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3rd ICETD 2014

28, 29 October 2014, Bandar Lampung, Indonesia

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Bandar Lampung University, Indonesia

In coorporation with :

THE UNIVERSITY OF KITAKYUSHU

3rd ICETD 2014

The Third International Conference On Engineering And Technology Development

28 -29 October2014
Bandar Lampung University (UBL)
Lampung, Indonesia

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PREFACE

The Activities of the International Conference is in line and very appropriate with the vision and mission of Bandar Lampung University (UBL) to promote training and education as well as research in these areas.

On behalf of the Second International Conference on Engineering and Technology Development (3rd ICETD 2014) organizing committee, we are very pleased with the very good response especially from the keynote speaker and from the participans. It is noteworthy to point out that about 80 technical papers were received for this conference.

The participants of the conference come from many well known universities, among others : University Kebangsaan Malaysia – Malaysia, IEEE – Indonesia, Institut Teknologi sepuluh November – Indonesia, Surya Institute – Indonesia, International Islamic University – Malaysia, STMIK Mitra Lampung – lampung, Bandung Institut of Technology – Bandung, Lecture of The Malahayati University, B2TP – BPPT Researcher – lampung, University of Kitakyushu – Japan, Gadjah Mada University – Indonesia, Universitas Malahayati – Lampung, Lampung University – lampung,

I would like to express my deepest gratitude to the International Advisory Board members, sponsor and also to all keynote speakers and all participants. I am also gratefull to all organizing committee and all of the reviewers who contribute to the high standard of the conference. Also I would like to express my deepest gratitude to the Rector of Bandar Lampung University (UBL) who give us endless support to these activities, so that the conference can be administrated on time

Bandar Lampung, 22 October 2014

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Implementation Of Workflow Management System On E-Learning Platform for The Effectiveness of Distance Learning

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Bandar Lampung of University

Abstract - **This sresearch aims to develop an e-learning as a kind of learning systems using Internet media, e-learning using information technology as a tool that can be available wherever it is needed. One of the e-learning development techniques to become more efficient is by applying workflow management system (WFMS) in developing e-learning. Because WFMS focuses on business processes, it is concerned with the automation of procedures so that the information and tasks assigned to run a more efficient and coordinatedapplication-based e-Learning open source workflow can be applied in all educational institutions, because e-learning can follow the learning procedures that exist in the educational institutions.**

keyword— e-*Learning*,*Workflow*,WFMS

1. INTRODUCTIONS

Nowadays e-learning has been widely used in the world also in Indonesia, as evidenced by the rise of e-learning implementation in educational institutions (schools, training and universities) and industry. E-Learning is a type of learning system that allows tersampaikannya teaching materials to students using the Internet media. Intranet or another computer network media. E-Learning is a learning process using Information and Communication Technology (ICT) as a tool that can be available whenever and wherever needed, so as to overcome the constraints of space and time (Jianming, 2004).

E-learning is seen as a future application worldwide because it promotes lifelong learning by enabling learners to learn anytime, anywhere and on the speed of learning (LA Macaulay, 2004*)*. In the e-learning environment, there is a level of interaction and collaboration among other students and also learning from the range of individual learning leading to collaborative learning. (Phillips, V., 1998).

Implementation of e-Learning to further improve the efficiency and effectiveness of learning is undoubtedly true, but the implementation of e-learning is sometimes not followed by the business process and procedures that exist in the environment of the educational institutions

In the conventional learning processes, procedures and business processes are supervised and controlled by a unit that handles academic activities. In a university environment are heads of study programs that control procedures in learning, there is a school homeroom guide the way of teaching and learning in accordance with the procedure, but in electronic learning environments and distance learning there is no mechanism or system which automatically controls and guides so that learning can be run in accordance with the business processes and procedures.

The above problem we get with preresearch we did in the Faculty of Computer Science University of Bandar Lampung, object of our study using e-learning as a medium for supporting teaching and learning activities, distributing questionnaires which we did on the faculty and students, the result is as much as 75% of lecturers stated the implementation of e-learning is still not effective, and the lack of good supervision of the implementation of the learning process in e-learning, because the interaction between faculty and students is confined to the task of gathering activities, and the provision of learning materials.

