IMPLEMENTATION OF AHP METHOD FOR THE SELECTION OF THE BEST SCHOOLS IN MEDAN CITY BASED ON THE WEBSITE

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Abstract

In selecting the best school for prospective students or those who will continue their education. There are many criteria that must be seen from the number of schools in the city of Medan, which is one of the factors determining the quality of the school. Because they only use newspapers and brochures, many prospective students are confused or hesitant in deciding which school to attend. Many schools are often not in accordance with the information contained in the media newspapers and brochures, this of course can be detrimental to prospective students / students who want to enter the school. Thus many prospective students or guardians of students feel doubt in determining which school to choose. Based on previous research regarding the selection of the best schools in journals, "Decision support system to determine favorite private junior high school level using the analytical hierarchy process method" requires a decision support system that is able to provide problem solving to make it easier for prospective students / students to determine the best school so that there is no confusion or doubt in determining the best school . The Analytical Hierarchy Process (AHP) method can test the consistency of assumptions about an alternative in determining the best school, Applications that use the WEB-based Analytical Hierarchy Process (AHP) method is one application that can assist in determining the best school selection, Analytical Hierarchy Process (AHP) is a functional hierarchy with the input name in the form of human perception.

1.   Introduction

A play tree is a binary search tree adapted to the additional property that new elements are accessed quickly for re-access. Splay performs basic operations such as insertion, look-up and deletion in amortized (logarithm n) time numbers. For many sequences of non-random operations, the expanding tree performs better than other search trees, even when the particular pattern of the sequence is unknown. The expanding tree was invented by Daniel Dominic Sleator and Robert Endre Tarjan in 1985. All normal operations in a binary search tree are combined with one basic operation, called splaying. Playing a tree for a particular element composes the tree so that the element is placed at the root of the tree. One way to do this is to first perform a standard binary tree search for single or combined elements as needed. If all three are used together, the consequence is that the network will be much safer than using only one security process, and then using a specific tree rotation to bring the elements up. Alternatively, a top-down algorithm can combine search and tree reorganization into a single phase. The methodology used in this research is Research & Development with data structure learning tutorials [1][2][3]. Non-linear data structures If all three are used together, the consequence is that the network will be much safer than using only one security process, and then using a specific tree rotation to bring the elements up. Alternatively, a top-down algorithm can combine search and tree reorganization into a single phase. The methodology used in this research is Research & Development with data structure learning tutorials [1][2][3]. Non-

linear data structures If all three are used together, the consequence is that the network will be much safer than using only one security process, and then using a specific tree rotation to bring the elements up. Alternatively, a top-down algorithm can combine search and tree reorganization into a single phase. The methodology used in this research is Research & Development with data structure learning tutorials [1][2][3]. Non-linear data structures is an inconsistent system [4]. Innovative learning is learning that provides knowledge that produces an opportunity [5]. The algorithm based on this optimization play tree is proposed to reduce word grouping that accumulates by recording the data [6]. The experimental results show that the proposed method is effective in identifying various categories for searching [7]. The principle of very detailed data structure design to automatically synthesize new data structures [8]. There are many difficulties in the teaching and learning process of Algorithms and Data Structures [9]. Dynamic binary search tree is a fundamental class of dictionary data structure [10], which predicts that a display tree is a universally efficient form of binary search tree, for any access sequence [11].

2.   Research Methods

The selection of the best schools in the city of Medan is determined by several criteria, namely school accreditation, School facility, school achievement and school activities. Each prospective student / student or guardian of the student / student will choose based on four criteria,as the basis for the design, it is necessary to carry out system analysis which aims to understand and know the advantages, disadvantages and system requirements in order to become the latest and most efficient system.

The selection methods in the decision support system (Nitisemito, 1996, 36) are as follows:

1. *non scientific method,*namely the selection carried out not based on criteria, standards or specifications of real needs, but only based on estimates and experience. This selection is not guided by job descriptions and job specifications of the positions to be filled.

    The elements selected in this method are as follows:
    a. Taken from the first rank even though you don't master the material
    b. References or recommendations from trusted parties.

2. *Scientific method*, namely the development of non-scientific selection by conducting a careful analysis of the elements to be selected in order to obtain competent participants with the right placement.

