

Academic Information System Design Academy of Midwifery 'Aisyiyah Palembang Using Object Oriented

Ida Marlina, Zainuddin Ismail, Muhammad Akbar

Master of Information Technology Program

Bina Darma University

e-mail : idamarlina79@gmail.com

Abstract

The level of competition is getting tighter in the world of education , Midwifery Academy Aisyiyah Palembang a midwifery school in need of technology and information systems to support the academic process and specifically learning new admissions process well . The study was conducted to analyze the information systems that can support the activities of the institution . So we need a system that is more structured academic information , innovative , and well-integrated and provide optimal contribution in achieving academic goals . The study is descriptive and techniques of data collection by observation , interview and documentation . In connection with these two studies carried out by the method of Object Oriented Analysis and Design of the system has been running , which is expected with the analysis carried out it will give you an idea of the speed , effectiveness and efficiency as well as comfort systems will be used by the user to support the learning process in Midwifery Academy Aisyiyah Palembang.

Keywords : *Analysis, Information Systems, Object Oriented Analysis and Design*

1 INTRODUCTION

Information required by the people for various purposes, so until now information technology is growing rapidly. Until the information is delivered through a variety of ways, many man-made tools to be able to produce the information. For this to be achieved we need a design strategy in the field of information technology. The procedure to obtain the information on the Academy of Midwifery 'Aisyiyah Palembang is still done in a conventional manner, such as less effective and efficient academic data of existing information so it takes time to find the data because the number of existing files. With the development of technology, there are also changes that take advantage of these technological developments. Included also in the academic information systems can be facilitated by using Object Oriented Analysis And Design (OOAD).

Through a comprehensive information system design, an educational institution can look objectively internal conditions and external, so as to anticipate the changes that exist and



Figure 1: Old Topologi

are able to provide information services in a more flexible and reliable. Midwifery Academy Aisyiyah Palembang which is one of private universities are still using manually Academic Information System to provide optimal information services to students, management and stakeholders thereby causing the resulting information can not be integrated properly and cause inaccuracies in the information reception new students. This is inhibiting in decision making, especially at the time of formulating the planning associated with the academic process at the Academy of Midwifery ' Aisyiyah Palembang. Based on the above, the authors are interested in doing research with the title of Academic Information System Design of the Academy of Midwifery ' Aisyiyah Palembang using Object Oriented " approach to Object Oriented methods of information provision services will have the scalability, security and better modularity.

1.1 Problem Formulation

Based on the above, it can be formulated several problems that arise such as how to develop and create the design at the Academy of Academic Information Systems Midwifery Aisyiyah Palembang by using Object Oriented Analysis And Design (OOAD).

For the focus of this study, the authors give a limit problem that is not too widespread discussion of the target so that it will facilitate the discussion and preparation of this thesis. methods of Object Oriented Analysis And Design (OOAD) in the development of the information systems academic student admission system.

2 RESEARCH METHODOLOGY

In this study, applying the methods of action research (action research). This research method is a method of research that aims to develop new skills or *kertampilan*-new approaches and ways to solve problems with direct application in the workplace or other actual world. To obtain a complete data depth and give the right answer to the problem to be studied used qualitative research methods. Overview of the characteristics described for the purposes of this study, in which academic information system (activity), used by the user (actor) in this case is in the Academy of Midwifery 'Aisyiyah Palembang (setting). This is when using a quantitative approach is less appropriate because this research is independent, not directly with the subject *beritegrasi* so it will be very difficult once disclosed the activities that took place.

2.1 Method of Data Collection

Data collection methods used in this study both in research as well as for the preparation of the measures used are as follows :

1. Observation of the research object

In this case I made some observations on the academic information system at the Academy of Midwifery ' Aisyiyah Palembang. The purpose of observation is to deskripsi observed setting, where activities of the people who participated in these activities and the meaning of what is observed.

2. Library Studies

The author collects various literature references and research support in the form of books, journals and articles that come from several sources including a library and internet media.

3. study Documentation

In this step the authors collected all the documents of the Academy of Midwifery ' Aisyiyah Palembang associated with the title.

4. interview

Interviews were conducted to collect data and information on what the research object. The conversation between the author conducted with the academic part.

5. Data collection instruments

Research using qualitative methods, in this study the observations were made directly to the academic system at Midwifery Academy inforamasi Aisyiyah Palembang and users who use information systems stretcher.