Problems also occur in students, as many as 68% of the students expressed less effective e-learning, this is due to the function of e-learning can not run in step with the learning activities in the classroom. Students received material from the e-learning without the supervision of lecturers, and the feed back from the task that is sent, the absence of notification to complete the task ineffectiveness of e-learning systems that exist.

One of the e-learning approaches are more efficient approaches namely through the coordination of business processes workflow management system (WFMS). Because according to Luiz (2008) WFMS focuses on addressing business processes, it is concerned with the automation of procedures so that the information and tasks assigned to run a more efficient and coordinated.

In addition, WFMS will be more effective and efficient if supported by the application notification either via sms or e-mail in terms of information delivery. Due to the presence of the notification in the process of teaching and teaching bell can improve more effective coordination andcan

find out if the WFMS an activity in accordance with the applicable procedures or not (Weiping & Yushun, 2009).
In addition to increasing collaboration between students and faculty, WFMS allows to perform data processing tasks students. With effective elearning platform with converged elearning environments with workflow mechanism (Yong, 2004).

2. LITERATUR REVIEW

Workflow is defined differently by an institution called Workflow Management Coalition (WfMC) in the glossary The issuance in 1999.Workflow defined as "business process automation, in every era, or in part, in which documents, information or tasks are passed from satupeserta another for action, according to a set of procedural rules "(WfMC, 1999, p. 8).

Top of the quote, it can be translated that the workflow is an automation process covering the business and immunizations, in whole or in some parts of the course, which lasted for documents, information or orders passed (processed) by the rules or procedures.

While the Workflow Management System is a system that can define, create, organize workflow of a software usability, run one or more of the workflow, which can interpret a process, interacting with the user workflow, and when in need combine the benefits of applications and devices Information technology. (WfMC, 1999, p. 9).

As learning technology and its associated fields continue to evolve, practitioners and researchers have yet to agree on common definitions and terminologies (
Lowenthal & Wilson, 2010; Volery & Lord,
2000).

Distance education is the most renowned descriptor used when referencing distance learning. It often describes the effort of providing access to learning for those who are geographically distant. During the last two decades, the relevant literature shows that various authors and researchers use inconsistent definitions of distance education and distance learning. As computers became involved in the delivery of education, a proposed definition identified the delivery of instructional materials, using both print and electronic media (Moore, 1990)

e-Learning as strictly being accessible using technological tools that are either web-based,
web-distributed, or web-capable. The belief that e-Learning not only covers content and instructional methods delivered via CD-ROM, the Internet or an Intranet, Nichols (2003)

3. RESEARCH METHOD

the research that is the subject of research is the student of bandar lampung university comprising of 2011 to 2009:

Total population of Bandar Lampung University Students

No	Years	Total Computer Student
1	2011	57
2	2012	64
3	2013	130

Total Population 251
Source : Printout Simperti UBL

a. Sample

Stratified random sampling is a method of sample selection in the manner of dividing the population into homogeneous groups called strata, and then samples were taken randomly from each stratum. If the members of the population is not homogeneous, but can be grouped into groups of relatively homogeneous, then the process of sampling with simple random method will lead to ambiguous, because the existing heterogeneity in members of the population will affect the information obtained from the observed variables, the following is a procedure using a stratified random sample

Some formulas for determining the number of samples, among others, using the formula of Slovin, Riduwan (2005: 65)

$$n = \frac{N}{1 + (N * d^2)}$$

n = Sample;
N = population;
d = presision value 95% or sig. = 0,05.

