DECISION SUPPORT SYSTEM ACCEPTANCE OF NEW STUDENTS HIGH SCHOOL 1 CIKAMPEK

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ABSTRACT

High school 1 Cikampek is one of the schools that still use manual system to the academic process. The purpose and objective of this research is to study the process of new admissions system is still done with a manual system to a computerized system using the ID3 decision tree method as an algorithm to simplify the selection process for new students.

Designing system used is prototype method, a tool used to design systems such as Flow Map (Flow Chart Document), Contecsx Diagram (Diagram Context), DFD (Data Flow Diagram). While the tool uses MySQL database application development and programming language of Borland Delphi 7.0.

The system also has an advantage that helps the user / new student admissions committee for prospective students can prepare new data, the data value of prospective new students, new student selection, and registration data. Besides the efficiency of time is more guaranted and also help in the process of making the reports required by the user and the new students themselves as a new student data reports and the reports of students accepted or rejected at high school 1 Cikampek.

Results from this study is to analyze the applications that can facilitate large amounts of data, to assist in providing information as a result of corporate decisions. But this system also, there are weaknesses in terms of facilities and appearance of the program so that still needs improvement.

Keywords: academic process, decision tree, ID3, data.

1. INTRODUCTION

1.1 Background

The decision is the selection process, among the various alternatives of action that aims to meet one or several targets. Decision system has 4 phases, namely intelligence, design, choice, and implementation. Phase 1 to 3 is the basis for a decision, which ended with a recommendation. problem solving is similar to the decision-making coupled with the implementation of the recommendations. Solving the problem does not only refer to the solution of the problem area / the difficulties but also include investigations about the opportunities that exist. Decision tree is one method of data mining is used to obtain a solution to the problem.

In the field of education there are still many schools that still use a piece of paper or even just using microsoft excel application for data processing students. One of them is high school 1 Cikampek, Jl. Ir. H. Juanda Kota Baru – Karawang. High school 1 cikampek is a school that has a ± 1 500 students consisting of class 1, class 2 and class 3. Each year high school 1 cikampek students receive approximately ± 500. New student registration system high school 1 Cikampek by looking one by one SKHU, UAS value, and UAN value, then calculated using the calculator to

obtain an average value of prospective students to meet or not to be entered into high school 1 Cikampek. Therefore, frequent and slow calculation error in data processing prospective students.

From high school 1 Cikampek problem above, we see that high school 1 Cikampek need a tool which facilitates the management of new students high school 1 Cikmpek Decision tree method. By because they were, the author as one of former students high school 1 cikampek wanted to improve the recruitment system for prospective students high school 1 cikampek. The author expects a decision support system built new students at high school 1 Cikampek may facilitate the work of new student admissions committee high school 1 Cikampek.

1.2 Problem Identification

From the above statement can be identified problem is: "How do I create software for building decision support system of new admissions in high schoo 1 Cikampek."

1.3 The Aim and The Purpose

Based on the problems studied, the purpose of this thesis is to build a decision support system of admission of new students at high school 1 Cikampek. While the purpose of this research are:

1. Facilitate the work of new student admissions committee high school 1 Cikampek in processing new student data.
2. Minimize errors made by the admissions committee of new students high school 1 Cikampek in data processing prospective new students.

2. MODEL, ANALYSIS, DESIGN, AND IMPLEMENTATION

2.1 Model

Data analysis technique of software construction using software modeling with waterfall paradigm as shown in Picture 1.1, consist of several process which are:

a. System / Information Engineering

It is a part of the biggest system in a project construction, begin with determine various requirement from the entire element that necessary for the system and allocated it into software construction.

b. Analysis

It is analysis stage of materials that necessary to perform the software construction project.

c. Design

It is translation stage of analyzed data into comprehensible form for user.

d. Coding

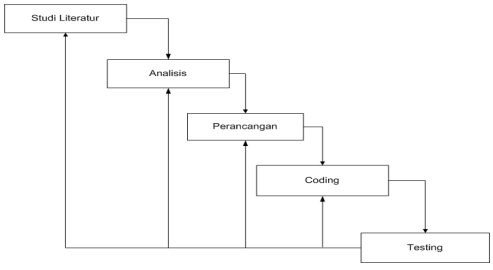
It is a stage of translation data or problem solving that has been designed into specific programming language.

e. Trial

It is a trial of the constructed software.

f. Maintenance

It is a final stage where the settled software may have any modification or addition congruent with the user demand.



