Improvement of Dynamic ISO Filling for Teaching and Learning (DIFS)

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Improvement of Dynamic ISO Filling for Teaching and Learning (DIFS)

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This report is submitted in partial fulfilment of the requirements for the
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DECLARATION

I hereby declare that this project report entitled

Improvement of Dynamic ISO Filling for Teaching and Learning (DIFS)

is written by me and is my own effort and that no part has been plagiarized without citations.

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DEDICATION

This is dedicated to my lovely family, appreciate very much for unconditional supports with my studies. Thank you for provide me the chance to take my desired field of studies and to improve myself through the journey of my life.

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ABSTRACT

ISO Documentation is a tool to allow an organization to document its quality management system (QMS). The document enables organization to plan the quality effectively to control and implement the effectiveness of its QMS. Universiti Teknikal Malaysia Melaka (UTeM) is also implementing the ISO Documentation to improve teaching and learning process. To ease the managing process of all ISO document, Dynamic ISO Filing for Teaching and Learning system is developed. This project is to make an enhancement of the Dynamic ISO Filing for Teaching and Learning system. Based on the previous project, the user who are getting to use the system is committee and lecturer only. Besides that, most of the documents are uploaded manually to the system and have to monitor manually by committee. This project will include other category of user's roles to extend number of users that could access the system. Besides that, the proposed system will implement digital signature to help some of the user to approve the documents. Then the proposed system will notify the respective user if there is important document is not uploaded into the ISO file. Waterfall software development model is used in this system. In waterfall model, each phase must be completed fully before next phase can begin. After the system is improved, lecturer can reduce their workload. Admin will be done some of the job such as upload academic calendar and others. The system can ensure that lecturer have upload all the relevant document and alert lecturer who does not complete their file subject.

ABSTRAK

Dokumentasi *ISO* adalah alat untuk membolehkan organisasi mendokumentasikan sistem pengurusan kualitinya (QMS). Dokumen ini membolehkan organisasi merancangkan kualiti den berkesan untuk mengawal dan melaksanakan QMS. Universiti Teknikal Malaysia Melaka juga melaksanakan Dokumentasi *ISO* untuk meningkatkan proses pengajaran dan pembelajaran. Untuk mencepatkan proses pengurusan semua dokumen *ISO*, sistem *Dynamic ISO Filing for Teaching and Learning* dibangunkan. Projek ini adalah untuk membuat peningkatan *Dynamic ISO Filing for Teaching and Learning*. Berdasarkan projek sebelumnya, pengguna yang mengguakan system hanya jawatankuasa dan pensyarah sahaja. Selain iti, kebanyakan dokumen dimuatnaik secara manual ke system dan perlu memantau secara manual oleh jawatankuasa. Projek ini akan merangkumi peranan pengguna kategori lain untuk memanjangkan bilangan pengguna yang boleh mengakses system. Selain itu, sistem yang dirancang akan menambah fungsi tandatangan digital untuk membantu sesetengah pengguna meluluskan dokumen tersebut. Kemudian sistem yang dicadangkan akan memberitahu pengguna masing-masing jika dokumen penting tidak dimuatnaik ke dalam fail *ISO*. Model pembangunan perisian *Waterfall*, setiap fasa mesti siap sepenuhnya sebelum fasas seterusnya boleh bermula. Selepas system bertambah baik, pensyarah dapat mengurangkan beban kerja mereka. Pentadbir akan melaksanakan tugas seperti memuatnaik kalendar akademik dan lain-lain. Sistem ini boleh memastikan bahawa pensyarah telah memuatnaik semua dokumen berkaitan dan pensyarah amaran yang tidak menyelesaikan subjek fail mereka.

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CHAPTER I

INTRODUCTION

1.1 Introduction

One of the corporate info of UTeM is gaining and maintaining MS ISO 9001:2008 accreditation. ISO 9001:2008 is an international standard of quality management system(QMS) that can be applied by all organizations to improve the performance of an organization. It specifies the requirements for an effective quality management system, organizations find that using the standard helps them:

- Quality of product/services is recognized internationally
- Improve customer confidence
- Quality is always measured and weaknesses can be identified
- Reduction of quality problems
- Continuous improvement

To gaining and maintaining MS ISO 9001:2008, ISO Documentation is necessary to implement to allow UTeM to document its QMS. This project will focus on ISO document for teaching and learning which all the required documents for QMS are stored into a subject file. Those documents are using papers which are easy to be broken and lose. Such risk of damaging and losing will bring out problems for lecturers which make them more troublesome and increase lecturer's burden work.

Dynamic ISO Filing for Teaching and Learning (DIFS) is a web-based system which has been developed previously to be used by lecturers and committee members with several necessary functions. DIFS has computerized the manual ISO file but it lacks in automate most of possible automatic process such as inserting lecturer

signature into subject teaching plan. So, this project is developed to improve the functionality of DIFS by automate the possible processes of teaching and learning ISO documentation to increase a productivity of people involved in preparing this subject file.

1.2 Problem Statement

Problem statement is a brief description of the issues regarding to functionality and operational of DIFS. Throughout the preliminary study on DIFS, the following problem statements have been addressed which are

- **Limited number of user**
  Previous system allows two users only to access the DIFS. At the same time, ISO Documentation consists of many documents such Academic Calendar, Appointment Letter, Timetable and others. Almost all document is uploaded by lecturer and committee members which burden them to do more work.