like :
N = Populastion 251
d = presision value 95% or sig. = 0,05.
then :

$$n = \frac{N}{1 + (N * d^2)}$$

$$n = \frac{251}{1 + (251 * (0.05)^2)}$$

$$n = \frac{251}{1 + (251 * 0.025)}$$

$$n = \frac{251}{1 + 6,275}$$

$$n = \frac{251}{7,275}$$

n = 34,5

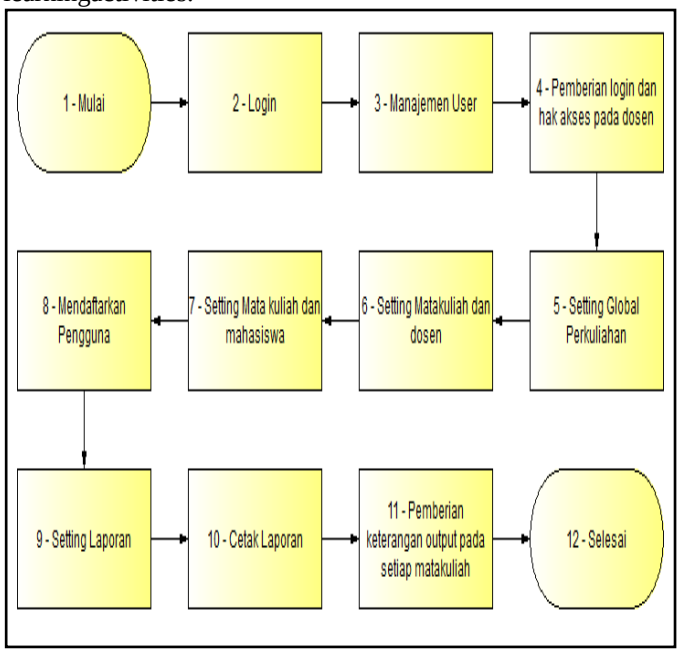
so sample is **35**

4. Result and Discussion

a. Workflow Design

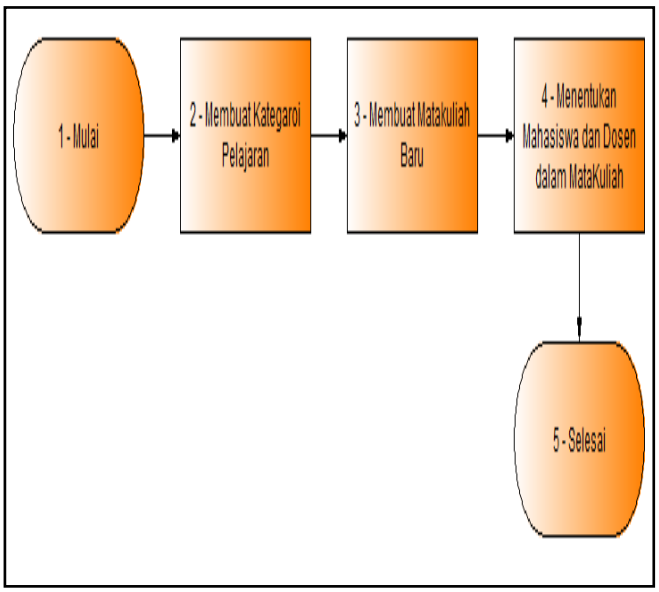
b. Workflow Admin e-Learning

The first is the design of workflow design from the admin or the person in charge of managing e-Learning, user management, classroom management, as well as a variety of application settings that will be used in the teaching and learningactivities.



