Real Time Updating System for Dynamic Report

UTP Energy Website Enhancement:

Delivering Real Time Mission Oriented Research Information Reports

By

Fahmi Shairazi Bin Sulaiman

Dissertation submitted in partial fulfilment of
the requirements for the
Bachelor of Technology (Hons)
(Business Information Systems)

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Abstract

The current UTP energy website does provide the information for the user/lecturers to view their current report. The report being made need the approval from the website admin which give impact to the business process and making the users particularly the lecturers not motivate to use the current UTP energy website. The solution demanded at this state is to have the lecturers to have their login ID and given authority to update their own mission oriented report on the fly. The study will consist of how the approach to be implemented and to be deliver as to provide a better solution for the energy website to post their progress report of the mission oriented report so that their subordinate may view each other current progress on the fly without any delay caused by the interference of the website administrator which is the only person who have the authority to publish the report being made by the user/lecturers.

Acknowledgement

Alhamdulillah I bid for granting me the strength and perseverance necessary to complete this project. The past 7 months have indeed been an amazing experience and journey to embark on. I have learnt so many things from scratch until the completion of my own proposed system.

I would like to sincerely thank my one and only supervisor, Mr. Faizal Ahmad Fadzil for the undying help he has given my colleagues and I throughout the whole 2 semester of Final Year Project. He has been very kind in guiding me to complete my project at this rate of completion thus far. Although there were many complications met throughout the whole journey, yet, he managed to guide us patiently with a strong sense of direction in this project. Ideas and suggestions kept pouring endlessly from him and that have indeed helped me a lot in getting a lot of problems solved. Thank you, Mr Faizal for your support and guidance. Only Allah knows how to repay such kindness in equal.

I would also like to take this opportunity to thank my family especially my mother for always being there for me. The warmth of love given has always ensures a high morale confidence and perseverance in completing this project for me. They have been giving me a great deal of encouragement, advices and support which have led me to the completion of my current project today.

Lastly, thanks to my colleagues for the continuous support and guidance, and also to UTP; especially to the CIS and ITMS Department for their patience and opportunities to allow my project to reach greater heights than it can actually be. Alhamdulillah again and may prayers be with all of you.

Thank you

CERTIFICATION OF APPROVAL

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A project dissertation submitted to the

Business Information System Programme

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in partial fulfilment of the requirement for the

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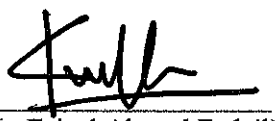
Approved by,



(Mr. Faizal Ahmad Fadzil)

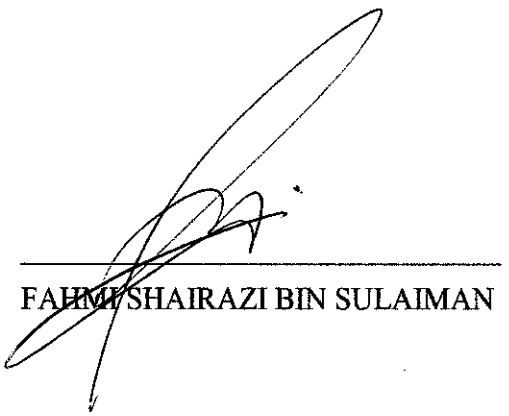
UNIVERSITI TEKNOLOGI PETRONAS

TRONOH, PERAK

September 2011

CERTIFICATION OF ORIGINALITY

This is to certify that I am responsible for the work submitted in this project, that the original work is my own except as specified in the references and acknowledgements, and that the original work contained herein have not been undertaken or done by unspecified sources or persons.



FAHMI SHAIRAZI BIN SULAIMAN

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CHAPTER 1
INTRODUCTION

1.1 Background

Recent technology had improved day by day, so does the website and portal which have been the main source of information for the person who crave and demand for them. Most of the time, business people require the information to be fast, accurate and reliable. The current business process in the UTP energy website provided the source of information to the lecturers as well as the people who may want to view the information in the energy website. The main concern for the research I to enhance the current UTP energy website in order to provide a better solutions for the lecturers to update their mission oriented report and yet to be publish at the click of the refresh button. This literally helps the lecturers and the participants in the energy website to update their subordinate about their current progress and also maintaining good relationship among the users in the UTP energy website.

A CMS is a collection of scripts that separates content from it presentation. Its main features are the ease of creation and editing of content and dynamic web pages. CMS are usually very sophisticated and can have newsfeed, forums, and online stores and are easily edited. More and more websites nowadays are moving toward a site powered by CMS. Most content management systems are expensive but there are an increasing number of open sources alternatives becoming available. According to Barrie, open source CMS have become increasingly more reliable and are now being used for important projects in many companies, non-for-profits, and organization (Barrie, 2008).

A CMS separates out responsibilities of developing a website. The web designer can concern himself with the design, which means that nontechnical people can be responsible for the content. The modern CMS usually define by its capability to manage and publish content. Most do far more, having the capability to add on a wide range of extensions or add-ons to increase functionality of the site.

The purpose of this paper is to provide solution to the UTP energy website users which to have a real time updating for dynamic report. The functionality requirement by the user was to have their mission oriented report to be updated on the fly. The study will consist of how the approach to be implemented and to be deliver as to provide a better solution for the energy website to post their progress report of the mission oriented report so that their subordinate may view each other current progress on the fly without any delay caused by the interference of the website administrator which the only person who have the authority to publish the report being made by the user/lecturers.

1.2 Problem Statement

Due to technology advances and the wide dissemination of information, many institutions suffer from information overload and need to apply information management to deal with this information chaos in the digital world. Most of the time, this information is stored in computer hardware in a unorganized way, spread in databases, rendering access to relevant knowledge difficult, and compromising employees' productivity on their daily activities. Consequently, many modern enterprises lack a global view of their own data and information.

The current UTP provide solution for the website using the most popular content management system (CMS) which is powered by Joomla! The current website allocates the webpage specifically for the lecturers to post and share their research in the web. The current UTP website does not give authority for the lecturers to edit their research article content regard to mission oriented research. The lecturers find that information are really important for them as they need to get updates from their subordinates about what is going on about their current project status. The administrator for UTP website does not provide the lecturers to update their mission oriented report independently without interference of the ITMS to approve and publish what the lecturer had post in their research article. The current business nature only allows the lecturers to contact the admin of the UTP website in event if they need to update their current projects article and later to be approved by the website administrator. The current nature of business is time consuming and not efficient for the lecturers to update their project research article in the website on the fly. This also will impact on the business perspective as a whole.

Objectives

The objectives of this project are:

- To design and develop a new edit functionality to UTP energy website for the lecturers to update their reports and articles in real time basis.
- To provide solution to the admin and the lecturers so that both party may benefits from the information being publish at user level.
- To determine the successful of the information being shared in the real time without any interference from the administration part.
- To compare and benchmark the studies of this project with the current UTP energy website.
- To increase awareness among the lecturers and the team members regard to their respective research team about the latest update in the UTP energy website on mission oriented research (MOR) report.
- To provide the ease of usability for the team members to update the mission oriented research (MOR) report anytime, anywhere by having the authority to update on the fly.
- To increase efficiency of the updates by having the mission oriented research (MOR) report updates on the fly.

1.3 Scope of Study

This research covers only the UTP energy website which requires an enhancement for putting new functionalities to the current website. The edit button functionality is the main concern as the lecturers requires such idea for them to update their research report and they wish to see it being posted after they save their reports. This mini enhancement may look small but in business impact point of view, this enhancement will definitely change the current user's behavior as they can post their report in real time by simple click instruction and the report is generated and updated in the energy website. The reports being made are really important among the participants in the UTP energy website as the information is 'KING'. Real time updating for dynamic report is a new approach for the UTP energy website users as they may have the authority to publish their work and report without waiting the admin to approve their report before being publish in the energy website.