    Scientific selection is carried out in the following ways:
    a. *An exam is conducted to determine the ability possessed regarding mastery of the material.*
    b. *Participants are selected based on the criteria that are eligible to participate in the next Olympics.*

The required device specifications are:
1. *Intel Pentium Processor* IV 1.8 Ghz
2. *Memory* 512 Mb
3. *Hard disk* at least 80 Gb
4. VGA 128 Mb
5. Monitor with 800x600 . resolution
6. *Keyboard* and Mouse
7. Windows XP / 7 . Operating System
8. Visual basic application program
9. sql server 2008 application program

3. Results And Discussion
Activity Chart

*Activity*Diagram is one way to model the events that occur in the use case. In this diagram, it is essentially similar to a flow chart (Flowchart),In some ways this diagram plays a similar role to a flow chart, showing the flow of control from one activity to another. Activity diagrams serve to visualize, specify, construct, and document the properties of a set of objects, but it can also be used to model the control flow of an operation.
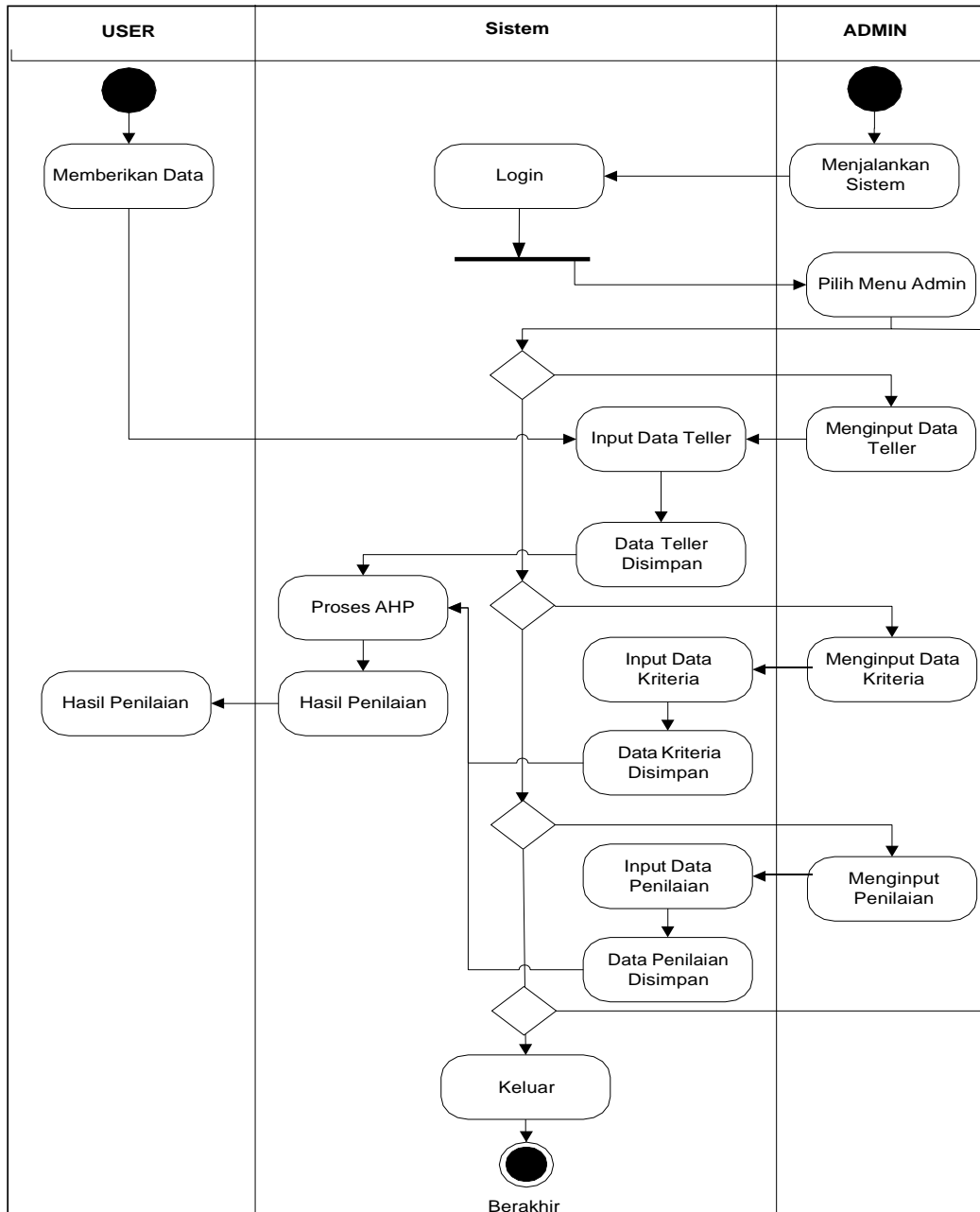
Figure 1. Activity Diagram of the Support System