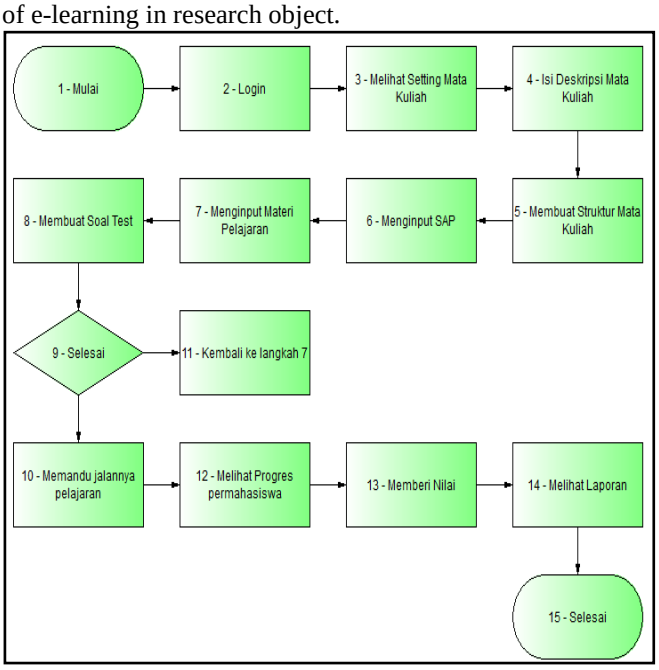
c. Workflow Admin Setting New Course

The chart below is an extension of the main workflow step number 6 is setting courses and lecturers,



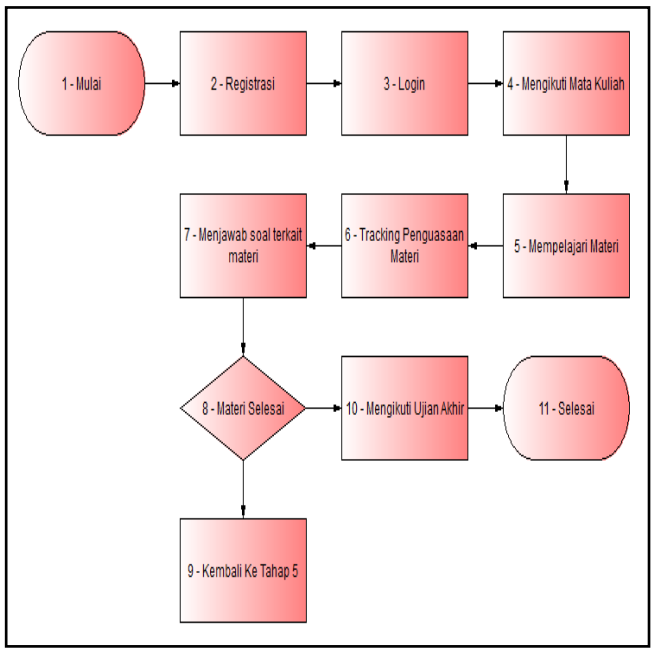
d. Lecture Workflow

Here is a workflow design lecturer in the implementation of e-learning in research object.



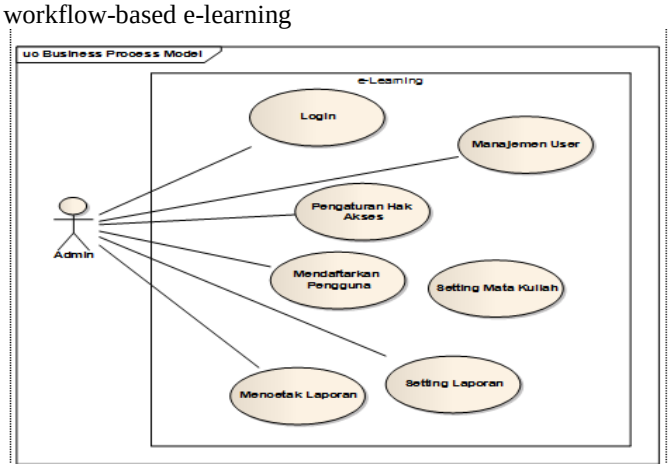
e. Student Workflow Design

Here is the design of workflow that exist in students:

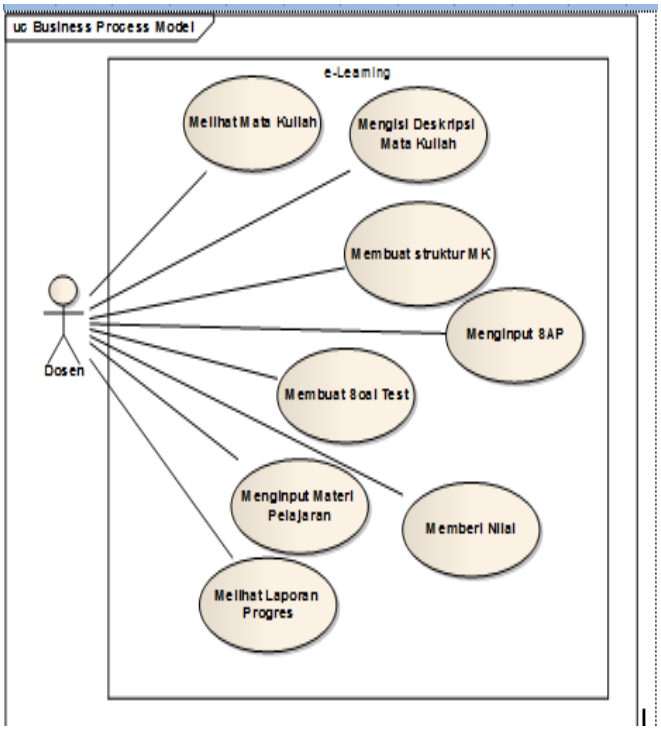


f. Use Case Design

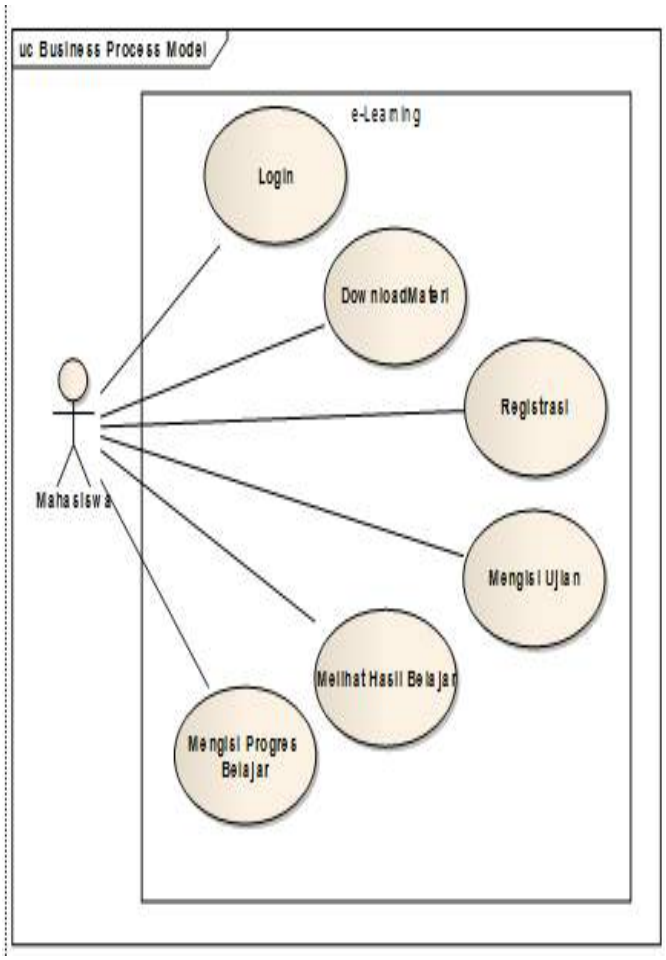
use case above represents the admin activities in a workflow-based e-learning



use case above represents the lecture activities in a workflow-based e-learning.