A content management system (CMS) tools such as Joomla! and Xampp, a localhost network will be installed for energy website setup. Website simulations will be shown for the purpose of testing and to investigate alternative design solutions for the UTP energy website. Outcomes of the simulation testing will be evaluated, tested, validated and benchmarked against similar results in the current UTP energy website.

CHAPTER 2
LITERATURE REVIEW

2.1 Different Types of Portals

There are two ways of classifying portals: one related to their environment (public or corporate) and another one related to their functions (decision support and/or collaborative processing). Since the concern of this literature review is the enhancement for the UTP energy corporate website/portal, the functional classification will take into account only the corporate environment.

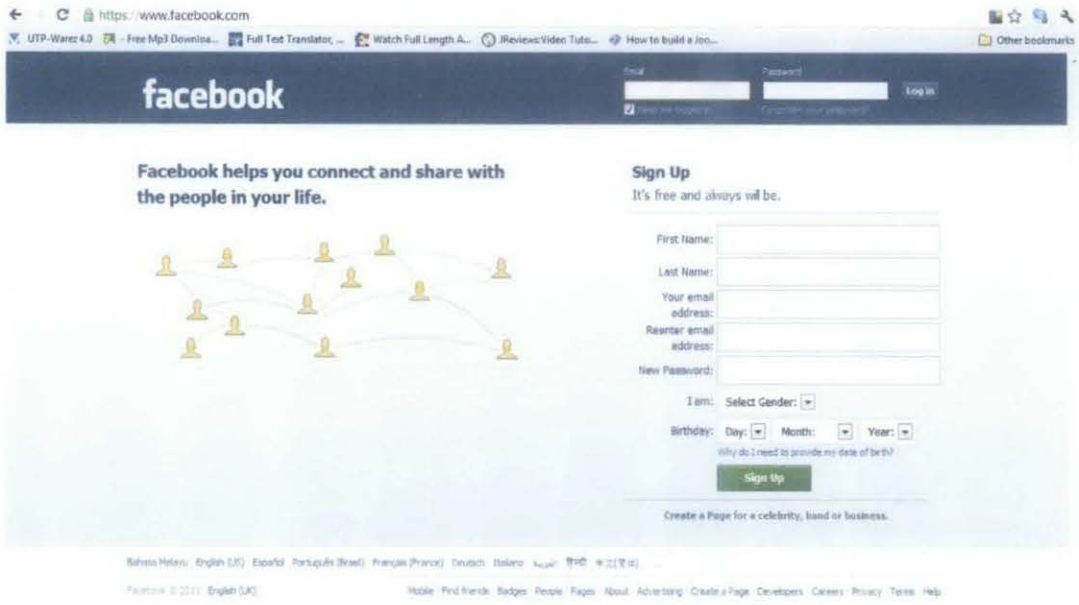
Portal environments

Despite technological similarities, public and corporate portals have completely different purposes for different users.

2.1.1 Public Portal

The public portal, also called Internet portal, web portal or consumer portal, provides a single interface to the immense network of Internet servers. Its purpose is to attract the Internet community. The larger the number of visitors, the greater the probability of establishing virtual consumer groups that will potentially buy what portal advertisers want to sell. Similar to television, radio and the press, the public portal establishes a unidirectional relationship with its visitors and has become a new marketing media.

According to Eckerson (1999c), since the middle 1990s, public portals have experienced three different stages of evolution, referential, personalized and interactive. The public portal have only administrator to customize the website. The public may only see the website as a visitor and they could not do anything to manipulate the information because the public visitors do not have the authority and permission from the website administrator. Only the admin will do the changes regarding the advertisement for the consumers.



Example 2.1: Public Portal

2.1.2 Corporate Portal

In the institutional world, the websites or portal's purpose is to display and supply business-specific information, in a certain context, helping users of corporate information systems find the information they need to face their competitors (Reynolds & Koulopoulos, 1999). The corporate portal is considered by Reynolds and Koulopoulos an evolution from Intranets, incorporating, to this technology, new tools that enable identification, capture, storage, retrieval and distribution of great amounts of information from multiple internal and external sources, useful for enterprise individuals and teams. Corporate portals have also followed the same evolutionary stages experienced by public portals, though in a shorter period of time. Eckerson (1999c) identifies four generations of corporate portals and considers that, in 1999, the corporate portals available on the market jumped from the first to the third generation. Moreover, Eckerson believes that corporate portals have a potential to extend beyond the capabilities offered by public portals.

The corporate portal differs raging from the functionalities of the website to the users and the presentation of the websites. The corporate portal like UTP energy website does have the similar presentation as the other corporate website in the internet. The corporate portal may have the admin who can login to the page and have the authority to manipulate the information inside the corporate portal. The users today prefer a new enhancement to the current corporate website which they can login as well as to update their article in the website. With that, all the team members can share their current project and this will have a great business impact to the organization.

Example 2.2: Corporate Portal

2.2 Content Management System (CMS)

Content management is a various types of information, or content, are available across the Internet. This content requires organization through several different means, depending on its type. Controlling this information in an orderly fashion is known as content management. Also known as CM, content management includes any technologies, techniques, and processes that a company may require maintaining their content. Such systems may include publishing platforms, collection support, file publishing and sharing, and many other types of management. Some businesses may develop internal processes for these means. Others may hire specific companies that specialize in managing content, or purchase software to help them manipulate their files. (Barrie, 2008).

Digital content can be much more complex. It may exist in multimedia files, such as video or audio files. (Barrie, 2008). When a business has these types of files to manage, they may require additional technical support and virtual storage space. Usually, a content management system, or CMS, is used to control content management. Not only does such a system vary with the types of content being managed, but also with the needs the business owning the content may have. Some businesses may only have one or two employees requiring access to the content. This situation may only require simple content management tools.

Other businesses may need multiple workers to edit or view their content. These companies might need more complex content management systems to keep their information organized. If this occurs, training for the system is usually required for employees as well. Systems for managing content may also provide other tools for companies. In addition to publishing, editing, and storing, some systems allow for collaboration between employees. This can be helpful when employees are remote or do not all work at the same location. Tasks can often be assigned through a content management system as well. Many businesses prefer a content management system that allows for either archiving or deleting old content that is no longer in use to save space and revenue.(Barrie, 2008).

When using this type of system, several roles are usually allowed. A creator is provided with the tools to create new content and make changes to it, while an editor can make changes as well and may have a slightly different set of tools available. The publisher may be responsible for preparing content for public viewing, while an administrator oversees the whole process and grants permissions for task and tool access. Other employees may be granted viewer or guest access in order to view, but not change, documents.

CHAPTER 3
METHODOLOGY

3.1 Research Methodology

The preferred research methodology as for this project will be the usage of Rapid Application Development method also known as (RAD). This project will require a lot of requirement before being integrate into a system therefore making prototyping as the best mean of research methodology for this research. This is due to the nature of this methodology for such a short period of time. Below is the research methodology's diagram for further understanding:

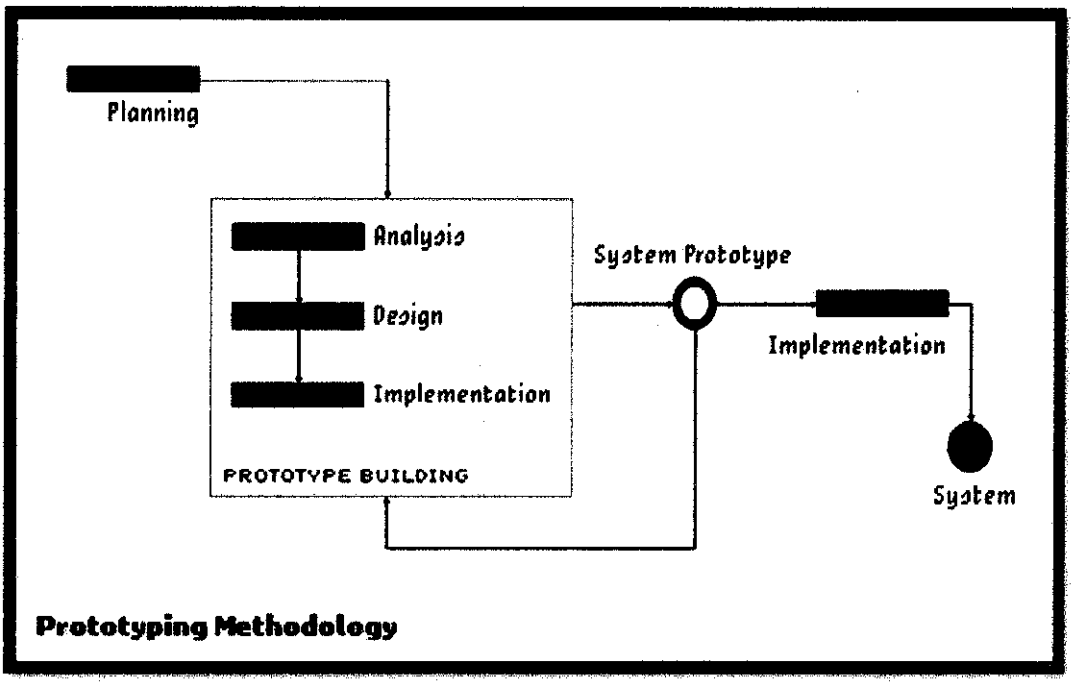


Figure 1.3 Research Methodology: Prototyping

This methodology was chosen best due to the need for rapid program development. This project has about 31 weeks for total completion with a lot of to be explored. The main projected activities that will be carried out require a lot of trial and errors. Therefore having a prototype will allow changes to be made to the whole system before it can be finally implemented successfully into a working system.

In the planning stage, this project aims to understand the system in general terms. Most of the analyses involved in planning are in getting the timeline right as well as to compare the current work to the previous work. Planning is how the project will manipulate its limited resources to full use upon completion of the project [8].

Initial analysis will see further as to the items necessary for the implantation of the system in general. Note that currently, there will be a certain text pre-processing models which will be tested out in order to achieve the objective. Hence, in the initial analysis phase, the project will lay down its entire possible completion route and will be documented for further references. Based on this project, the initial analysis phase and planning have both been completed based on the Gantt chart attached in the appendix section. Furthermore, FYP1 only requires for the project to be completed up until this phase. The prototyping phase will be conducted intensely in FYP2 later on in September.

During the final stage of this methodology, project will modify the system and tune it to its best condition before presenting it as a system to the shareholders later on in FYP2. However, due to the time and financial constraints presented, the quality of the system might not be at its best but certainly possible for completion.

Data gathering

The survey had been done to 40 users of current UTP MOR website. The current active members in the UTP MOR particularly in energy mission oriented website. Out of 40 users, 38 agreed with the proposed system as they require the edit capability for them to edit their article in UTP MOR energy websites. Most of the user needs this due to the lack of competency of the IT admin who always delay or deliver late in publishing the information in the UTP MOR. The users/lecturers need the current result/report regarding to their research they have involved in so that they can be more alert with new updates of current findings/result in the article or team members report regard to respective research team members itself.

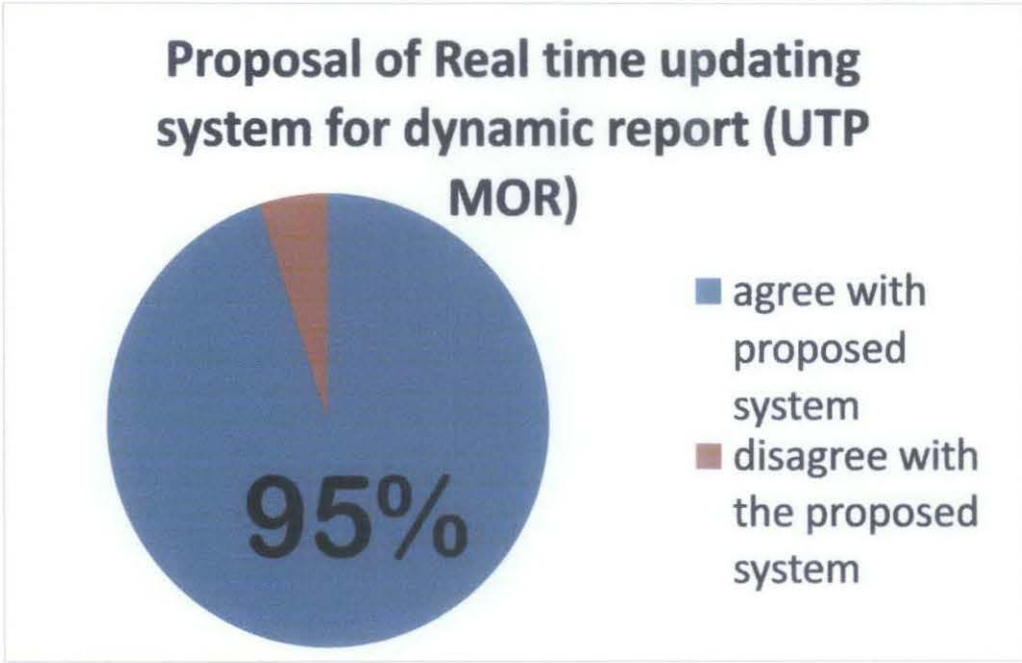


Figure 1.3 Research Methodology: Prototyping

3.1.1 Phase 1: Critical Review of Related Works

The project is initiated with a detailed background study on the website analysis regard to content management system (CMS) open source. The functional requirement for the edit button is the main concern as to provide the user of UTP energy website the authority to click edit and writing their mission oriented report, customizing the report and share them once they finish editing their own reports.

3.1.2 Phase 2: CMS Setup

Preparation for setup includes identifying and planning on the feasibility and procurement of tools and parts to design the optimization mechanism. Installation of the Joomla! CMS, Apache server localhost, mySQL, and PhpmyAdmin are required to run the simulations. Modeling and analysis tools will be used to improve the viability of the proposed system. This phase completes when a Joomla! CMS model is built to support the development of an optimization user requirement in the next phase.

3.1.3 Phase 3: Design and Development of Functionality Website

In this phase, the user's article content can be edit by using the new edit function to the users/lecturers who obtain the login authority from the admin. This phase involves the designing and analyzing several new plug-in to be install within the Joomla! CMS at the administration level. The function would give the users the authority to login as the valid user and edit the information. The information edited later to be publish on real time without a need of the admin to for approval. Simulations of the proposed solution will reveal its effectiveness in the new enhanced energy website and demonstrate the relationship between the users/lecturers to edit their articles content on real time.

3.1.4 Phase 4: Evaluation, Testing, and Further Enhancements

Results of the simulations will be evaluated against the current energy website which is currently live in the UTP website. Testing is conducted through simulations from the local host before being live to the UTP server. Repeatation of phase 2 and 3 may be necessary to introduce fixes in the optimization mechanism before the final solution can be released and tested in live environment. Continuous integration and enhancements are applied in phase four. A key outcome of phase 4 would be the dissertation.

