekohariadi, M.Pd.

WELCOME SPEECH OF GENERAL CHAIRMAN OF ICVEE 2015

Dear Distinguished Delegates and Guests,

First, let us pray gratitude to the presence of Almighty God, for blessing and His permission, so "The 1st International Conference on Vocational Education and Electrical Engineering (ICVEE) 2015" can be done well. Secondly, let us convey my warm welcome and high appreciation for the presence and the willingness of key speakers who came from Taiwan, Brunei, Malaysia, and Indonesia as well as other speakers, at an international seminar held on this day.

Ladies and Gentlemen,

Science and technology continue to evolve. Discovery after discovery continues to be obtained so as to make the world continues to change and evolve into a better direction. Tokyo Motor Show (TMS) in 2015 is one evidence of some of the latest findings. TMS 2015 exhibited a number of recent developments in the automotive field. Nissan Corp showing a concept car without a driver (Intelligent driving system = IDS). This concept makes Nissan IDS seem futuristic. The car has a manual and automatic mode. Automatic mode is used when the passenger wants to chat along the way. In that mode, the steering wheel will automatically folded down, replaced the screen so that someone can open an email, or talking through a "video call". IDS will become a mainstay of the new Nissan to be the pioneer in the world automotive industry. Next year there are at least a driver replacement system for toll roads in Japan, and is targeted by 2020, IDS cars can pave the roads of Japan.

Mitsubishi Motors Corporation introduced the concept car "X electric crossover" is the latest electric car system. This car took part of the Outlander PHEV which includes models that demonstrate the framework of the technical features of electric vehicles and plug-in system twin motors 4 WD, so it is easy to drive. This car can monitor the situation around the vehicle, can control the speed, including a driver can use a smartphone to give instructions so that the car can park itself. To 44 other manufacturers, competing to develop fuel cell cars. Fuel cell car that's environmentally friendly hydrogen fuel. The chemical reaction between hydrogen stored in the fuel cell stack and oxygen that exist in nature, generating electrical energy stored in batteries. Electricity from the battery rotating electric motor to drive the car. Under conditions of full hydrogen, the car can travel a distance of 650 km, making the manufacturer mentions that fuel cell cars will become the flagship car of the future.

Hopefully some examples of the development of science and technology as described above, inspired on "The 1st International Conference on Vocational Education and Electrical Engineering (ICVEE) 2015" held on November 18, 2015 on the campus of the State University of Surabaya.

Ladies and Gentlemen,

This seminar can be accomplished, for the help of various parties. On this occasion, let us express our appreciation and gratitude to the key note speaker, the speakers, both from within and outside the country, so this seminar is warm and lively. To all those who have helped so that this international seminar to run smoothly in accordance with the intent and purpose, we extend our appreciation and gratitude. Not to forget we convey an apology, if in the organization of this seminar there are many shortcomings, and it all happened, solely because of the limitations that exist in us. Thus, thank you for all the attention, billahi taufik walhidayah, assalamu allaikum warahmatullahi wabarokhatuh.

Chairman,

Prof. Dr. H. Supari Muslims, Drs. MPd
General Chairman of ICVEE 2015

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Research and Development of Student Information System for Kindergarten In Klojen Malang

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***Abstract* - In the world of education, use of information technology can be use Academic Information Systems, e-Learning System, Web-based Education at High School level, School of Information Systems for middle school and Student Information System for pre-primary school level or elementary school. Use of Student Information Systems, at the level of ECD (Early Childhood Education) needs to be put into use in order to improve services to stakeholders.**

The process of recording and administration of the kindergarten ABA 17 has been recorded using Microsoft Office. For kindergarten ABA 5 are still using document on paper-based records made hard to organized, meanwhile there's a limited number of employees for Administration. This can cause a decrease in the value of the trust the parents of students who will have massive effects associated stakeholder satisfaction in this case the parents to the school administrative services.