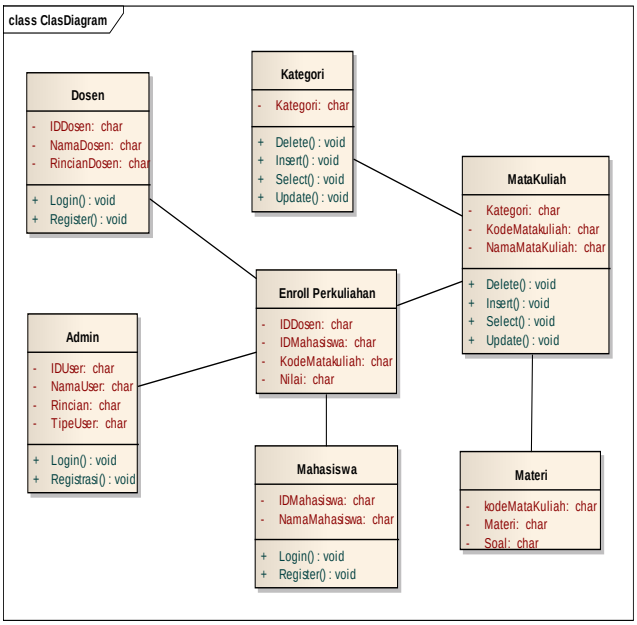


use case above represents the studenta ctivities in a workflow-based e-learning.

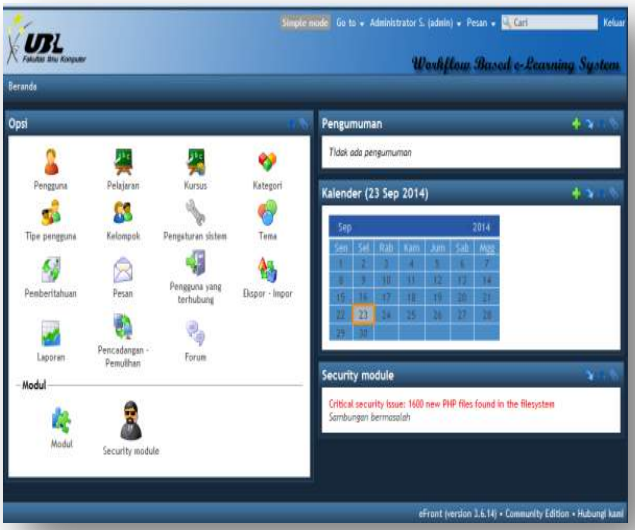


g. Class Diagram Design

The above chart is a class diagram of the e learning system



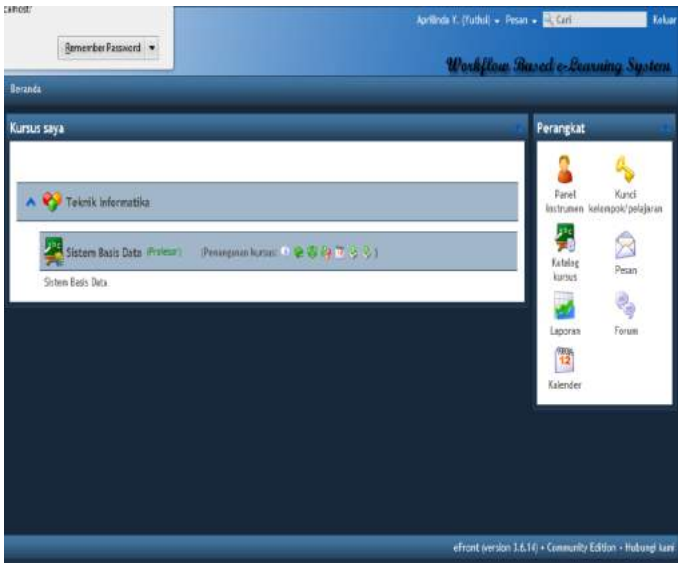
5. Interface of Menu Admin



Menu Admin
In the admin menu, there are several activities to do, the first activity courses and lecturers settings contained in the menu the following menu:

a. Lecture Menu

In the menu there are several steps that lecturers in doing is setting the content as well as a test to run an e-learning



b. Result

According to a study made in the above, the application of e-learning to maximize the use of workflow concepts of e-learning. Implementation of e-Learning to improve both efficiency and effectiveness of learning, e-learning with business processes and dibaregi existing procedures in the environment as educational institutions, can improve the efficiency and effectiveness of the use of e-learning.

c. Sugest

In this study the next stage of the notification, so that the implementation of e-learning in conjunction with the procedural will be maximized by the use of the notification in the form of an email, in addition to the next stage is the implementation of e-learning that is in use by students so that further enhance the efficiency and effectiveness of e learning.