CHAPTER 4

RESULTS AND DISCUSSIONS

4.1 Project Planning

No.	Detail	Week												
		1	2	3	4	5	6	7	8	9	10	11	12	13
1	Title Selection / Proposal	■	■											
2	Confirmation of Proposed Title			X										
3	Preparation of Extended Proposal				■	■	■							
4	Extended Proposal Submission						X							
5	Preparation for Proposal Defense							■	■	■				
6	Proposal Defense and Progress Evaluation									X				
7	Preparation of Interim Report										■	■		
8	Interim Report Submission											X		
9	Technical Report												■	■
10	Final Submission													X

Table 4.1: Gantt Chart

4.2 System Architecture

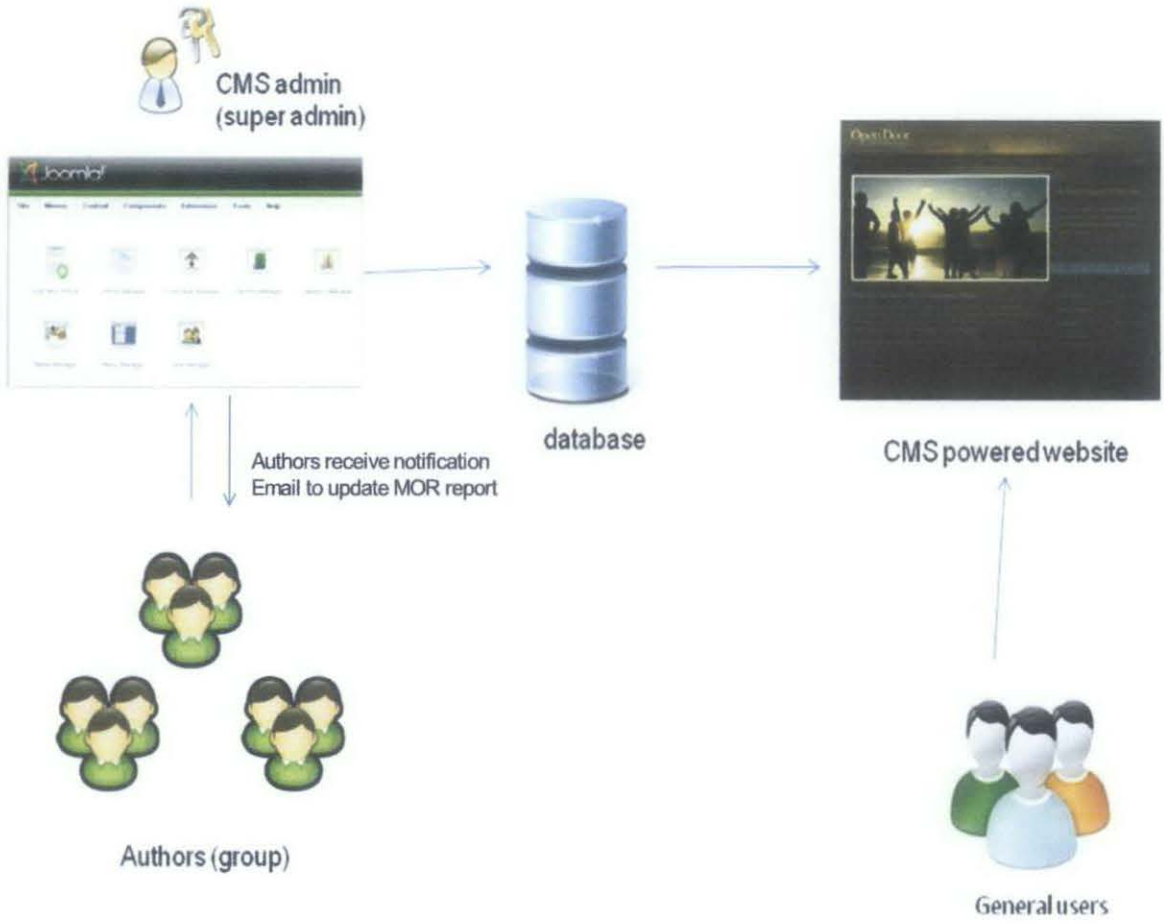


Figure 4.1: System architecture of Real time updating for dynamic report

Figure 4.1: System architecture of Real time updating for dynamic report. From the system architecture, it is understood that the system will be managed by administrator. The administrator will managed the centralized database of the website from the back end of the system, where all relevant information is stored. The other authorized users of the website will need to acknowledge the super administrator. There will be no sign up features for the system, as every authorized user will need to be verified by the administrator. Administrator will register the users and will give them the login and password for the users to login and edit their Mission Oriented Research report (MOR). They will have the authority to manage the information and each users (authors) will be assigning into respective research team and only the team members can update their own Mission Oriented Research report (MOR).

Any misleading on the update part can be traced by the super admin and the admin will know the person in charge for updating the particular report in the Mission Oriented Research report (MOR) articles. The general user can view the articles that being posted or updated but they does not have the authority to manipulate the information as such. In the login area, there will be an edit functionality which enables the users (authors) to update their team Mission Oriented Research report (MOR) and once they complete the update, the users (authors) will need to save the update and later to be posted in the energy website.

