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Research paper

Design of student score application for assessing the most outstanding student at vocational high school

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Abstract

Learning achievement is a representation of student success level in learning. In accordance with the rules that have been determined by Muhammadiyah Vocational High School (SMK) to know the student achievement, it is needed criteria to determine who will be selected to be the most outstanding student. The purpose of this study was to design the Student score Information System as a support in decision-making and daily operational purposes, and to compare the effectiveness and efficiency of data processing and presentation of information between existing systems and information systems to be proposed. In improving the development process that the author will develop Student Information System as a supporter in decision making using Visual Basic 6.0 programming language. Research conducted in this case was descriptive qualitative research by conducting survey on the object of research that is in Vocational High School (SMK) Muhammadiyah Pringsewu District by using data collecting technique there were observation, interview, and literature study. The conclusion of writing this research is expected that the new system can provide convenience to the parties involved in performing data processing quickly and accurately, and can store data safely to assist in the process of service to students and society generally.

Keywords: *Information System; Database; Student Score; Outstanding Student; Vocational High School.*

1. Introduction

1.1. Background

School is a place of education for children. The purpose school is to teach children to advance nation. School is an institution designed to educate students under the supervision of teachers. Most countries have a formal education system, which is generally mandatory. In this system, student progress can be passed through a series of school, including high school. In this research focus on Vocational High School Muhammadiyah for the assessment of student achievement. Vocational High School (abbreviated SMK) taken within 3 years, ranging from class X to class XII. A graduate of Vocational High School can continue his education to High School.

The assessment and recording system in Muhammadiyah Vocational High School is still manual so it makes teacher and foundation difficult to conduct further analysis of the state of their students, in addition, the assessment is more focused into the academic field (Mastery of Concepts). Self-development assessments is carried out with minimum assessment standards, and only on the subjective judgment of the teacher concerned. This assessment system is certainly not enough, because it is not in accordance with the mission of SMK Muhammadiyah, this school wants to generate students who are not only good at academics, but also have a good moral.

One of the alternatives that is done to help the managerial improve the quality of Vocational High School Muhammadiyah is to utilize the development of existing information technology, especially Information System technology. Student Score Information System Students is expected to provide input for teachers to foster their students based on stored data, assessment of the success of teaching and learning process, and assist the managerial decide the steps / decisions to be taken next based on the analysis of existing data. The system is also expected to overcome some problems that occur due to the storage of manual data files, such as the risk of large loss and the need for a place to store the data, because this system can also be used to store data of existing students from year to year. Based on papers [1-68], this study aimed to design a student score information system as a support of decision-making in the assessment of student achievement Vocational High School (SMK) Muhammadiyah Pringsewu, Pringsewu District.

1.2. Problem formulation

From the above background it can be concluded that the formulation of the problem of this study was "How to design student score information system as a support decision making of student achievement?"

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1.3. Research purpose

a) Can help the improvement of services particularly it can accelerate and simplify the process of data processing students, values and other data.
b) To know how teachers assess their students in teaching and learning.
c) To Provide recommendations on the results of processed student data to authorized parties / officials.

1.4. Research benefit

Therefore the benefits of this research are:
a) Can create a study as the lecture
b) Can ease the school/teacher to determine high achieving student
c) To give best service, fast and responsible
d) With the existence of this system can spur better performance.

2. Literature review

2.1. Definition of system

System can be defined as an entity consisting of two or more components or sub systems that interact to achieve a goal. The system can be defined as a group of integrated elements with the same intent to achieve a goal. The system is an integration between one component with other components because the system has a different target for each case that occurs in the system" From the above definitions can be concluded that the system is a collection of a series of components that are interconnected and work together as an organic unity to achieve a goal that can affect partially that will affect the whole.

2.2. Definition of information

Information is one element in company management. For information flow smoothly, managers need to keep information in a system framework. Information can be defined as the result of data processing in a form that is more meaningful to the recipient that formulates a fact event which is used for decision making.
From above definitions, it can be concluded that information is data that has been processed in such a way into a form that is more meaningful for the recipient who illustrate a real events, so it is useful and can be used in the process of current decision-making and for future.

2.3. Definition of information system

The information system is a conceptual system that uses conceptual resources, data and information, to represent a physical system in which case a company or organization.
The information system is a system within an organization that reconcile the needs of daily transaction processing that supports the function of organizational operations that are managerial with the strategic activities of an organization to be able to provide to certain outside parties with the necessary report.