2.2 Method of Analysis

Methods of data used in this study is descriptive qualitative. While the object-oriented analysis method used in this study is the Unified method (Hariyanto, 2004: 380). The object-oriented analysis phase are:

1. Based on the needs of users of the system
2. Identifying usage scenario or Usecase.
3. Choosing classes and objects using requirements as a guide
4. Identifying attributes and operations for each object class
5. Identify the structure and hierarchy of classes
6. Build-class connectedness and object models
7. Conduct a review
8. The model generated with or usecase scenario.

2.3 Methods of designing

Design method used in this research is the object-oriented method using the Unified Modeling Language (UML). The diagrams are created on the Unified Modeling Language (UML) by Haryanto (2004: 26) consisting of:

1. Behavior diagrams Behavior diagram consists of:
 - (a) Usecase diagram (usecase diagram)
 - (b) Sequence diagram (sequence diagram)
 - (c) Activity diagram (activity diagram)
2. Structure diagram Diagram of the structure consists of class diagrams (class diagrams).

3 ANALYSIS AND DESIGN SYSTEM

3.1 Analysis System

Activity analysis is a system of activities to see that the system is running, see what parts are good and not good, and then the document needs to be met in the new system. It look simple but actually it is not. Many obstacles will be encountered in the process. In the development of information systems, analysis and design process often goes together. So long as the activities of analysis , design activities are also carried out. This is done because in many cases, the user is often difficult to define their needs. So they are easier to define needs, if they had seen pictures of the new system design, especially the design of the interface. Therefore, often times dibatasin about how that is considered as the analysis and how the design is considered as much of any difference. For example, some say that the use case, class analysis, and sequence diagrams are part of the analysis . But there are also others who claimed that the use case and sequence diagram is part of the design, and analysis class because there is no design class.

3.2 Analysis of Issues

This study departs from the potential and problems , where the potential is utilized when everything will have added value , in connection with the above , the researcher saw some potential possessed by the Academy of Midwifery Aisyiyah Palembang , among others :

1. Significant number of students.
2. Lecturer potential in teaching and learning activities.
3. The facilities were good and sufficient for the development of a system.
4. Management support in terms of development and improving the quality of human resources and the development of information and technology.

As for the problems that exist are :

1. The ineffectiveness of the existing academic activities at the Academy of Midwifery Aisyiyah Palembang in providing information services to the leadership, faculty and students.

2. Understanding of the duties and responsibilities of work that has not been well coordinated.
3. And Standard Operating Procedures (SOPs) are not going well.

Of the potential and the problems mentioned above , the researcher will build academic information system so as to produce the analysis of academic information system design better , effective and satisfying the parties served with object orientation

3.3 Object-Oriented Methods

Object-oriented method is a software development strategy that is organized as a collection of software objects that contain data and operations are applied to it. Object-oriented methodology is a way how software systems are built through the objects in a systematic approach. At this time, many object-oriented methods have been old methodology was chosen because of methodologic long given rise to problems such as the difficulty in transforming the results of the current stage of development to the next stage, for example on a structured approach, types of applications being developed today is different from the past . Applications developed today are very diverse (business applications. Real-time, utility, and so on). With a flat form different, giving rise to the demanding needs of the development methodology that can accommodate all types of applications to the.

3.4 Needs Analysis (Requerement Analysis)

1. Functional Needs Analysis Based on existing design made some analysis needs to be met:
 - (a) To improve academic performance.
 - (b) To improve the monitoring of academic activities are monitored directly by the director.
 - (c) System security through user authentication.
 - (d) Computer data storage servers as the parent academic
2. Analysis of Non-Functional Requirements

Based on the design which made necessary supporting multiple devices to support academic information system that is being designed:

- (a) Switches are used to connect the network between the client and the server that supports the specification of access speed of 100 Mbps.
- (b) PC computers are used at least a dual core for the client user.
- (c) The modem is a DSL modem that is used to support the academic reporting Kopertis.
- (d) Network security.
- (e) Supply of electricity to support the academic activities.
- (f) Backup system.

3.5 Interaction Between User Needs Analysis by System

Stage requirements analysis phase of intensive interaction between the system analysis community system (end-users), which based on the results of questionnaires and observations made of the obtained functional activity of the user interaction in the use of the system are as follows:

1. Prospective New Students

Prospective students are those who register as a prospective student.