4.3 Activity Diagram

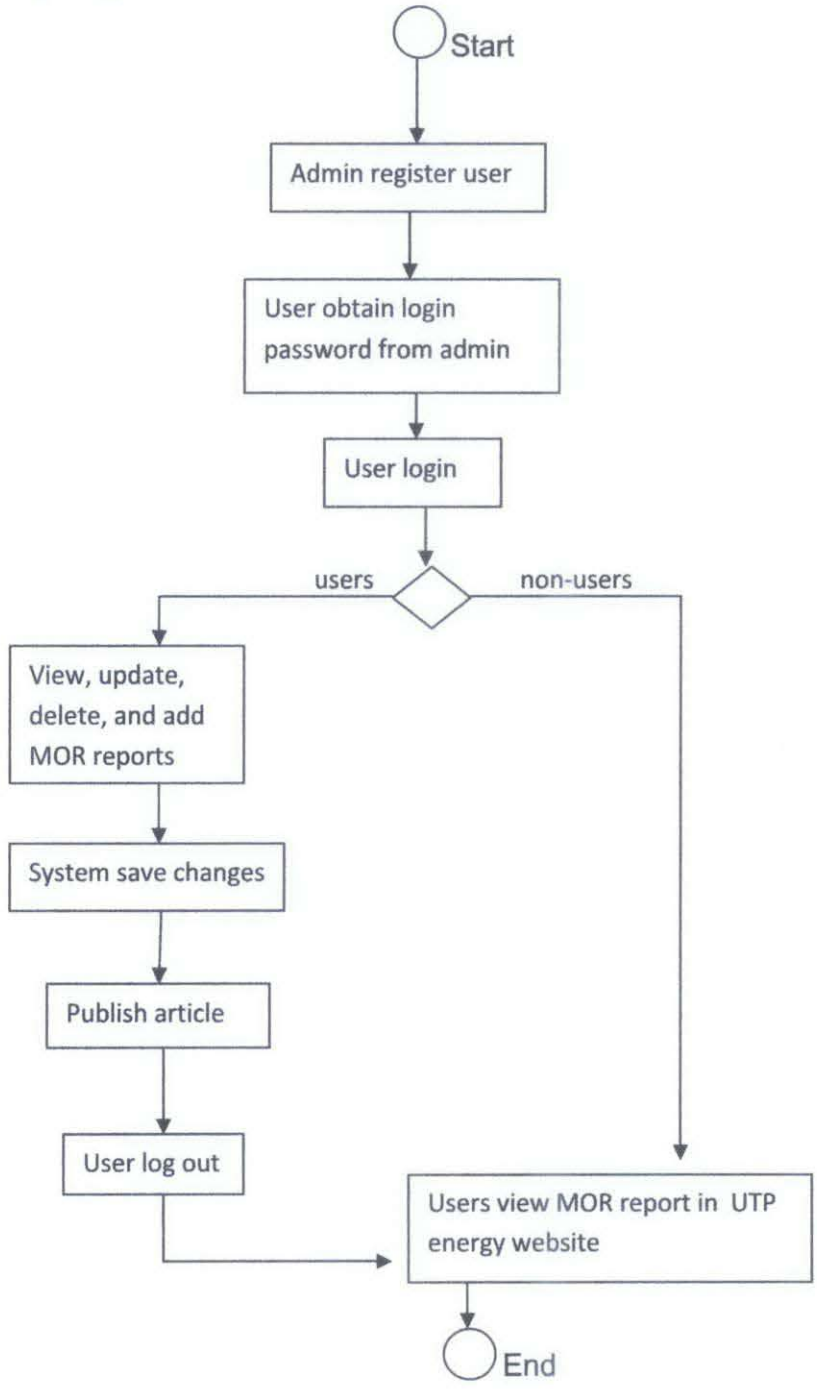


Figure 4.2: Activity diagram of Real time updating for dynamic report

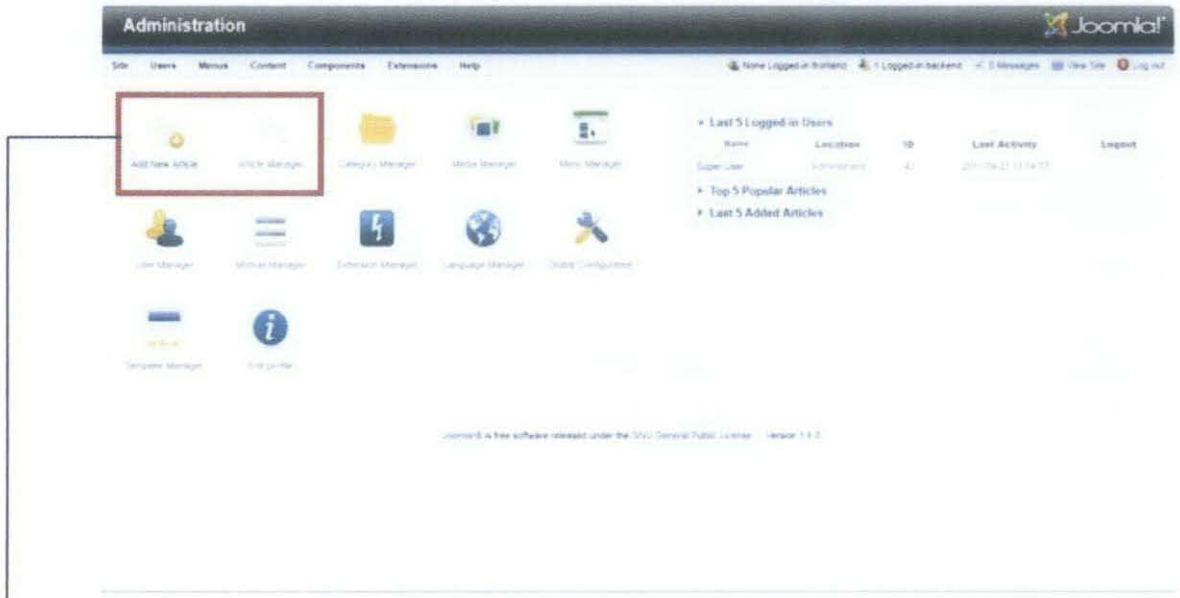
4.4 Interface design

Back end of system/website.

The users (team leaders and super administrator)

will key in their username and password

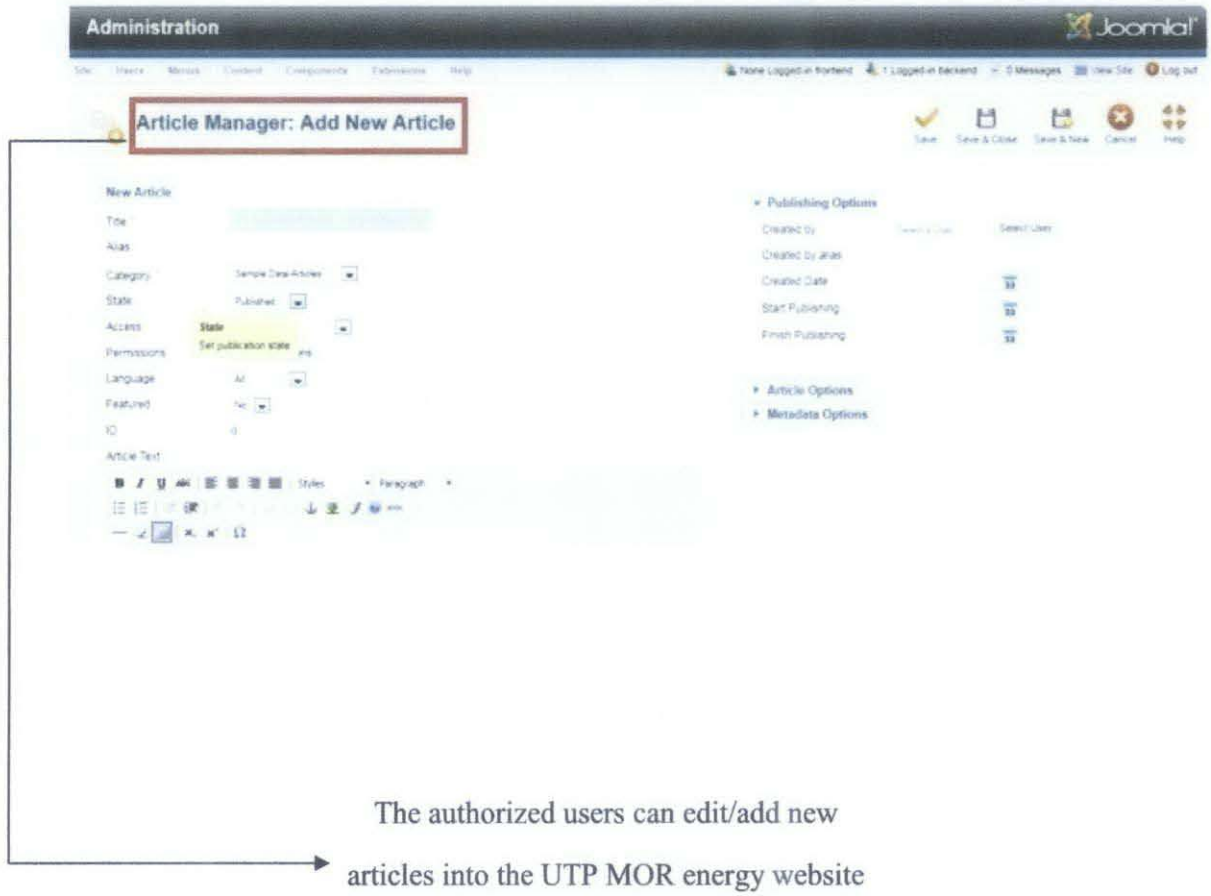
in order to enable them to login.