Picture 1. Waterfall Paradigm

2.2 Analysis

A. System Analysis

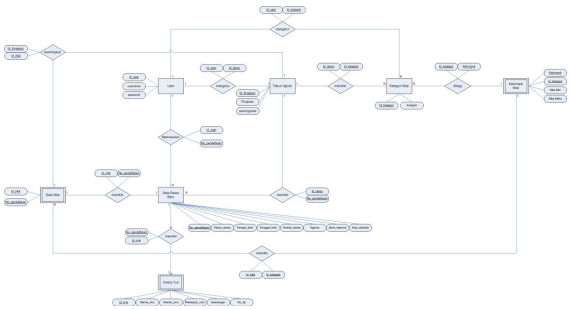
System analysis defines as disperse of an intact information system into parts of its component as the objective is to identifying and evaluating the problems, opportunities, obstructions that happened and the requirements so the improvements can be suggested. Or in easy way, system analysis is a research on the existed system with purpose is to design a new system or renew it. This analysis system stage is a very critical

stage and very important, because any mistake in this system will also causes mistake in the next stage. The main task of analysis system is to find the weakness of performing system so the improvement can be suggested.

B. Basis Data Analysis

The logic structure of basis data is drawn into a graphic using Entity Relationship Diagram (ERD). ERD is a relationship between entities that used in the system to describe the relationship between entities or data structure and relation among files.

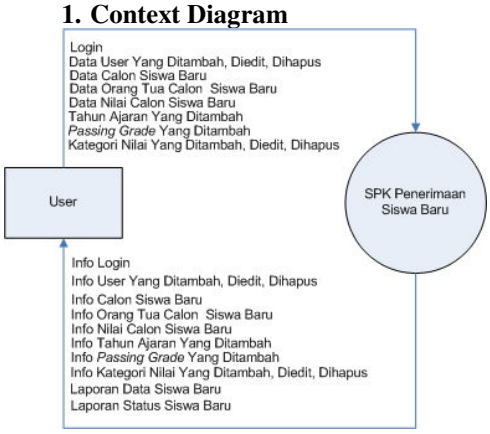
The main component ERD formation are Entity and Relation then in this item ERD are components of entity complex and relation complex that showed more specific by several properties describing the entire facts of the following system. The ERD of constructed application are below:



Picture 2. Entity Relationship Diagram (ERD)