The resulting output of this research is a software based of web for Student Information System. This information system will be used to improve academic services to students including the parents. Improved academic services to students be the main goal of this Student Information System, alsoused to improve the competitiveness of schools while number of students increasing from year to year.

I. INTRODUCTION

The development and advancement of information technology goes very fast. Along with the development of information technology and the delivery of data storage is getting cheaper and better quality for used as individuals or institutions and for thats reason governments also involved to make efforts to take advantage of those technology.

The development of information and communication technology today has implications in education worlds. In the world of education, the advantage of information technology can be used as Academic Information Systems, e-Learning System, Web-based Education at High School level, and Student Information System.

Kindergarten ABA 17 so far has been trying to build a student information system, but because of the lack of knowledge about information systems. Revenues from donations from students parent is not enough to support school operations, even more to bulid a student information system, it is in conflict with the commitment of schools that want to provide good service for students and parents. Similar conditions also experienced in Kindergarten ABA 5 only in this kindergarten still trying to improve school quality and service so that school accreditation can raise from grade B into A, one of their effortsto raisethat grade is by make improvement of student administration.

II. SYSTEM DEVELOPMENT LIFE CYCLE

A. Waterfall

Waterfall approach was first SDLC Model to be used widely in Software Engineering to ensure success of the project. In "The Waterfall" approach, the whole process of software development is divided into separate phases[1]. In Waterfall model, typically, the outcome of one phase acts as the input for the next phase sequentially.

To develop this Academic Information System is using waterfall method which consists of 5 stages, that's 5 stage:

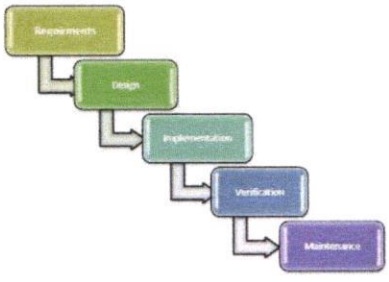

Figure 1. Waterfall Method

1. Requirement Gathering and analysis: All possible requirements of the system to be developed are captured in this phase and documented in a requirement specification doc.

2. System Design: The requirement specifications from first phase are

studied in this phase and system design is prepared. System Design helps in specifying hardware and system requirements and also helps in defining overall system architecture.

3. Implementation: With inputs from system design, the system is first developed in small programs called units, which are integrated in the next phase. Each unit is developed and tested for its functionality which is referred to as Unit Testing.

4. Integration and Testing: All the units developed in the implementation phase are integrated into a system after testing of each unit. Post integration the entire system is tested for any faults and failures.

5. Deployment of system: Once the functional and non - functional testing is done, the product is deployed in the customer environment or released into the market.

6. Maintenance: There are some issues which come up in the client environment. To fix those issues patches are released. Also to enhance the product some better versions are released. Maintenance is done to deliver these changes in the customer environment.

B. PHP

PHP is a programming language for building dynamic, interactive Web sites. As a general rule, PHP
programs run on a Web server, and serve Web pages to visitors on request. One of the key features of PHP is that you can embed PHP code within HTML Web pages, making it very easy for you to create dynamic content quickly [2]. This programing language is used to build this student information system.

PHP is used to build this system cause this programing language can make a server - side scripting language, which means that PHP scripts, or programs, usually run on a Web server. PHP is also can used as an interpreted language — a PHP script is processed by the PHP engine each time it' s run so it can easy to modified and maintenance.

This process below can describe hot PHP works:

1. A visitor requests a Web page by clicking a link, or typing the page's URL into the browser' s address bar. The visitor might also send data to the Web server at the same time, either using a form embedded in a Web page, or via AJAX (Asynchronous JavaScript And XML).
2. The Web server recognizes that the requested URL is a PHP script, and instructs the PHP engine to process and run the script.
3. The script runs, and when it ' s finished it usually sends an HTML page to the Web browser, which the visitor then sees on their screen.