2.4. Definition of data

The data is a fact that formulates a real event, the data is a form of information that is still raw so it needs to be processed further in order to result useful output. Data can be recorded in paper, books, or stored as files in the database. Data will be the material in a process of data processing. Therefore, a datum has not been able to explain much before it is processed further.
Data processing is divided into three stages, called the data processing cycle (Data Processing Cycle), namely:

a) Input Stages, which is the process of entering data into the computer through input media (Input Devices).
b) At the Processing stage is done data processing that has been entered, which is done by Processing tools (Process Devices) which can be a process of calculation, comparison, control, or search distorage.
c) At the Output stage is done the process of producing output from the data processing to the output tool (Output Devices) that is in the form of information.

2.5. Data processing

Data processing is the time used to modify the change of forming data into information that has utility. The more data and the complexity of data processing activities in an organization, either large organizations or small organizations, then the exact method of data processing is needed.
Electronic data processing is a series of activities intended for the provision of information by using a computer that includes data collection, data processing, processed data supervision.

2.6. Database

The database is a collection of data that are interconnected with one another, stored on a hard computer and use software to manipulate it. The database is a systematic collection of information stored in a computer so it can be checked using a computer program to obtain information from the database. The software used to manage and call queries is called database management system (DBMS). The database is a collection of related data arranged, organized and stored systematically in the stored computer media referred to certain methods in such a way that can be accessed quickly and easily using a computer program to obtain data from the database.

2.7. Score

Score is the price at which a has a score because it has a price because it has score. Therefore, the score of the same thing before must have the same price anyway because one's judgment of the same thing is usually at stake. Some even do not give score to something because it is not valuable to him but maybe for others even have a very high score because it is very valuable to him.

2.8. Student

Student is member of the community who seek to develop their own potential through the learning process on the educational path both formal and non-formal education, at the level of education and certain types of education. Student is a term for learners at the level of primary and secondary education.

2.9. Visual basic

Visual Basic is programming language comes from BASIC. It means that the program waits until a response from the user in the form of a particular event, such as a clicked button or selected menu. When an event is detected, the corresponding event will perform the action according to the given code.

3. Data collection method

3.1. System representation using waterfall

Basically a research aims to find, to develop or to test a knowledge. Finding can be interpreted as an attempt to get something to fill the void or lack there is, but developing means digging deeper things that previously existed.
In this research done some method according to expert
1) Observation Method

According to Narbuko [8] He states,
"Observation is a data collection method that is done by observing and recording the investigated symptoms systematically “
With this method researcher directly come to location and observe the objects that will be observed

2) Interview Method

According to Suyanto [14] states
Interview is a method used if you want to get more complex and detail information because if there is still not clear then it can be directly asked and discussed ".
This method is used to find out all the things that become constraints / problems that are often encountered in SMK Muhammadiyah Pringsewu Pringsewu District.
The tools that were used in this research and DSS among others :

a) A set of computer with specification :
   1) P IV 1,7 Ghz
   2) RAM 256 MB
   3) 40 Gb Hardisk Seageate
   4) 64 MB VMA
   5) Canon Pixma IP 1200 Printer
   6) Barcode Scanner
b) Visual Basic software for visual programming
c) Microsoft Access for trial and developing database

3.2. System development

The development of this system was done by using Systems Development Life Cycle (SDLC). SDLC, life cycle in system development in software engineering means the process of creating and altering systems and the models and methodologies used to develop systems.

3.3. Proposed analysis application

The proposed application was the application of data processing for student score by using visual basic 6.0. The purpose of the proposed application as data processing student score was to facilitate admin / part Administration for student data processing, student data score and data subjects and other data can be done well and can reduce errors in the data collection.

3.4. Hardware need specification

The minimum specifications that can be used to run the Library System Application are as follows:

1) Processor: Pentium III 533 GHz (or more) and AMD Duron series (or more).
2) RAM : 128 Mb
3) Harddisk : Free space 256 Mb
4) Monitor: Monitor Resolution 1024 x 768 pixel.

3.5. Specification of software need

This application was developed by following software’s

1) Operating system: WindowsXP 2
2) Database: MS. Access
3) Programming language: Microsoft Visual Basic 6.