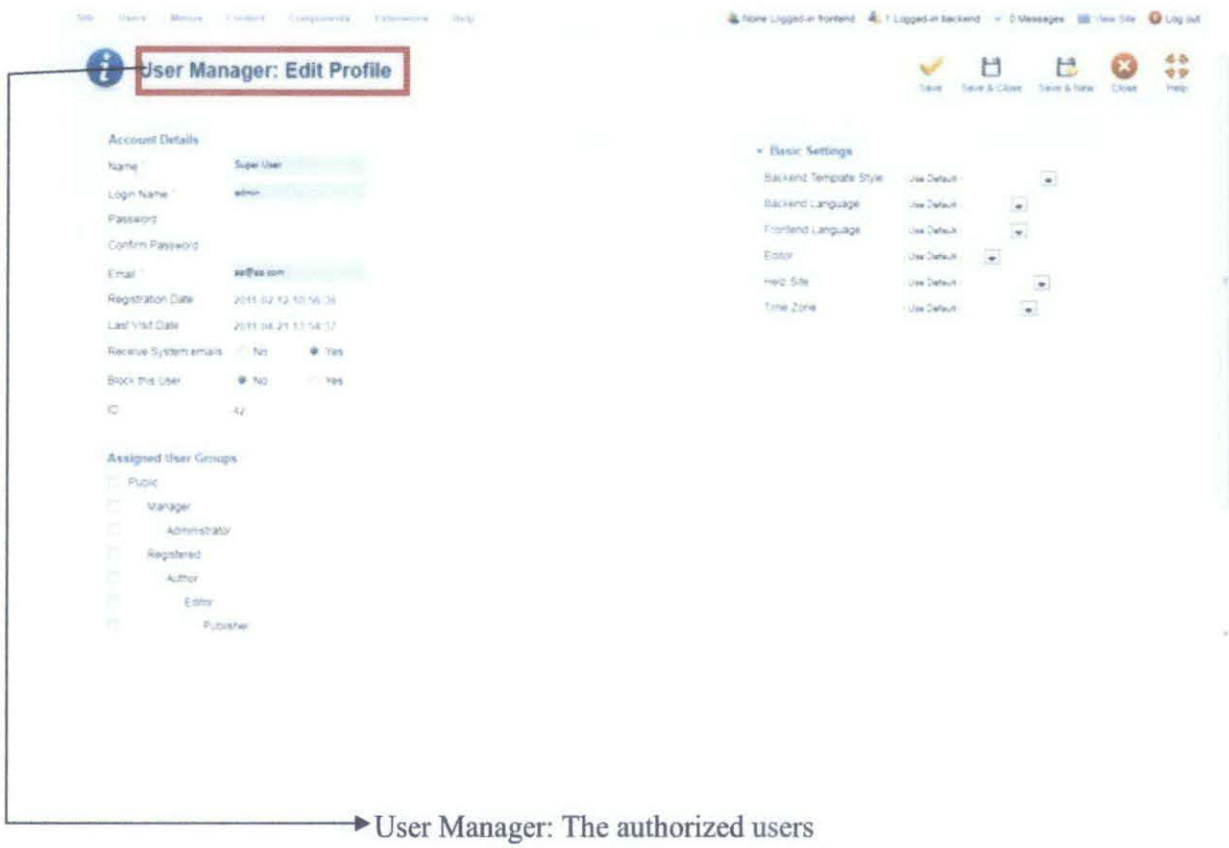
Administration control centre:

The authorized users were given permission

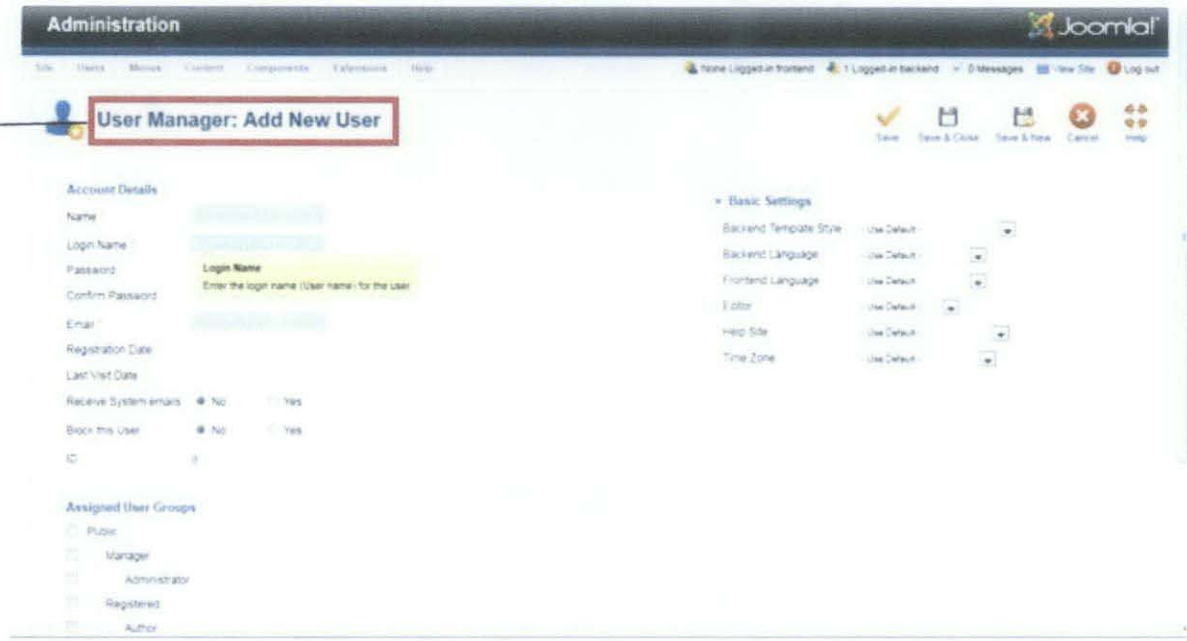
to add and update/manage their articles.



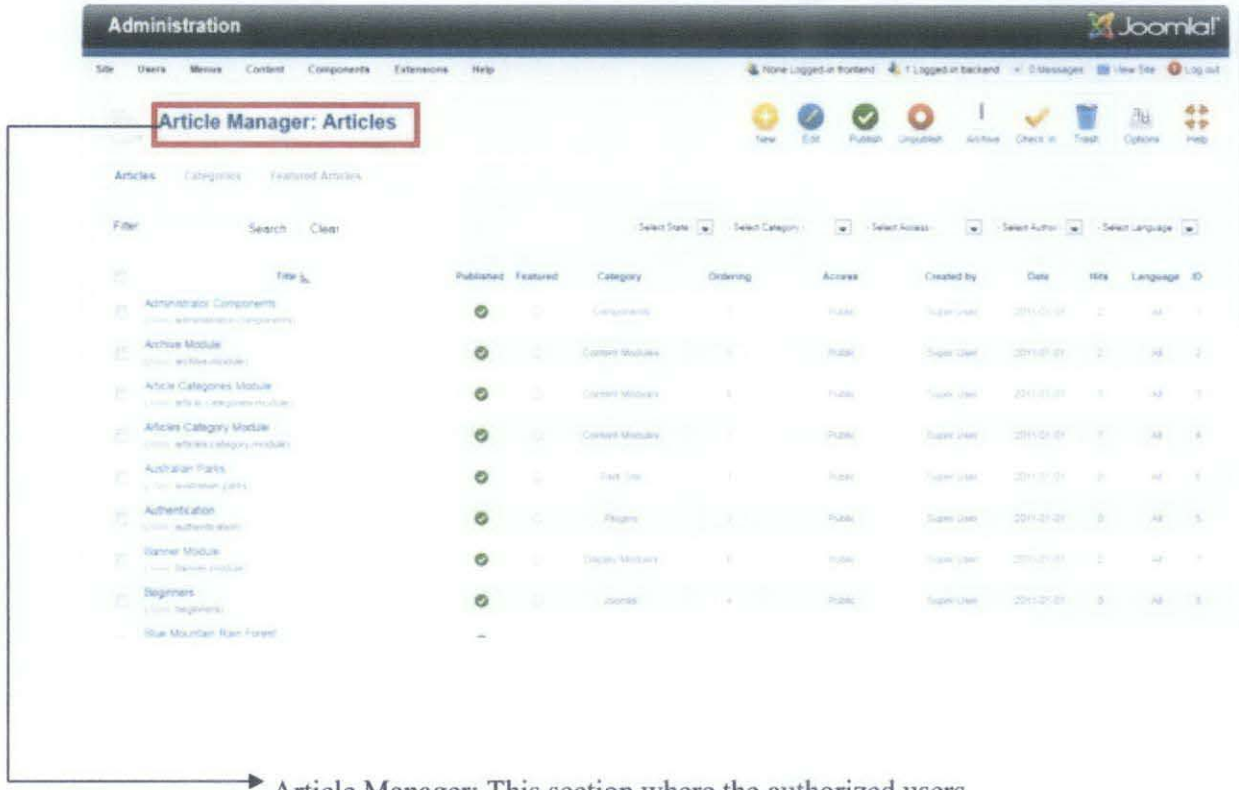
The authorized users can edit/add new articles into the UTP MOR energy website to update the Mission Oriented Research report (MOR).



User Manager: The authorized users can edit team members/individual information in edit profile section.



