PROCEEDINGS

International Conference on Engineering and Technology Development

3rd ICETD 2014

28, 29 October 2014, Bandar Lampung, Indonesia

Hosted By:
Faculty of Engineering and Faculty of Computer Science
Bandar Lampung University, Indonesia
3rd ICETD 2014

The Third International Conference
On Engineering And Technology Development

28-29 October 2014
Bandar Lampung University (UBL)
Lampung, Indonesia

PROCEEDINGS

Organized by:

Faculty of Computer Science and Faculty of Engineering
Bandar Lampung University (UBL)
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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 participants. 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 grateful 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

Mustofa Usman, Ph.D
3rd ICETD Chairman
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Sugimin
<table>
<thead>
<tr>
<th>No</th>
<th>Title</th>
<th>Author</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The Influence Of Implementing Information Technology On Knowledge Management Toward Performance Evaluation Using Balanced Scorecard</td>
<td>Sarjito Surya</td>
<td>1-3</td>
</tr>
<tr>
<td>2</td>
<td>Implementation Of Customer Relationship Management (Crm) To Automate Logging Track Record Students And Alumni</td>
<td>Robby Yuli Endra #1, Fenti Aryani #2, Septiany Dian Puspita #3, Ade Kurniawan #4</td>
<td>4-10</td>
</tr>
<tr>
<td>3</td>
<td>Prototype Model Classification System Level Internal Audit Findings Based On Case-Based Reasoning In Education Quality Management</td>
<td>Marzuki #1, Maria Shusanti Febriani #2</td>
<td>11-13</td>
</tr>
<tr>
<td>4</td>
<td>Implementation Case Based Reasoning In Determining The Rational Prescription Of Tb Drugs</td>
<td>Ahmad Cucus</td>
<td>14-19</td>
</tr>
<tr>
<td>5</td>
<td>Implementation Of Workflow Management System On E-Learning Platform For The Effectiveness Of Distance Learning</td>
<td>Yuthsi Aprilinda #1, Agus Sukoco #2, Ahmad Cucus #3</td>
<td>20-25</td>
</tr>
<tr>
<td>6</td>
<td>Thermal Bioclimate For Tourism: Case Study Of Kuta, Bali Province, Indonesia</td>
<td>Nyoman Sugiartha #1, Andreas Matzarakis #2</td>
<td>26-32</td>
</tr>
<tr>
<td>7</td>
<td>Minimum System Design Of Android Based Pstn Phone</td>
<td>Deo Kiatama #1, Fransiscus Ati Halim #2, Arnold Aribowo #3</td>
<td>33-38</td>
</tr>
<tr>
<td>8</td>
<td>The Design Of Pressing Equipment For Banana Fruit</td>
<td>M.C. Tri Atmodjo</td>
<td>39-44</td>
</tr>
<tr>
<td>9</td>
<td>Modelling Supply Chain Management In B2b E-Commerce Systems</td>
<td>Idris Asmuni</td>
<td>45-51</td>
</tr>
<tr>
<td>10</td>
<td>Extreme Programming Study Method Case Study On Designing Of Accounting Term Dictionary</td>
<td>Usman Ependi #1, Qoriani Widayati #2</td>
<td>52-55</td>
</tr>
<tr>
<td>11</td>
<td>Review On Economic Valuation Of Solid Waste Management In Bandar Lampung, Lampung</td>
<td>Ing Lukman #1, Diah Ayu Wulandari Sulistyaningrum #2, Taqwan Thamrin #3</td>
<td>56-57</td>
</tr>
<tr>
<td>No</td>
<td>Title</td>
<td>Author</td>
<td>Page</td>
</tr>
<tr>
<td>----</td>
<td>-----------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>12</td>
<td>Prototype Topology Sdn For Simple Network Campus</td>
<td>Arnesyulivandika</td>
<td>58-61</td>
</tr>
<tr>
<td>13</td>
<td>Tsunami Force On A Building With Sea Wall</td>
<td>Any Nurhasanah\textsuperscript{1}</td>
<td>62-64</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nizam \textsuperscript{2}</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Radianta Triatmadja\textsuperscript{3}</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Analysis The Quality Of Website Service Information System Academic Integrated ( Siater ) Bandar Lampung University Using Pieces Methods</td>
<td>Yusinta Ria Disanda</td>
<td>65-71</td>
</tr>
<tr>
<td>15</td>
<td>Organize Bad Manual Financial Database Of Educational Organization By Bank To Decrease Financial Criminalize</td>
<td>Ruri Koesliandana\textsuperscript{1}</td>
<td>72-74</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Eka Imama Novita Sari\textsuperscript{2}</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Arnes Yuli Vandika\textsuperscript{3}</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Design Of Lampung Bay Waterfront Using Poetic Architecture Approach</td>
<td>Shofia Islamia Ishar, S.T., M.T.</td>
<td>75-83</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Muhammad Syahroni, S.T.</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Analysis Limiting Internet Sites With The Method Using Squid Proxy Server At Smkn I South Rawajitu</td>
<td>Reni Tri Astuti</td>
<td>83-88</td>
</tr>
<tr>
<td>18</td>
<td>Effect Of Grading On Differences Using Mixed Concrete Aggregate Rough And Fine Aggregate Concrete Compressive Strength Of Natural</td>