Implementation

Implementation is the process of implementing the new system created. In order to run perfectly implementation requires an explanation of how the system works from start to finish. In addition, implementation is also a step for testing a system whether the system has deficiencies, from which suggestions will emerge to improve the system for the better.

Following the results of tests carried out by testing each process and the possible errors that occur for each process. This test is carried out in a black box, namely the test is carried out by only paying attention to the input to the system and the output to the system.

1. Admin Login Test

Table 1. Admin Test

Cases and Test Results (Normal Data)			
Data Enter	Which are expected	Observation	Conclusion
Username and Password available	Login is successful, the main admin menu appears	Username and Password exist. Login successful. The admin main menu page appears.	Received
Cases and Test Results (Wrong Data)			
Data Enter	Which are expected	Observation	Conclusion
Username and password do not exist	Unable to login and displays the message "Your username and password are incorrect"	The user cannot login and displays the message "Your username and password are incorrect" as expected.	Received

2. School Data Test

Table 2. School Data Testing

Cases and Test Results (Normal Data)			
Data Enter	Which are expected	Observation	Conclusion
School Data must be filled all	All School data information is filled in. Displays the message "new data saved".	All School data information is filled in. Displays the message "new data saved"	Received
Cases and Test Results (Wrong Data)			
Data Enter	Which are expected	Observation	Conclusion

School data is not filled in	Application cannot save data input. Displays the message "there is still data that has not been filled"	Application cannot save data input. Displays the message "there is still data that has not been filled"	Received

3. Criteria Data Test

Table 3. Testing of Criteria Value Data

Cases and Test Results (Normal Data)			
Data Enter	Which are expected	Observation	Conclusion
All criteria value data is filled in	All data descriptions of criteria values are filled in. Displays the message "new data saved".	All data descriptions of criteria values are filled in. Displays the message "Saved criteria value data"	Received
Cases and Test Results (Wrong Data)			
Data Enter	Which are expected	Observation	Conclusion
There are criteria value data that are not filled in	Application cannot save data input. Displays the message "there is still data that has not been filled"	Application cannot save data input. Displays the message "there is still data that has not been filled"	Received

4. Sub-Criteria Data Testing

Table 3. Testing of Sub-Criteria Value Data

Cases and Test Results (Normal Data)			
Data Enter	Which are expected	Observation	Conclusion
Sub-criteria value data filled all	All sub-criteria value data information is filled in. Displays the message "new data saved".	All sub-criteria value data information is filled in. Displays the message "Saved Sub-criteria value data"	Received

Cases and Test Results (Wrong Data)			
Data Enter	Which are expected	Observation	Conclusion
Sub-criteria value data is not filled in	Application cannot save data input. Displays the message "there is still data that has not been filled"	Application cannot save data input. Displays the message "there is still data that has not been filled"	Received

5. Test result

Table 4. Test Results

No	Best School Candidate Name	Manual Calculation	System Calculation	(T/F)
1	BUDI UTOMO	0.45632	0.45632	T

Description:

T= True.

Occurs when the results of the Decision Support System calculations are the same as manual calculations.

F = False.

Occurs when the results of the calculation of the Decision Support System differ from the results of manual calculations.

Based on the tests that have been carried out, it is obtained:

Accuracy Rate   = (amount of accurate data/total sample) * 100%

                     = (3/3) * 100%

                     =100%

4. Conclusion

Based on the program design and implementation, the following conclusions can be drawn:

1. In making a decision support system in need of several criteria and make a calculation.
2. The application in determining the best school must be calculated using the AHP method.
3. With this system, it can help users choose the best school
4. By using the election appbest schoolIn this way, school data and grades from each school can be stored and managed, so that if one day a list of names of schools that have been the best schools is needed, the data can be found easily without having to re-enter data or grades from the school.

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