User Manager: The authorized users can add new members into different UTP MOR team in the add new user section.



Article Manager: This section where the authorized users can manage their articles that to be update and display on the fly into energy website regarding MOR reports.

4.5 Project Interface

The examples of dynamic contents have been based on drawing data from databases and moving the information to the website in the appropriate context needed by the user. Information can be further customized by drawing information topics based on the needs of particular circumstances.

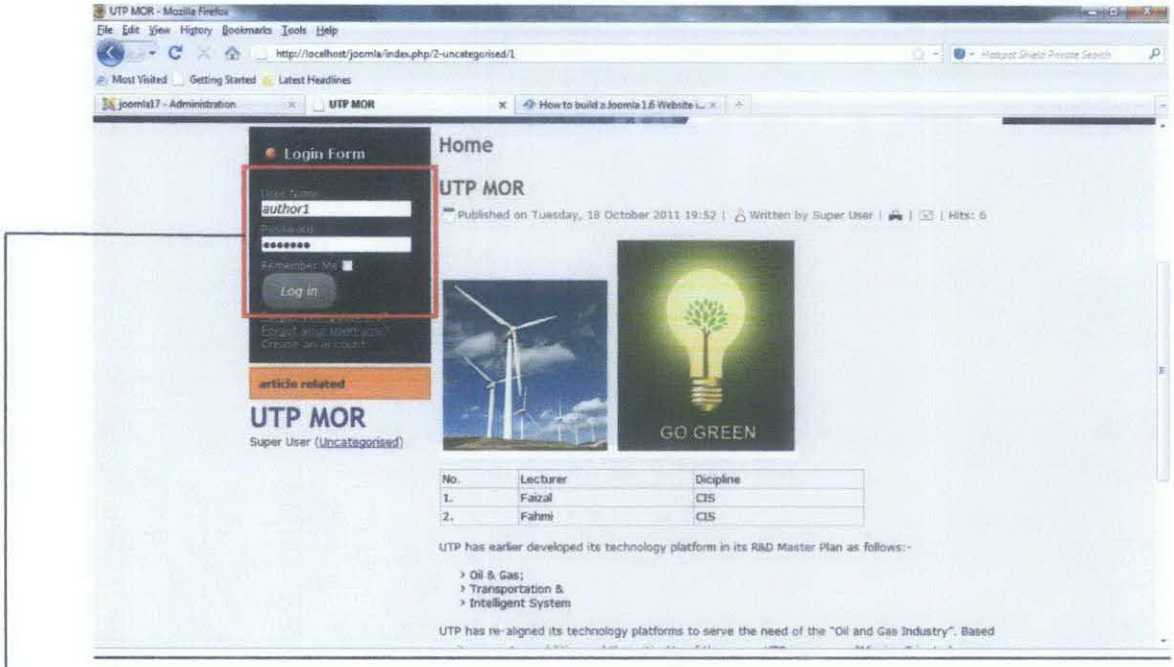
Customization addresses several potential issues involved in dynamic content. The connection between customization and dynamic delivery is that static customization refers to variations that are preassembled by authors. These variations are published and are available to the user group who navigates or search the site according to customization parameters. Dynamic customization refers to variations that are assembled on the fly from the repository.

The current development of the website is being run in a localhost server environment. The installation of Wamp server which consists of phpmyadmin, Apache server, and mysql. The administration of the website design is being managed using Joomla 1.7 software. The design and content are currently in basic stages and will be improved from time to time.

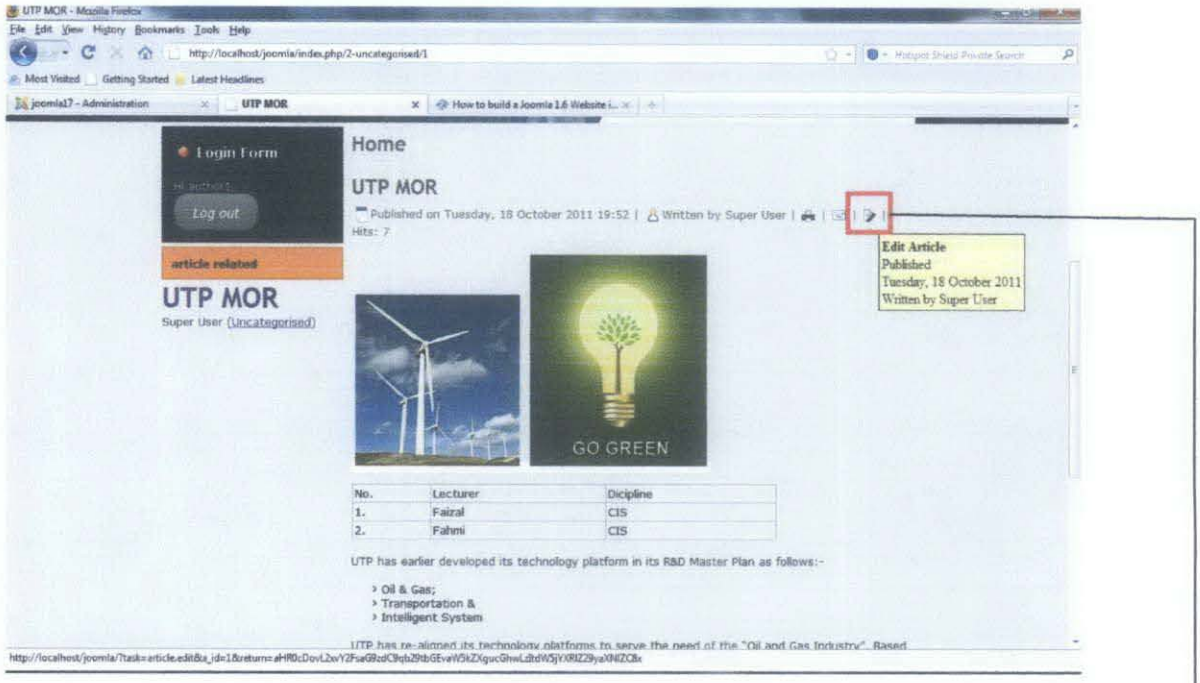
The website requires author authentication before they proceed with the updating the article of the website. Once login is successful, it will then allow the authors to change the information in the article without requiring permission from the administrator of the website. With this, many authors can update their article on the fly and this definitely save their time and user friendly.

Project Interface version 1.0

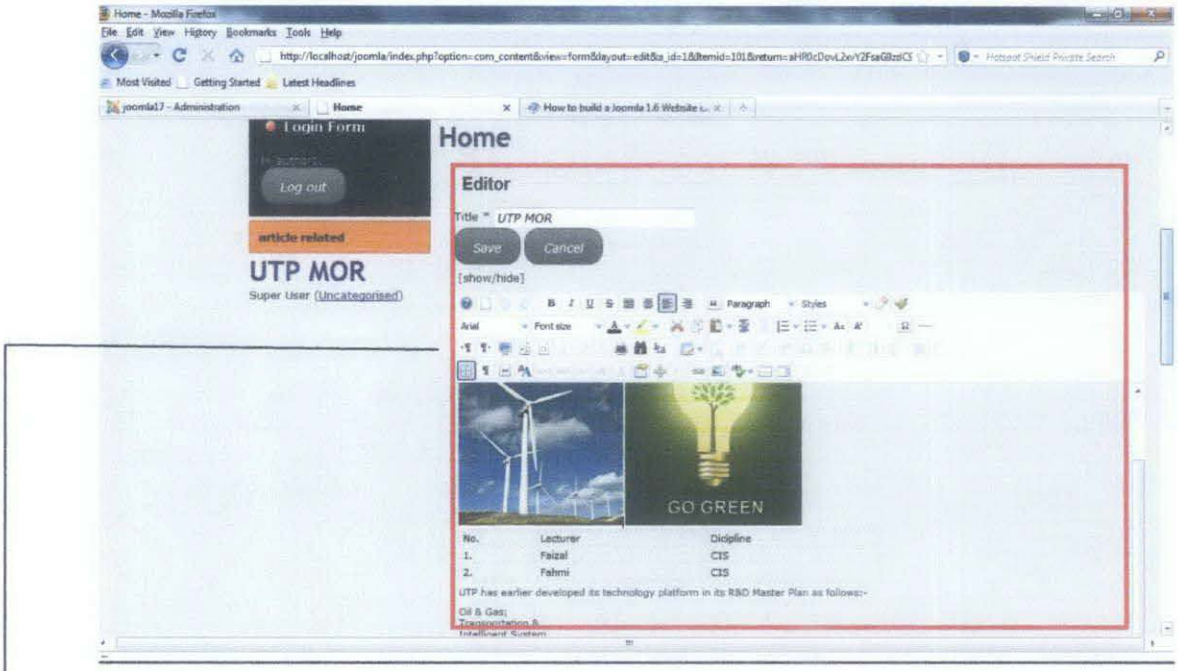
Front end of system/website.