<td>Yulfriwini</td>
<td>89-97</td>
</tr>
<tr>
<td>19</td>
<td>Analysis Quality Dino Tour Travel Management Website Using Webqual 4.0</td>
<td>Rola Hengki</td>
<td>98-105</td>
</tr>
<tr>
<td>20</td>
<td>Holonic Manufacturing System: Current Development And Future Applications</td>
<td>Moses Laksono Singgih</td>
<td>106-113</td>
</tr>
<tr>
<td>21</td>
<td>An Analysis Perspective Implemented Text Mining Analytics Information Extraction For Impact Of Indonesian Social Media</td>
<td>Agus Suryana.Mti\textsuperscript{1}</td>
<td>114-123</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sri Ipnuwati.M.Kom\textsuperscript{2}</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Study Of Gold Mine Tailings Utilization As Fine Aggregate Material For Producing Shotcrete Based On Concept Of Green Technology</td>
<td>Lilies Widojoko\textsuperscript{(1)}</td>
<td>124-133</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Harianto</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hardjasaputra\textsuperscript{(2)}</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Susilowati\textsuperscript{(3)}</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>Title</td>
<td>Author</td>
<td>Page</td>
</tr>
<tr>
<td>----</td>
<td>----------------------------------------------------------------------</td>
<td>--------------------------------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>23</td>
<td>Decision Support System For Determined Recomendations Lecturer Teaching Handbook Using Fuzzy</td>
<td>Usman Rizal #1, Fenti Aryani #2</td>
<td>134-140</td>
</tr>
<tr>
<td>24</td>
<td>The Expert System Software Application On Lecture Scheduling Based On Rule Based Reasoning</td>
<td>Taqwan Thamrin #1, Ahmad Cucus #2, Adi Wijaya #3</td>
<td>141-144</td>
</tr>
<tr>
<td>25</td>
<td>Portal Website Analysis Using Iso / Iec 9126-4 Metric Effectiveness (Case Study Indonesia Wi-Fi Portal Website)</td>
<td>Refky Jumrotuhuda</td>
<td>145-149</td>
</tr>
<tr>
<td>26</td>
<td>Student Satisfaction Analysis Of Siater Using End User Computing Statisfaction (Eucs)</td>
<td>Erlangga, Jefri Krisna Putra</td>
<td>150-155</td>
</tr>
<tr>
<td>27</td>
<td>Urban Tourism Development Through Low Impact Development (Lid) Towards Green-Tourism</td>
<td>*Ir. Wiwik Setyaningsih, Mt. *2tri Yuni Iswati, St., Mt. *2sri Yuliani, St., M.App.Sc.</td>
<td>156-161</td>
</tr>
<tr>
<td>28</td>
<td>Hawkers Empowerment Strategy To Promote Sustainable Economy In Surakarta</td>
<td>Murtantijanirahayu Rufiaandisetyanaputri</td>
<td>162-172</td>
</tr>
<tr>
<td>29</td>
<td>New Urbanism: A Comparative Analysis Between Traditional Village And Housing Estate</td>
<td>Bhakti Alamsyah</td>
<td>173-179</td>
</tr>
<tr>
<td>30</td>
<td>Traditional Market Revitalization As An Urban Catalyst In The City Of Surakarta</td>
<td>Istijabatul Aliyah #1, Bambang Setioko #2, Wisnu Pradoto #3</td>
<td>180-188</td>
</tr>
<tr>
<td>31</td>
<td>The Robinson Mall Impact On FV And DS In Zapa Street, Bandar Lampung City</td>
<td>Ida Bagus Ilham Malik Ilyas Sadad</td>
<td>189-195</td>
</tr>
<tr>
<td>32</td>
<td>Decision Support System For Mall Nutrition Using Simple Additive Weighting (Saw) Method</td>
<td>Reni Nursyanti Mujiasih</td>
<td>196-200</td>
</tr>
<tr>
<td>33</td>
<td>Effect Of Cement Composition In Lampung On Concrete Strength</td>
<td>Heri Riyanto</td>
<td>201 – 204</td>
</tr>
<tr>
<td>No</td>
<td>Title</td>
<td>Author</td>
<td>Page</td>
</tr>
<tr>
<td>----</td>
<td>----------------------------------------------------------------------</td>
<td>-------------------------------------------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>34</td>
<td>E-Archive digital storage media</td>
<td>Arnes yuli vandika, ade kurniawan, ari kurniawan</td>
<td>205 - 207</td>
</tr>
<tr>
<td>35</td>
<td>Virtualization Technology for Optimizing Server Resource Usage</td>
<td>Edwar Ali, Didik Sudyana</td>
<td>208 – 212</td>
</tr>
<tr>
<td>36</td>
<td>Decision Support System (DSS) For The Determination Of Percentage Of Scholarship Quantity Based Fuzzy Tahani</td>
<td>Robby Yuli Endra #1, Agus Sukoco #2</td>
<td>213 - 223</td>
</tr>
<tr>
<td>37</td>
<td>Evaluation of Pedestrian Way’s Comfort Case Study: Jl. Z. A. Pagar Alam, Bandar Lampung</td>
<td>Haris Murwadi I*, Fritz Akhmad Nuzir 2</td>
<td>224 - 228</td>
</tr>
<tr>
<td>38</td>
<td>Modification Effect Of Volume Cylinder Four Stroke Engine To Effective Power</td>
<td>Ir. Najamudin, MT</td>
<td>229-239</td>
</tr>
<tr>
<td>39</td>
<td>Impact Of Motor Vehicle Emissions On Air Quality In Urban And Sub Urban Area (Case Study: Bandarlampung City)</td>
<td>Ir. A. Ikhsan Karim, MT., Ir. Sugito, MT</td>
<td>240-249</td>
</tr>
</tbody>
</table>
Implementation Of Workflow Management System On E-Learning Platform for The Effectiveness of Distance Learning

