

# Design Based Assessment Data Processing System Web Using Framework Codeigniter

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## Abstract:

*Information System is a basic requirement for each company or government agency. Information systems become an important component in a system that is implemented. Among them are the Designing of Web-Based Assessment Data Processing Information Systems Using the Codeigniter Framework Case Study of State Vocational School 1 Pandeglang is still semi-computerized which requires a long time. The purpose of this study is to analyze the system that is running at SMK Negeri 1 Pandeglang. Where the development of information technology is what drives the School to make changes in the processing of student assessment data considering the number of students is not small. errors often occur at the time of data collection so that it slows down the employee's work process. To overcome this problem a system is needed that can facilitate the processing of student assessment data quickly and accurately. In this study the researchers used data collection methods such as interviews, literature studies, and elicitation. The method of analysis uses SWOT analysis methods (Strengths, Weaknesses, Opportunities, Thereats) followed by programming using PHP and MYSQL. With this system, employees can do or make the appraisal process quickly and also for those who give approval quickly. With this research the process of submitting student evaluations becomes more time efficient and employees can work more comfortably.*

**Keywords —information system, code igniter, assessment, processing data.**

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## I. INTRODUCTION

Information technology can produce information that can produce information that can be used by users in various agencies, companies, or institutions, both private and government. Information technology is an example of a rapidly developing technology product that can help human process data and present quality information. Almost all companies and even educational institutions in Indonesia that are developing or who have advanced use computer technology and information systems as a means to facilitate a job and can be

achieved with what is expected. For this reason, an effective and efficient assessment data processing is needed.

Pandeglang State Vocational School 1 is an institution that requires an information technology development. Where is the development of information technology that drives SMKN1 Pandeglang to make changes in data processing. Errors often occur during data collection thus slowing down the work process of employees.

In the value data processing system at SMKN 1 Pandeglang still uses Microsoft Word and Microsoft Excel in other words not yet

computerized. So that errors and inaccuracies still occur in the process of inputting student grades. The author basically aims to make the system run well. Therefore, one way to solve this problem is to design a new student data processing web system as a comparison and complement to the old system.

## **II. RESEARCH METHOD**

The prototyping method is often used in the real world. Because this method as a whole will refer to user satisfaction. It can be said that this method is a waterfall method that is done repeatedly.

The Prototype method is a new paradigm in software development methods where this method is not just evolution in the world of software development, but also revolutionizes the old software development method which is a sequential system commonly known as the SDLC or waterfall development model. The prototyping methodology is shown in Figure 2. The steps in Figure 2 of the prototyping methodology, namely [1]:

- a. Planning and communication in advance between the customer and the software development team regarding the specifications of the desired requirements.
- b. Planning and modeling will be done quickly in the form of a quick design (quick design) and then will start the construction of prototype making.
- c. The prototype will then be submitted to the stakeholders for further evaluation before being submitted to the software makers.
- d. Making software in accordance with the prototype that has been evaluated which will then be submitted to the customer.
- e. If it does not meet the needs of the customer, it will return to the initial process until the needs of the customer have been met.

### **A. Method Analysis**

In this analysis method, the method to be used is SWOT analysis (Strengths, Weakness, Opportunities, Threats) as an effort to help identify external (internal) and internal (internal) factors of the school, in an effort to prepare a mature plan, so

that it can help the formation of accurate information delivery [2].

### **B. Code Igniter Framework**

In Hustinawati's research, Albert KurniaHimawan and Latifah In Hustinawati's research, Albert KurniaHimawan and Latifah [3] entitled "Performance Analysis Framework CodeIgniter and CakePHP in Website Creation" in the International Journal of Computer Applications Vol. 94 No. 20 Said CodeIgniter is a web application framework that is open source that is used to build dynamic PHP applications. The ultimate goal is to help develop CodeIgniter developers to work on applications faster than writing all code from scratch.

CodeIgniter's work structure starts from the browser that will interact via the controller. Then the controller will accept and reply to all requests from the browser. For data, the controller will ask for a model and for the UI or template controller it will ask to see. When the browser requests a web page, the router will find the controller that should handle the request. Later the controller will be used to access data and display models to display data. MVC is used to separate data access and business logic from data presentation and user interaction. Separation is done so that any changes in presentation logic or business logic do not affect each other very complex. The MVC separation solution is expected to increase application flexibility and reusability. MVC architecture separates applications into three parts, namely Model, View and Controller [1]:

1. Model: Database representation, including table design of relationships that exist between tables. The main function of this model is to handle data, retrieve data from a database, enter data into a database, manipulate data through data validation.
2. View: View to create a given data model and will send motion / activity from the consistency of the data display to the changes that occur. By grouping all views and presentation code in

one place, it will be easy to change views without affecting business logic and data.