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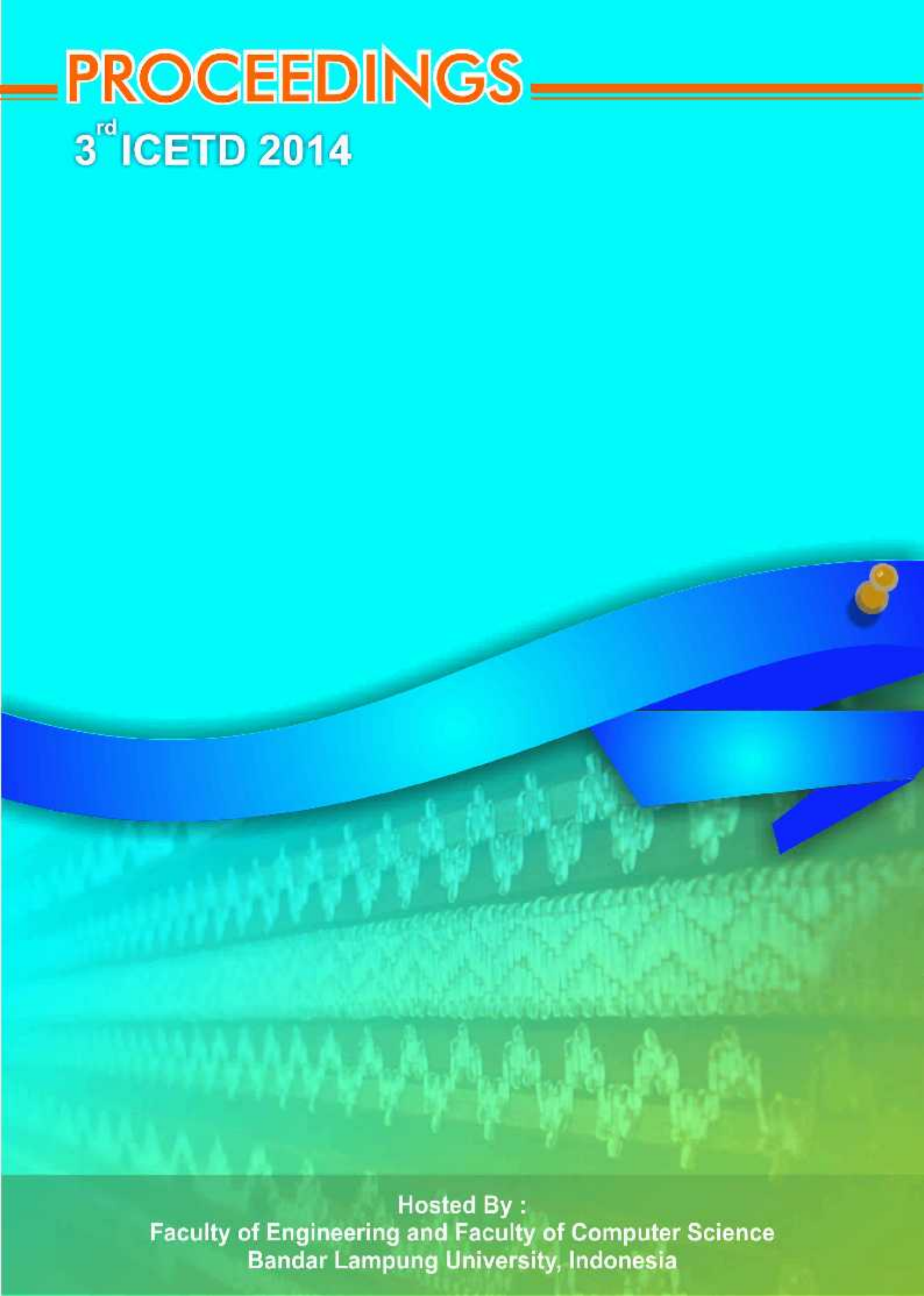

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