C. SQL

SQL is the de facto standard language used to manipulate and retrieve data from these relational databases. SQL enables a programmer or databaseadministrator to do the following[3]:

1. Modify a database's structure
2. Change system security settings
3. Add user permissions on databases or tables
4. Query a database for information
5. Update the contents of a database

This language will combine with PHP to process data that already stored at database. When user need information from web, this language will process it by communicating with database. Administrator who already store information on the database can be accessed by user of student information system.

To use this language there's a tool that can used one of the is MYSQL. MYSQL is database engine that's usually used by PHP Programmer, combination of this two tools can make a good student information system.

D. DFD

Data flow diagrams (DFDs) reveal relationships among and between the various components in a program or system. DFDs are an important technique for modeling a system's high-level detail by showing how input data is transformed to output results through a sequence of functional transformations. DFDs consist of four major components: entities, processes, data stores, and data flows[4].

This method is used to design of system, it will describe how data flows through systems (and how that data is transformed in the process). Systems analysts prefer working with DFDs, particularly when
they require a clear understanding of the boundary between existing systems and postulated systems. DFDs represent the following:

1. External devices sending and receiving data
2. Processes that change that data
3. Data flows themselves
4. Data storage locations

III. ANALYSIS AND REQUIRMENT

A. Problem Analysis

Identifying the problem is the first step in doing the systems analysis phase. In reality that kindergarten ABA 17 and ABA 5 is still do theirs services manually but there's some work aided by computers. This are some of their's service that's still manually used :

1. The process that's Teachers do to make the report cards very inconvenient because the process still manually.
2. Registration of personal data , teachers, and employees who are still manually so that if someone wants to find data takes a long time and less tidy.
3. Recording the average growth of students toddler needs specific data to enhance the ability of students in accordance with their potential.

The role of teachers in kindergartens generally can not be separated from the role of administrative support school operations. The availability of student data to support administration work in those kindergarten.

As a top manager, the principal need of tools that can support and increase administrative performance. The existing data still can not be processed in such a way to generate useful information for decision-making, making it difficult for schools to design needs of students in each school year.

B. Design

At this stage begin to be made DFD to describe the activity data flowing from one entity to another. The goal of this process is to obtain a detailed overview of the functions - anything that will function in the school information system.

At this stage is also illustrated in detail the stakeholders involved in the process of managing data in the system simultaneously process input and output data of each - each stakeholder.

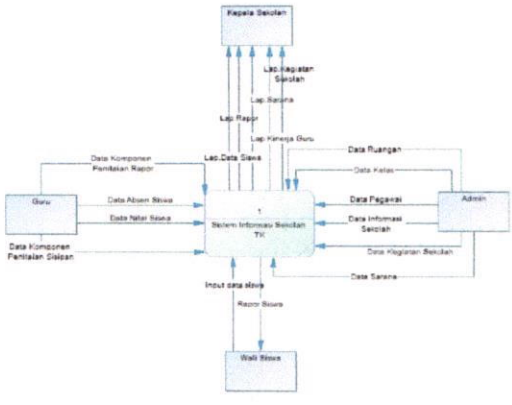

Figure 2. Data Flow Diagram

In the design processalsocovers the processfor the design ofthe ERD(Entity Relationship Diagram) is a model ofthe designdata togivean overall pictureof thedatabaseframeworkwhichwill consistoftables-tables thatare interrelated. So thatin the process ofdatabase developmentfor this systemwould beeasier todeterminethe relationshipbetweenone table withthe other.