3. Controller: The controller defines the behavior that occurs in the application, and then maps it into actions from the user to the model. The controller will be very closely related to View, because every user interaction that will be performed will be shown by View to a response by the Controller. Inside the controller there will be methods that will respond to application behavior.

### **2.3 Literature Review**

Many previous studies have discussed the assessment of online data processing systems, so this study needs to be done with a literature study (literature review) as one of the applications of research methods to be carried out. Among them are:

1. Research conducted by Ade Setiadi and Fifit Alfiah[1] in the SIMETRIS Journal (2016), entitled "AJM Motor Shop Spare Part Sales System Using CI Based on MVC Architecture". In the world technology, especially programming at this time, both desktop and web base, is increasingly rampant use a framework and one of the PHP-based frameworks that are widely used is CodeIgniter (CI). The CI Framework was indeed developed to make it easier to develop applications with source file structures the code uses the Model-Views-Controller (MVC) architecture approach and oriented programming the object. Therefore, we use CI in developing this application with the Object Oriented method Analysis and Design as a system development method. With the design of this system has been facilitate the store owner in managing customer data, suppliers and goods that are purchased and di selling and making reports required for the calculation of sales and can provide information that is useful for store owners up to date.
2. Research conducted by Khanna Tiara, Desy Apriani, Julipah Al Munawaroh[4] in ICIT

Journal (2017), entitled "Optimization of Dream Innovation Days as a Media Supporting the Assessment of Career Raharja". By using the Mind Mapping method, swot analia. Supporting Media namely: iMe (iLearning Media). The results of this study discuss when students participate in Raharja Career students do not need to collect data manually enough to do an author request and have a Rinfo email, then students can already make Raharja Career documentation according to the terms and conditions. After creating, the documentation link can be confirmed to the DID Admin for input into the Raharja Career documentation list with proper status and entered in the Raharja Career assessment. The presence of this system at Raharja Career is expected so that students can work on Raharja Career documentation easily and the teaching lecturer can do student PO through this task anytime and anywhere because it can be accessed online and centralized.

3. Research conducted by Ajay Supriadi, Fifit Alfiah and Mochamad Fiqri Nur Fauzan[5] in TECHNO Nusa Mandiri Journal entitled "Cooperative Learning Model Type of Game Games Tournament Team Based on E-Learning at Smk Nusajaya Tangerang". This research is motivated by gaps in teaching and learning at Nusajaya Vocational School, Tangerang. This study aims to make Cooperative Learning Type Team Learning Games based on E-learning that can increase student interest and learning attitudes at Nusajaya Tangerang Vocational School. The results of this study are an e-learning that can attract students' interests and attitudes to learning. In e -learning not only contains learning material content but there is a menu for interaction with students and an interesting menu for students, then this research is a Research and Development (R & D) research on the application quality testing process using Black box testing. So that the testing of this system shows results that are very feasible to

use, after being used in two-stage learning, namely cycle 1 is 68.53% and cycle 2 gets results that increase 12.94% on student interests and attitudes to 81.47%.

4. Research conducted by Qurotul Aini, Untung Rahardja, Anoesyirwan Moeins, Dewi Mariana Apriani[6] in the UPGRIS INFORMATICS Journal (2018), entitled "The Application of Gamifications in Information Systems for Student Examination Assessment to Improve Lecturer Performance" using data collection methods , system analysis, and applications used by the Unified Modeling Language (UML) and the Yii Framework. The results of this study discuss the application of PEN + gamification using data collection methods, system development, system analysis, design, and testing that can provide benefits. First, students can see grades quickly. Second, motivating lecturers in the process of inputting grades. Third, it can maintain the discipline of lecturers so that they can improve the quality of lecturers.
5. Research conducted by Untung Rahardja, Qurotul Aini, Neng Enay[7] in the Scientific Journal of SISFOTENIKA (2017). entitled "Optimization of the Dashboard on the Student Examination Assessment System as Higher Education Information Media". by using methods of analysis, interviews / interviews, observation, design, and implementation. The application used is Yii Framwork. The results of this study discuss After being implemented in the PEN + system there is a dashboard that conveys information on the overall grade of one class and students can find out what is the highest grade and what is the lowest grade in their class online and of course efficient.