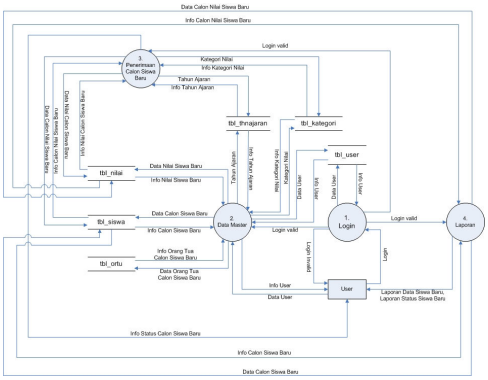
C. Functional Requirement Analysis

1. Context Diagram



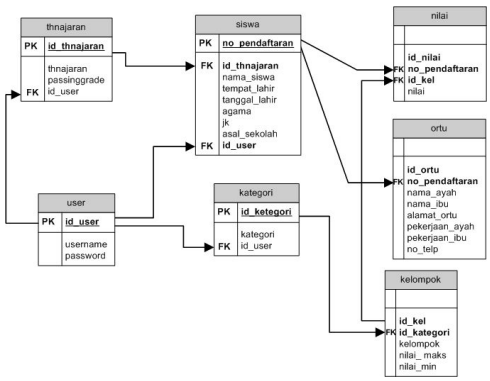
Picture 3. Context Diagram

2. DFD Level 1



Picture 3. DFD Level 1

3. Relation Scheme

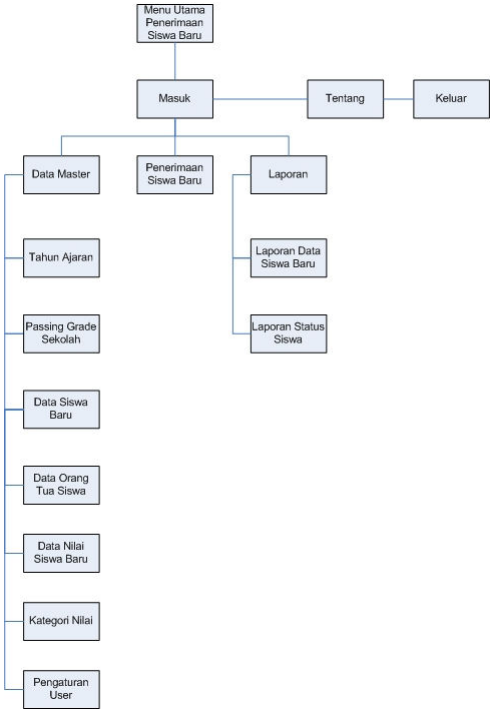


Picture 5. Relation Scheme

2.3 Design

A. Menu Structure Design

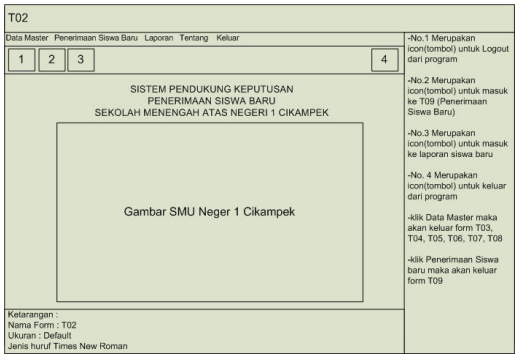
Designing an application need a menu structure contains of menu and submenu with function is to make user applying the application easier. Below is showing of menu structure of this application:



Picture 6. Menu Structure Design

A. Application Main Menu Design

Below is the picture of main menu design.



Picture 7. Main Menu Appearance

B. Display Design New Student Admission Process

Below is the picture of designing a new admissions process :



Picture 8. Display Design New Student Admission Process

2.4 Implementation

The implementation of the constructed system will be done in this stage after analyzing and designing has been finished. Then will be implemented to the utilized programming language.

A. System Implementation

The implementation purpose is to confirm the designing program module to the performer system so that user can give the input to the system builder.

B. Hardware Implementation

The hardware that used to implementing the system are below:

1. *Prosesor* : 1,86 Ghz
2. *Memory* : RAM DDR 256 MB
3. *Harddisk* 40 GB
4. *VGA Card* 64 MB
5. *Keyboard, mouse, dan monitor.*

C. Software Implementation

The software that used to implementing the system are below:

1. *Window XP service pack 2,* as an operating system,
2. *Borland Delphi 7.0,* as the implementation of the system design,
3. MYSQL as the D*atabases Management Storage* (DBMS),

D. Form Implementation

Form implementation is performed to know each program page that has been made. Below is the for implementation:

Tabel 1. Form Implementation

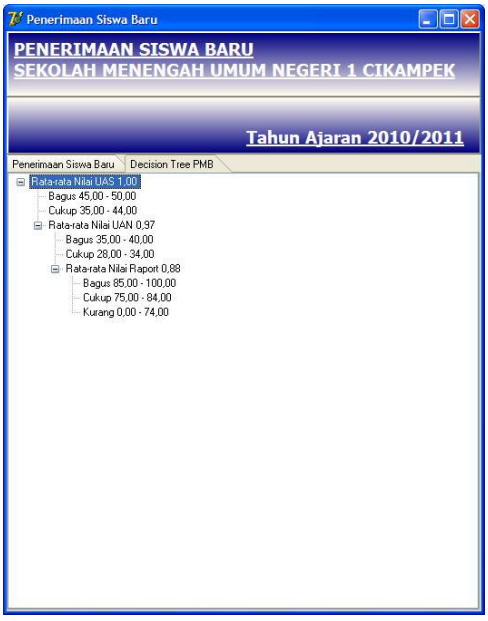
Menu	Deskripsi	Nama File
Login User	Program file to handle user login	uLogin.pas
Beginning Appearance	Program file to show the beginning page of application	uUtama.pas
Student Data	Data processing of new students	uSiswa.pas, uOtru.pas
Data value of student	Data processing, the value of new students	uNilai.pas
Data Value Categories	Data processing of value category	uKategori.pas
Academic Year	Processing of Academic Year	uThnajaran.pas
Admission of new students	The selection process acceptance of new students accepted or rejected	uPSB.pas, uNila.pas, uKategori.pas, uThnajaran.pas, uPG.pas
User Data	User data processing	uUser.pas

3. RESULT AND DISCUSSION

From the analysis and the designing that has been done, the result of the constructed application shown as these appearances below:



Picture 9. Form New Student Admission Process



Picture 10. Form decision tree analysis

4. CONCLUSION AND SUGGESTION

4.1 Conclusion

After the analysis, designing, and trial, the conclusions obtained are:

1. Application built to help new students admissions committee SMU Negeri 1 Cikampek in decision-making plan to recruit new students.
2. Applications are built may facilitate the work and minimize errors made by new student admissions committee high school 1 Cikampek.
3. Data processing can yield information of prospective students sufficient data to be analyzed further.
4. Applications are built to reduce the accumulation of data documents the prospective new students at the high school 1 Cikampek.

4.2 Suggestion

Based on the above conclusion, it is expected that the future is that these applications can be developed further with a new data processing prospective students a more numerous and widespread, so this application can really be used as one illustration in the new admissions decision making at the high school 1 Cikampek more accurate and useful.

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