4. Implementation

The design of student score information system as a support decision making using visual basic application 6.0 is used to facilitate the operator / part of TU in processing the process of data collection of students, the data collection of students, the data collection of teachers and data collection of courses, as well as the report of each existing data.

4.1. Main menu

Figure 1 shows student data form.

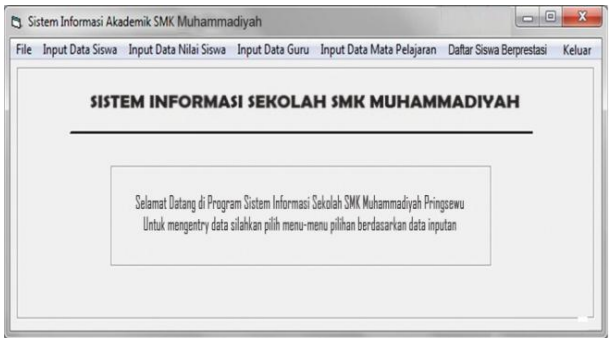


Fig. 1: Main Menu Form.

4.2. Score data input

Figure 2 shows score data input.

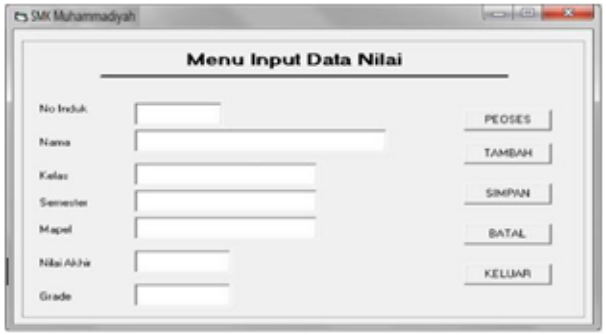


Fig. 2: Score Data Input.

4.3. Course data input

Figure 3 shows course data input.

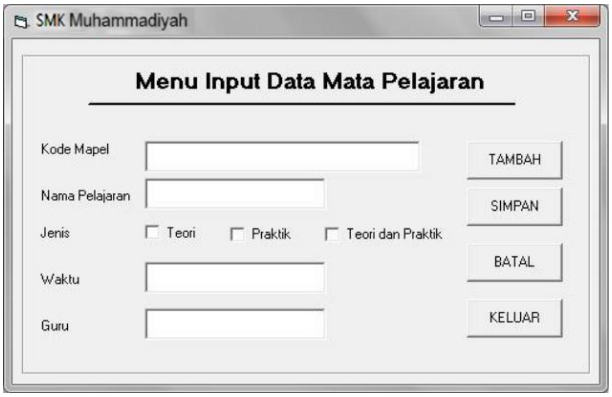


Fig. 3: Course Data Input.

4.4. High achieving student data input

Figure 4 shows achieving student data input.

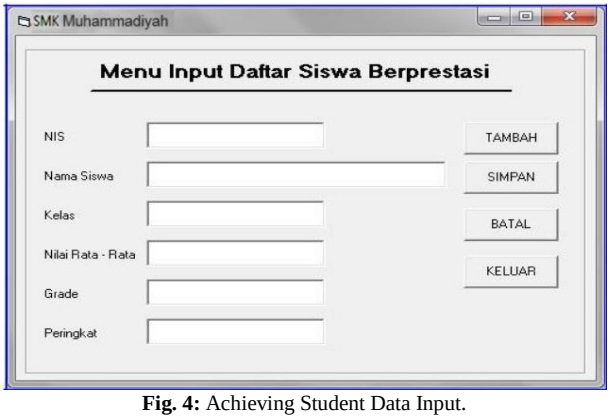


Fig. 4: Achieving Student Data Input.

4.5. High achieving student list

Figure 5 shows high achieving student list.



Fig. 5: High Achieving Student List.

5. Conclusion

With the development of student value information system using Microsoft Visual Basic 6.0 application will help completing the data processing activities quickly, so that it can help efficiency can be further improved. In addition, by using a computerized system will be able to facilitate operators in operating data and facilitate the processing of students and other data. For stability and continuity of the his system application then: a) Allowed Modifiying (or equivalent) application file system and student data processing applications and other data for the sake of stability and continuity of application, b) Allowed to change time set or date in the system, c) Application of SMK Muhammadiyah student socre application must be evaluated continuously to improve service quality

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