### III. RESULT AND DISCUSSION

Creating a system to be able to manage student assessment data processing reports in order to reduce errors or loss of data that often occurs and building a web-based student assessment data processing information system in order to get

information about the results of the final assessment report.

#### A. Problem

The current appraisal system is still done semi-computerized, there are many shortcomings in the current appraisal system including the value must be input first to ms.excel and the lack of additional media in the assessment input process, errors and inaccuracies often occur in the process of processing student assessment data that still uses the request form or is manual and making reports made by the homeroom teacher still requires a long time because they have to collect data from each teacher.

#### B. Class Diagram

Class diagrams are used to explain the specifications of objects contained in the information system application Data Processing Web-Based Student Assessment Using Codeigniter Framework Case Study at SMK Negeri 1 Pandeglang. Where the proposed class diagram there are objects (classes) that are interconnected with one another.

Following this is the Class Diagram for the proposed employee shown in Figure 1.

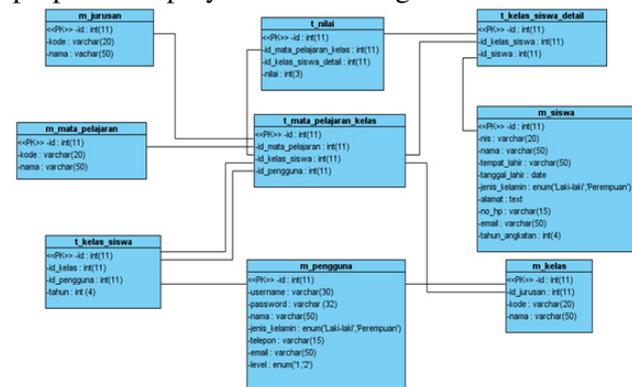


Figure 1. Class Diagram

Based on figure 1. The proposed Class Diagram contains:

- 1) 9 class, the set of objects that share the same attributes and operations including m\_jidang, t\_ilai, t\_kelas\_siswa\_detail, m\_mata\_elajar, t\_mata\_pelel\_clelelas, m\_siswa,

t\_kelas\_siswa, m\_petail\_detail,  
 m\_mata\_elajar.

- 2) 11 Multiplicity, the relationship between one object with another object that has a value.

**C. Model Design System**

After conducting research and analysis of the running system, then further discussion of the design of the system to be built. There are several proposed procedures aimed at improving and perfecting the current system.

To analyze and design the proposed system, this study uses a Visual Paradigm for UML 6.4 Enterprise Edition program to illustrate Use Case Diagrams, Activity Diagrams, and Sequence Diagrams.

1) Use Case system Diagram

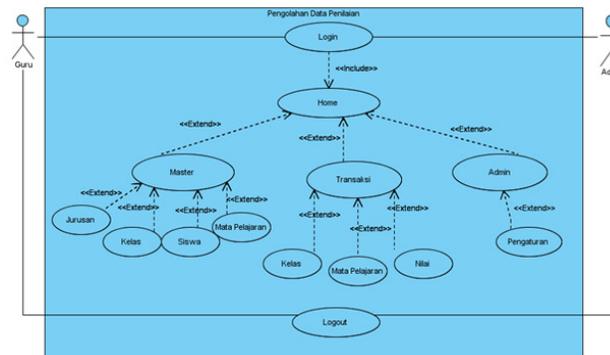


Figure 2. Use Case System diagram

Based on Figure 2 Use Case Diagram of the proposed system there are:

- a. 1 (one) system which is a proposed design of an appraisal data processing information processing system.
- b. 2 (two) actors who can carry out activities in the system, including Teacher and Admin.
- c. 2 (two) use cases as the interaction of actors with the system, namely: login and logout.