The user (Author 1) login into the website.



Edit function is now available when Author 1 successfully login into the website.



Authors can update the article in the website and change the content. In this example, author wants to insert a new picture into the article.

The article is successfully saved and posted in the website on the fly.

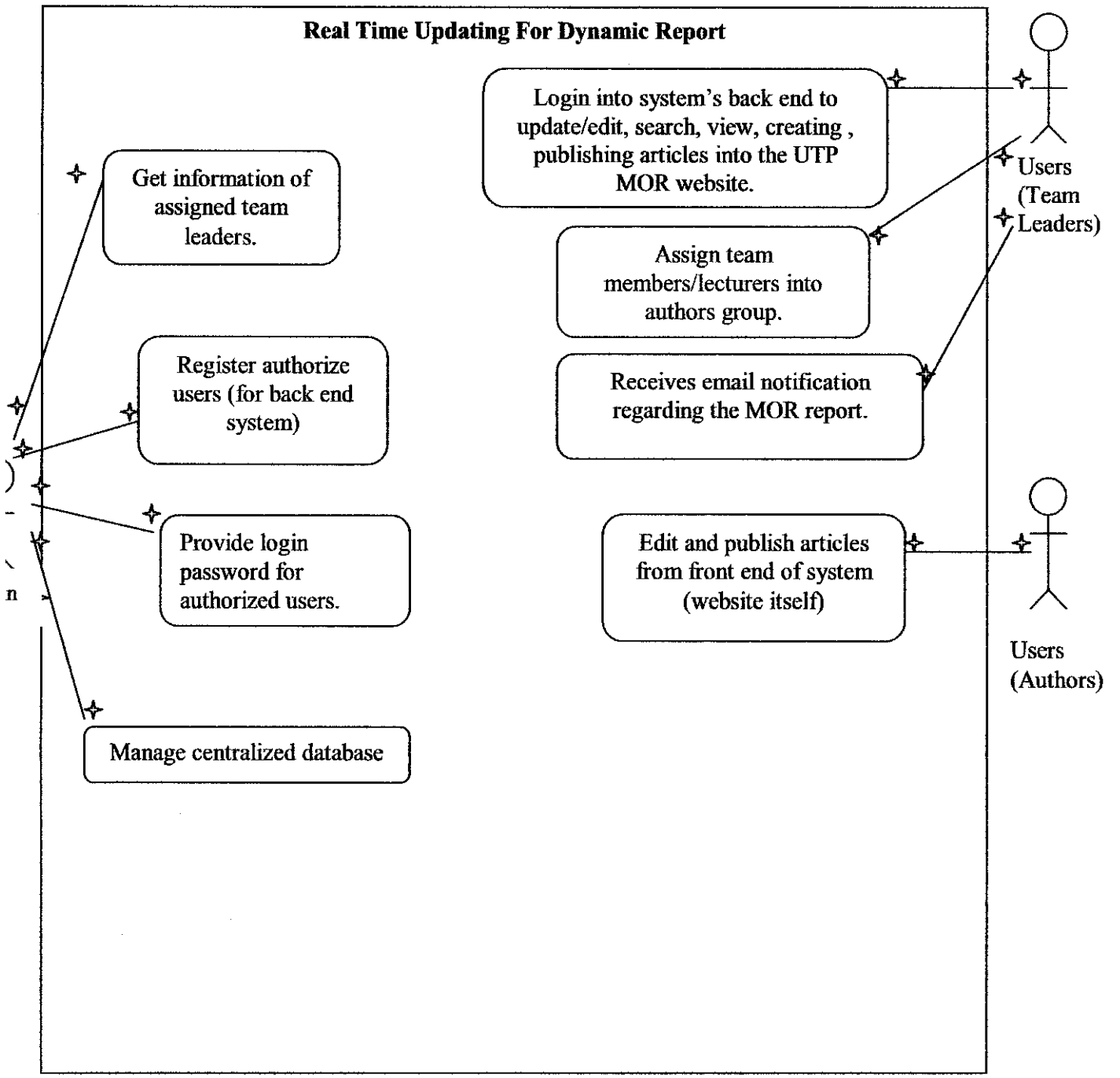
4.5.1 The Authorization Level of User for the Systems

The Super Administrator has the highest authority in the system which the ITMS will have the full authority of the website. The role is given to the UTP ITMS department to make the system install into the institution's server and live the system as functional energy website for UTP Mission Oriented Research. The super administrator of the website will only monitor the website from a bird's eye view. Any other event or article updates within the website is handle by the respective team leaders which will be assign by the super administrator. The super administrator will assign selected few team leaders with username and password for them to log in via the website itself and from the back end of the system which they will have to install and use as back end user of the website (Joomla! CMS). The back end of the system is where the team leader can create, edit and publish the articles into UTP Mission Oriented Research website.

A lecturer which is not the team leaders is registered as author in this system. With this, only the team leader (registered system user) can create new articles into the website and publishes them. As for author, they only can edit the website from the front end, and after editing, they can publish it without going into the system's back end. The system will assign like example, Mr. Faizal as author_1. This will allow author_1 only to edit the website, and publish them on the fly without having to inform the admin or their team leaders to change the article for the particular lecturer/team members of the Mission Oriented Research group. The reason author is not allow to create articles is due to information consistency and integrity issue that might occur in the system.

Public user may only view the website as it is live. They do not have the authority to do anything, as the website is for the registered and authorized user only. It is because we do not want the website to be like social media where anyone can post anything in the website and yet would create a lot of problem to the lecturers/website users of the MOR website.

Use Case Diagram



CHAPTER 5
CONCLUSION AND RECOMMENDATION

Conclusion

In conclusion, this project is able to serve its objective presented in the earlier section of this paper. In the end, it is expected that the system should:

- Be able to design and develop a new edit functionality to UTP energy website for the lecturers to update their reports and articles in real time basis.
- Be able to provide solution to the admin and the lecturers so that both party may benefits from the information being publish at user level.
- Able to increase awareness among the lecturers and the team members regard to their respective research team about the latest update in the UTP energy website on mission oriented research (MOR) report
- Able to increase efficiency of the updates by having the mission oriented research (MOR) report updates on the fly.

This project's results and outcomes have proven to be both relevant and beneficial to the users. This project highlights the enhancement for UTP energy website regard to provide the user to have personal account with login ID and having the authority to update each user's articles. The main contribution of this project is the user for the UTP energy website may have the authority to publish their Mission Oriented Report (MOR) on the fly.

Future Recommendation for Work Expansion and Continuation

- Focus on improving the GUI interface and user preferences of the system.
- Suggest creating secure edit functionality by having captcha or password prompting automation in the system.
- Ensures that notifying users via email blast to registered users.
- Firewall protection against virus or malware in the network for the articles that being shared or posted in the system.
- Users may get email notifications once in a month to remind them to update their article in MOR report website.

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