

# Designing Model of Information System to create Relationships Between Students Based on Discussion Forums

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## Abstract:

The development of information technology has entered the best stages in life today. The use of information technology also has a role in the field of education, such as discussion forums. Several previous studies have conducted research on the use of forums as suggestions for discussion for students between alumni. However, previous studies were considered to be less effective because previous studies did not focus on the education sector. We propose to create a discussion forum to help students who are preparing their final assignments. The process in this discussion forum provides a menu that is used by students to communicate, where the exchange of information is by uploading part of the final assignment and other students will provide input. For the creation of this discussion forum, we utilize the excellent classical method, SDLC. The stages in the SDLC are, among others, system requirements analysis, design, system testing, system implementation, and finally the system maintenance. The results of making this discussion forum system, the feasibility test has been carried out by using a questionnaire and good results are obtained, namely the increase of 75%.

**Keywords** — Information technology, discussion forum, effective.

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## I. INTRODUCTION

Information technology in life is now in a very good stage. The use of good information technology will produce good information too. The use of information technology can be applied in the field of education, such as the discussion forum. Discussion forums applied in the field of education have very positive values. The tool for developing information technology. Several previous studies have conducted experiments in making discussion forums for the field of Education, but the previous research did not focus on the field of Education. Exchange is intended for final year students. For the final year students are very useful and very useful, because the final level students need media to keep communicating in solving existing problems. For this reason, we propose to discuss forums to help final year students in providing communication media. The rest of the paper is structured as follows: in section 2, we review the related works. In section 3, the proposed approach is presented. We present

experiments and results with discussion in section 4. Finally, we conclude the paper and highlight the future work in section 5.

## 2. RELATED WORK

A system can consist of several subsystems or part systems. Components or subsystems in a system cannot stand alone independently [1], [2], [15]. Components or subsystems interact and interact with each other to form a unity so that the goals or objectives can be achieved [3], [4]. Information is the meaning of relationships and interpretation of data that allows someone to make a decision. Information is said to be valuable if the information affects the decision-making process better. Information system is a concept to adopt people, technology, and information to develop the decision support system in an internal organization [5], [6], [16]. In the process of information systems designing the problem of optimal information resources distribution in computer systems is one of

the most paramount tasks. Such problems arise upon designing information systems on the base of computer systems [7], [8]. Analysis is the decomposition of a complete information system into its component parts with the intention of identifying and evaluating problems, opportunities, obstacles, and expected needs so that improvements can be concluded. SDLC models consist of analysis, design, code, and testing [9], [10]. Discussion forums are a good tool in shaping communication between students and lecturers. Online forum can be used to complement learning and teaching, particularly in blended or hybrid learning courses[11], [12]. The asynchronous discussion forum may contribute to understanding the learning content, knowledge construction and student achievement. In asynchronous discussion forums, students are less involved or not willing to ask their peers [13], [14].

### 3. PROPOSED APPROACH

In this section, we present an approach to develop IT-support. The proposed approach has two parts namely: SDLC model and proposed approach.



Fig 1. SDCL Model

In the SDLC model section, it is divided into five parts, namely requirement analysis, system design, system testing, implementation, and maintenance. Requirement analysis, the process of analysing and gathering system requirements that are in accordance with the domain of behaviour information, performance, and interface (interface) that are needed. These needs are documented and seen again with customers. Design system, the design process will translate requirements into a software design that can be estimated before coding is made. This process focuses on: data structures, software architectures, interface representations, and procedural details. Testing system, the testing process is carried out on internal logic to ensure all statements have been tested. Functional external testing to find errors and ensure that inputs will

provide actual results as needed. Maintenance, software that has been delivered to customers will definitely change. These changes can be due to an error because the software must adjust to the environment (new peripherals or operating systems), or because customers need functional development or performance. In this system there is a lime menu provided, including messages, news, questionnaires, and forums. The message provided is applied to a personal message, where the contents of this message are negative from students or lecturers. The news displayed contains information. This information is very well read by users, to find out information that is happening. This questionnaire was provided by the university to assess discussion forums, whether they were good or not. The forum is used by students and lecturers in establishing communication, where this communication aims to connect communication outside the classroom. In the forum there are two menus, namely, uploading files and response files. Upload files, if students want to ask questions about the parts that are considered difficult, and other students will reply to messages from students who need help.