2) Activity Diagram

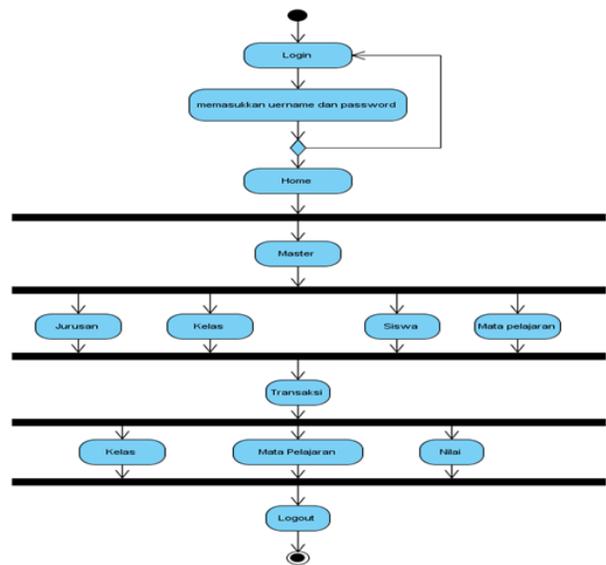


Figure 3. Activity System Admin Diagram

Based on Figure 3.on the next page, the Activity Diagram for the proposed Admin is contained:

- a. 1 (one) Initial Node, object that starts.
- b. 13 (thirteen) Action state, start from login, enter Username and Password if it fails then it will return to login, if it is correct it will enter home menu, enter master menu, can see majors sub menu, can see class, can see students, subjects, can see the transaction menu, can see classes, can see subjects, can see grades, then logout.
- c. 1 (one) Decision Node, the flow that determines the choice
- d. 1 (one) Final node activity, object terminated.

3) Proposed Sequence Diagram

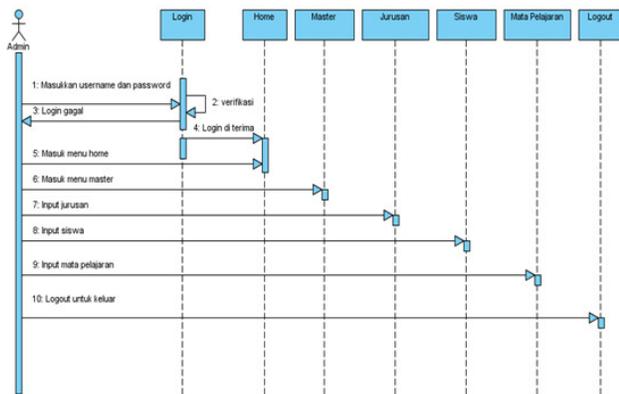


Figure 4. Admin Sequence Diagram

Based on Figure 4. the Sequence Diagram for the proposed Admin there are:

- 1 (one) actor who carries out activities, namely admin.
- 7 (seven) lifeline interfaces that interact with each other, including logins, home, masters, majors, students, Logout subjects.
- 10 (ten) messages include logging in by entering a Username and Password, the system will verify, enter the home menu, enter the master menu, majors input, student input, subject input and Logout to exit.

**D. Research Implementation**

The following are the results of the design of Web-Based Assessment Data Processing System Using Codeigniter Framework Case Study of SMKN 1 Pandeglang:

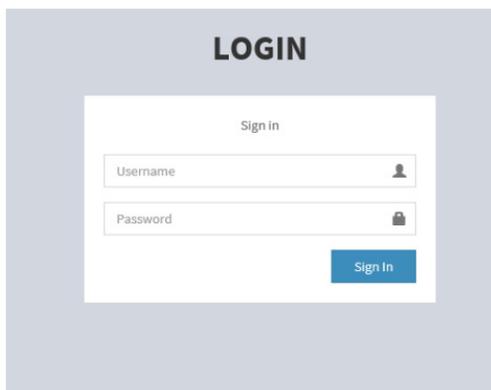


Figure5. Login Menu

Based on figure 5. Display the login form above will appear if it has entered the web browser and login to login the system. The above display can be used by Admin and teachers. They must enter their Username and Password if they want to enter the system.

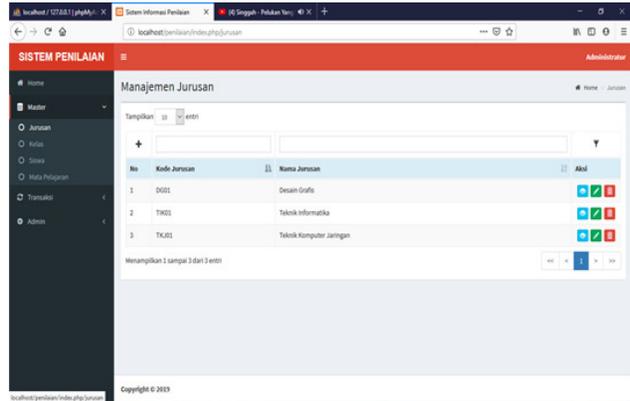


Figure 6. Majors sub menu

Based on figure 6. Display the majors sub menu above will appear if the admin has successfully entered the web browser and want to see the majors sub menu it will display the majors page.