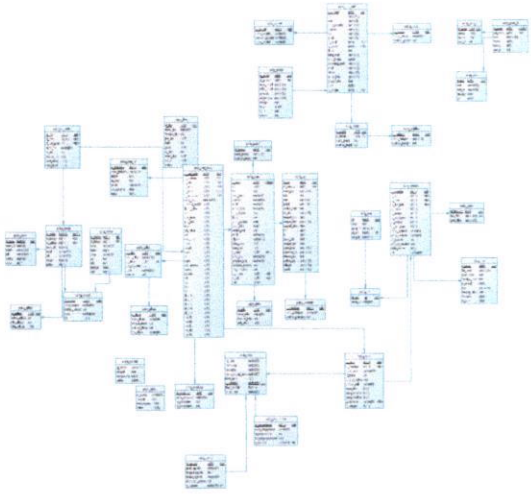

Figure 3. Entity Relationship Diagram

C. Functional Requirment

In the Student Information System there are several levels of access to access these applications include employees, parents and administrators. Facilities owned by the level of access each of which can be explained as follows:

- ✓ Teachers have access to incorporate measurement data and assessment and observation of students' abilities. These data will be input for depictions of child development and the students' report cards online.
- ✓ Employees have access to the facilities of input data for teachers, employees and students.
- ✓ Parents have access to online report cards and see their children's growth charts.
- ✓ The admin has the highest access level because it can control and be responsible for all the facilities and features in this student information system.

Student Information System software Kindergarten has features (facilities) as follows:

- ✓ Data recording of students, teachers and employees.
- ✓ Processing of student data in the form of temporary value and its products at the end of the year report cards while the original form of report cards (the actual report cards includes).
- ✓ Monitoring and controlling the development and growth of students

IV. IMPLEMETATION

A. Prototyping

After the design phase of the database already implemented the next stage of this developing activity is the implementation phase into the program, described in the previous stage that application has developed with some framework to facilitate the development process. Implemetasi application "Web-Based Student Information System" will include doing a data input from students who are still active and also alumni of the school. Proototype of these applications can be seen in Figure 4.

Figure 4. The Prototype Application

After the application prototype phase to the stakeholders consulted in this case the principal, to see whether the functional requirements of the application has met the expectations of the school. after the number of times do brainstorming with school principals gained some input for the improvement of the application so that the application changes as in Figure 5.

Figure 5. Application after some repair

The academic information system for kindergarten also include admin page which can be primarily used by the user with the right level: superadmin, administrators, teachers and principals.

- ✓ User SuperAdmin: have every right to access the menu in the admin page.
- ✓ admin user: has access to administrative processes, among others, the input of employee data, school information and components in the report.
- ✓ User Teacher: have of action to absent students, fill out daily activities and fill out report cards of students in accordance with the class they teach.
- ✓ User Principal: has access to monitor student progress reports, report cards on the performance of teachers and all students in the school.

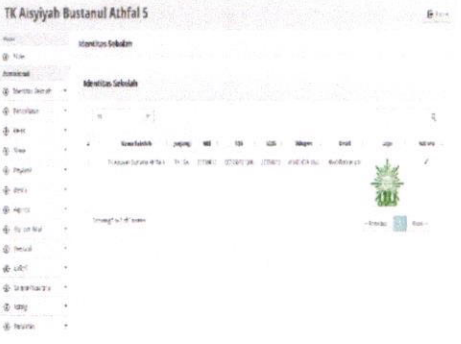

Figure 6. Administrator Menu

B. Testing

This stagebefore theStudentInformation Systemused generallyfirstconductedtestingprocessesboth internallyand externallyinvolvingthe schoolswith a limited number. This processwillbe able to obtaininputfrom theuserof what iscontainederrors andimprovement ofprogramfeatures.

Theres some point that tested :

1. Testing is the process of executing a program with the intent of finding errors.
2. The successful testing is a test that has a high probability to find and reveal all the errors that have not been discovered or previously suspected.

IV. CONCLUSION

In the test phase is student information system for kindergarten ABA and ABA 5 17 Malang changes for improvement, the school provide input include:

1. Menu for the students placed on the main page of the information system.
2. The component values can be changed according to the current curriculum.

The changes are based on feedback from school to accommodate the needs of schools in general. So that the pilot phase is a lot of improvement silakukan by the development team.

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