2. Admissions staff (PMB)

PNB Staff is the person who takes care of and accept new students.

3. Academic staff

Academic staff are the people who take care of administrative and academic data archiving.

4. Assistant Director I (PuDir I)

PuDir I was the person in charge of the academic admission test schedule in academic and assess the results of the entrance test exam.

5. director

People who have a right to know the information about the information students enrolled, who take the exam and pass the entrance examination.

3.5.1 Models and Actors

Academic Information System is an information system to manage the information that is required in an academic process, while that became in this study include enrollment of new students.

3.5.2 Diagram of Scenario

In the process of designing sisem academic information in Palembang Aisiyah AKBID researchers designed several diagrams include the Use Case Diagram and Activity Diagram, Use Case Diagram which explains what should be done by the system on a conceptual level so that we will understand whether the decision taken by the system is correct or not, every use case must be explained through a description of the process flow of a use case (use case description) or use case scenario. Description use case contains :

1. Name of the use case is a use case that uses a naming verb
2. Description is an explanation of the purpose of the use case and the value that would be obtained by the actor
3. Conditions before (pre -condition) that is the conditions that need to exist before the use case is done.

4. Conditions after (post -condition) that the conditions have been fulfilled when the use case has been implemented.
5. Baseline (basic flow) is the flow that tells if all actions taken are correct or that the process should occur.
6. Chronology of the Alternative (Alternative flow) that alternate path tells a different action from the bottom line.

Alternative Activity in diagram illustrates the workflow (workflow) or the activity of a system or business process . To note here is that the activity diagram depicting the activity of the system is not what actors do , so activities can be carried out by the system . Activity diagram supports parallel behavior. Show in Figure 1.

4 RESULT AND DISCUSSION

4.1 Results

The results of this research plan is a Academic Information Systems at Midwifery Academy Aisiyah Palembang and Object Oriented Design method , where researchers in conducting design research methods Reseach and Development (R / D) with an experimental model before and after using the questionnaire method of data collection.

4.2 Data Tabulation Results

In the process of data tabulation questionnaire conducted by researchers with the number of respondents were 25 people in the design of Academic Information Systems at Midwifery Academy Aisiyah Palembang has been done with the experimental method after generating comparative performance before the old system is still manual and a new system that is shown in the following table . 5.2 Based on the above table , it is seen that the desire of the new system 's performance is much higher than the old manual system . On average 37 % longer performance of the system and the new system of 77.6 % . Old system working speed of 38% of the new system 79 % . Comfort of the old system and the new system 44 % 76 % . Productivity of the old system and the new system 29 % 78 % . Based on these data it appears that the new work system can raise the speed of work, working comfort and productivity. The frequency distribution graph on the performance aspects of the old system are as follows. The frequency distribution graph on the performance aspects of the new system are as follows :

4.3 User perception of the performance of Academic Information Systems

Research conducted by the authors outline consists of three aspects, speed , productivity and convenience in the use of the old Academic Information Systems and the planned development of the new Academic Information Systems , where the sample is done by spreading the questionnaire to the student as user . The results obtained from the study of these three aspects are as follows :

1. Academic Information System Performance

From the aspect of working speed , with the question : Do you agree when you log to academic information system Midwifery Academy Aisyiyah Palembang you feel not take a long time ?

2. Performance requirements of the new Academic Information Systems

Judging from the performance of the old academic information system, it can be seen that the percentage of users who responded agree and strongly agree do not exist, thus the researchers conducted an analysis of the needs of the new academic information system.

4.4 Discussion of Interface

The following will be discussed in detail one by one draft Midwifery Academy of Academic Information Systems ' Aisyiyah Palembang . Where this is the design of academic information system Midwifery Academy Aisyiyah Palembang to be developed.

5 CONCLUSION

Of research on the analysis and design of information systems Midwifery Academy Aisyiyah Palembang object-oriented analysis methods and design can be drawn some conclusions, namely :

1. From analysis and design class created to form new student , admission tests, grades and staff as an academic information system development which has been designed.
2. Academic information system modeling helps in understanding object -oriented design of the new academic information system that can provide good results.
3. With the academic information system is expected to maximize the performance of the staff in academic activities.

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