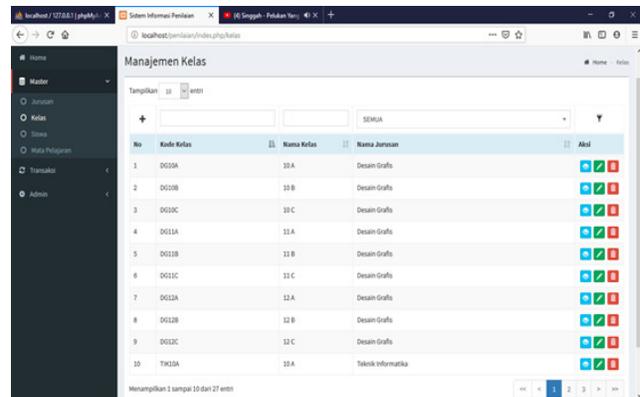


Figure 7. Page sub menu class

Based on figure 7. The class sub menu display above will appear if the admin has successfully entered the web browser and wants to see the class it will display the class page.

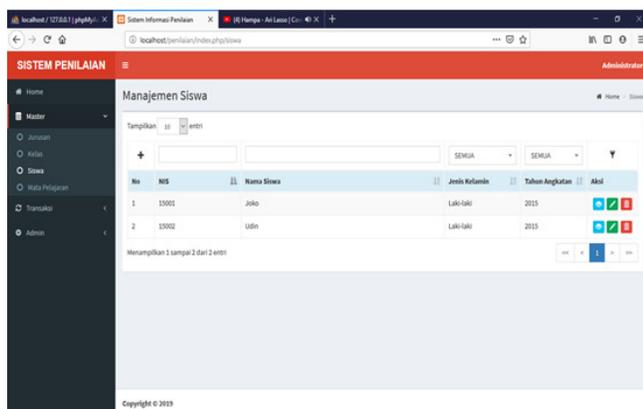


Figure 8. sub menu student

Based on figure 8. The student sub-menu display above will appear if the admin has successfully entered the web browser and wants to see the student and will display the student page.

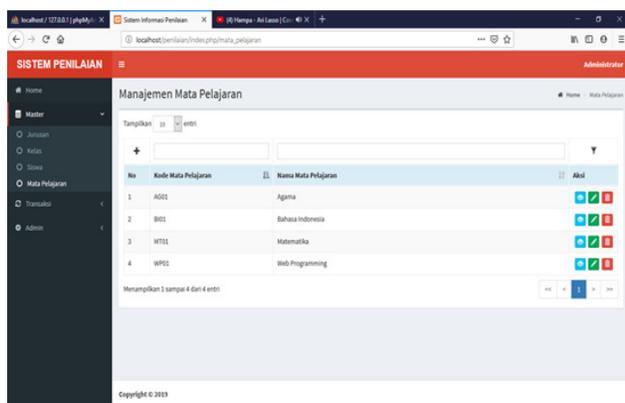


Figure 9. Page sub menu subjects

Based on figure 9. The display from the subject sub menu above will appear if the admin has successfully entered the web browser.

#### IV. CONCLUSIONS

Based on the discussion that has been explained about "The Design of a Web-Based Student Assessment Data Processing System Using the Codeigniter Framework Case Study of SMK Negeri 1 Pandeglang", the authors make the following conclusions:

1. Teachers of SMK Negeri 1 Pandeglang process an outcome value that is currently

running manually and requires a lot of paper and the current time with an online assessment information system so teachers do not need to waste a lot of paper and time because teachers can directly input grades into the system that can be done very easily by a teacher of SMK Negeri 1 Pandeglang.

- Teachers of State Vocational School 1 Pandeglang input grades are still manual, then an assessment system is developed so that teachers of State Vocational School 1 Pandeglang do not need to be difficult anymore to process grades because at present with the grading system in Vocational School 1 Pandeglang teachers do not need to process grades manually again because the value data will be directly inputted online into the rating system.
- In designing the system that the research proposed this system uses the PHP framework, namely codeigniter, using 108 sublime text for program listings and MySQL as a database. Program implementation uses the blackbox testing method, to determine a malfunction of a program and is declared successful / valid and does not find an error.

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