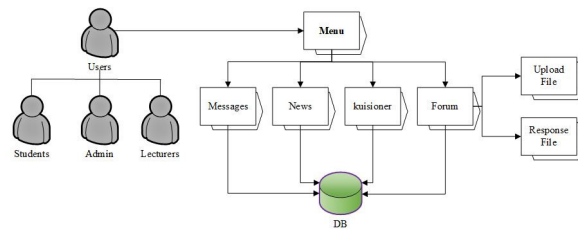


Fig 2. The proposed approach

### 4. TESTING AND IMPLEMENTATION

In this section, the results of the study will be explained, where the results section of this study is divided into three, system testing, system implementation, and comparison old system and new system.

#### 4.1 System Testing

The test conducted is black box testing. In black box testing, testing is only done by executing or executing units or modules, then observing whether the results of the module are

in accordance with the desired procedure. Testing is done to determine the steps in conducting the test. Testing is done by running the ticketing application to support the operational part of the web browser. After the application is run, then a series of function tests are performed on each application module, if it is in accordance with the design, the testing is considered valid.

4.2 System implementation

This stage is a continuation of the fifth phase of SDLC activities, namely testing and implementation. This stage applies a system so that it is ready to operate. Things that need to be prepared include hardware and software specifications. The login page will ask for a username and password for user authentication, if the admin user will display the menu as a whole, if the user supports IT, then only a portion of the menu will be displayed. The login page can be seen in Figure 3.

Fig 3. Login system

The discussion forum application display looks like in picture 4. In the menu provided, users can use some of the menus provided. The menu will be related to other menus.

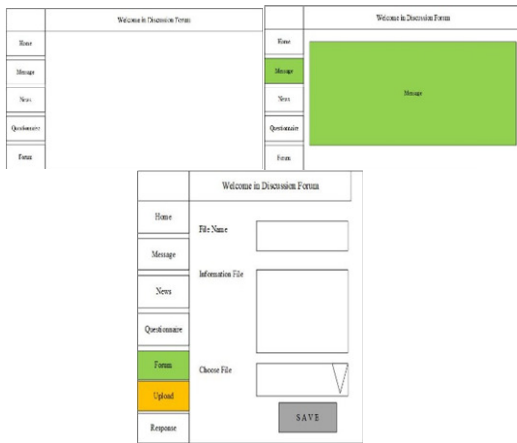


Fig 4. Activities on discussion forum

Users when they want to upload files, must first select the forum link, then there is the choice, upload and response. If you want to upload the file for Language, the user just needs to enter the file's identity, such as the file name, information about the file and select the file to be used for discussion. After all complete press the "SAVE" button. All data will be stored in the database.

4.3 Comparison old system and new system

Table 1. the comparison between old and new concept

Menu	Old system (%)	New System (%)
Discussion Forum	55	96.25
News	50	87.5
Questionnaire	50	87.5

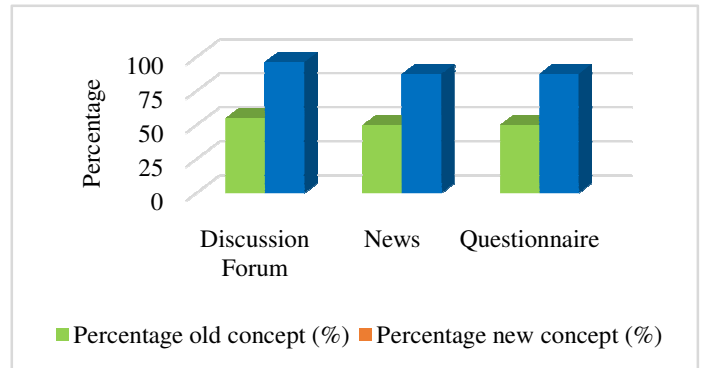


Fig 6. Comparison old system and new system

5. CONCLUSION AND FUTURE WORK

The forum discussion that was made has answered the existing problems, namely the level of difficulty of students in seeking information in preparing the final assignment. So that the existence of this system discussion forum will make it easier for students to find answers to the problems faced. The way in which this web-based system becomes effective is the interaction of all actors. The benefits of being developed by the institution are as a means of quality.

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