Yuthsi Aprilinda¹, Agus Sukoco², Ahmad Cucu³
Faculty of computer Science
Bandar Lampung of University

Abstract - This research 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 coordinated application-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 prerequisite 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 cannot run in step with the learning activities in the classroom. Students received material from the e-learning without the supervision of lecturers, and the feedback that the task 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 e-learning platform with converged e-learning 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 satu peserta another for action, according to a set of procedural rules "(WIMC, 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. (WIMC, 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

<table>
<thead>
<tr>
<th>No</th>
<th>Years</th>
<th>Total Computer Student</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2011</td>
<td>57</td>
</tr>
<tr>
<td>2</td>
<td>2012</td>
<td>64</td>
</tr>
<tr>
<td>3</td>
<td>2013</td>
<td>130</td>
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</tbody>
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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, Ridwan (2005: 65)

\[ n = \frac{N}{1 + (N \times d^2)} \]

\[ n = \text{Sample}; \]
\[ N = \text{population}; \]
\[ d = \text{presision value 95\% or sig.} = 0.05. \]

like :

\[ N = \text{Population 251} \]
\[ d = \text{presision value 95\% or sig.} = 0.05. \]

then :

\[ n = \frac{251}{1 + (251 \times 0.05^2)} \]
\[ n = \frac{251}{1 + (251 \times 0.025)} \]
\[ n = \frac{251}{1 + 6.275} \]
\[ n = \frac{251}{7.275} \]
\[ n = 34.5 \]

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 learning activities.

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 student activities 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. Suggest

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.

References