- **Approval of uploaded document are done manually**
  Some of documents are needed other lecturer's signature as an approval to upload the documents. For example, teaching plan of the subject had to sign by lecturer who is prepared and head of department as to sign it before it is uploaded. This process will taking time and burdern their jobs.

- **The ISO documents are monitored manually by committee**
  The previous project does not have a communication channel between lecturer and committee member through the system. The committee has to email lecturer manually regarding to any enquiries regarding to ISO file.

1.3 Objective

Objective of this project to be developed are:

- **To extend the number of users that could access the DIFS**
  The lecturer can be categorized as other role such as coordinator, dean, dead of department and others. Different role has different privileges in this system. For example, head of department can view all document in subject file and can sign document only. While for dean, he can view all document in all subject view but cannot edit it.

- **To automize the approval process using digital image signature**
  Document who need to get an approval by other lecturer just need a few clicks or taps from the lecturer. Lecturer no need to get a real signature from other lecturer as an approval.

- **To notify user regarding to missing ISO documents**
  To detect any replacement class for unavailable date. The system also provides a channel for committee members can communicate with the lecturer. The system will send email to the lecturer if there is enquiry regarding to the uploaded document.

1.4 Scope

The project scopes are divided into two categories which are scope of users and system functionality:

i. Users

The users of this project are admin, head of department, coordinator, dean, Malaysian Qualification Agency (MQA) evaluator, lecturers and committee members.

- **Lecturer**

  Lecturers can upload the ISO documents according the checklist and manage the documents. Lecturers also can manage their own schedule and generate class replacement notice. He also can upload their digital image signature to this system.

- **Committee member**

  Committee members are able to download the file uploaded by lecturers and manage event date, new semester and subject.

- **Admin**

  Admin is a FTMK academic staff who able to upload Academic Calendar and manage semester and subject.

- **Head of Department**

  Head of department is able to approve documents by using digital image signature.

- **Dean**

  Dean also have a same permission with head of department that are approve documents by using digital image signature. For example, class replacement notices which are generated by Head of Department have to approve by dean.

- **Coordinator**

  Coordinator is able to upload some documents such as Coordinator Appointment Letter and Lecturer Appointment Letter.

- **MQA evaluator**

  The MQA evaluator is only had permission to view full subject file in PDF format.

ii. Functionality

There are a few improvement functionalities in IDIFS:

- **User Notification**

  Committee can comment documents which are wrong document by sending their comment through email and the comment also will be viewable for every user except MQA evaluator.

- **Date Notification**

  Lecturer will get notification email to inform that there is a clashing of date with their schedule.

- **Digital Image Signature**

  Dean and head of department has the right to approve documents by using digital image signature.

- **Single ISO Subject File**

  For full subject file, every user able to view all related document in a PDF by just a click. Lastly, all uploaded document is strictly being counted either according amount of number of coordinator and lecturer or only one files.

1.5 Project Significance

This project can increase productivity by reducing time, cost and storage consuming. Committee can direct communicate with another user when it is some mistake. By using digital image signature, user can approve some documents by just a click without printing the documents, manually sign and upload it to system. This kind of method is wasting time and resources. Others than that, user also can view all document in a PDF format which can help to reduce time to arrange it according to the checklist.

1.6 Expected Output

After improvement, DFIS system can helps lecturer to reduce their workload. It helps to alert the lecturer when it is not enough document. This function will allow committee members to notify lecturer through email just by a click. Committee also can leave comment to other user if there are wrong uploaded files. The user will know directly which part of the document is wrong, so it can help to reduce time consuming for finding mistake. Besides that, dean and head of department can sign the documents through the system which helps them to make approval process become easier.

1.7 Conclusion

This chapter has briefly described the introduction, objectives and scope of the system. After investigated the project background, it is necessary to improve the system based on the problems such as limited number of user, manually approve uploaded documents and ISO documents are monitored manually by committee. Improvement of Dynamic ISO Filling for Teaching and Learning (DIFS) can solve the problems and achieve the objectives in managing the ISO document systematically by automizing approval process using digital image signature and notify user regarding missing documents. It is able to ease the process of documenting all necessary documents for ISO subject file managed by academic staffs.

CHAPTER II

LITERATURE REVIEW AND PROJECT METHODOLOGY

2.1 Introduction

This chapter discusses about the literature review and methodology of proposed system: Improved Dynamic ISO Filing for Teaching and Learning (DIFS). The facts and findings about the domain and the existing system of the ISO Standard for teaching and learning document are going to explained in this chapter. This chapter also discusses the techniques used, project requirements which are software requirements and hardware requirement of this project.

2.2 Facts and Findings

This section is mainly to discusses about Quality Management System, the existing system: Hardcopy Subject File and Dynamic ISO Filing Teaching and Learning (DIFS) that has been done by previous work and the techniques to be applied in the project such as Decision Support and Automation Software.

2.2.1 ISO family of Quality Management System (QMS)

This project is completed in the domain of ISO family of Quality Management System (QMS). QMS is a set of policies, process and procedure required for planning and operation in an organization. The first ISO standard is published in 1987 by International Organization for Standardization is ISO 9000. The ISO 9000 Quality Management System Standards Series is designed to help organizations ensure that they meet the needs of customers and other stakeholders while meeting decretory and regulatory requirements related to products or programs. It covers all aspects of quality management, including some of ISO's most well-known standards. These standards provide guidance and tools for companies and organizations wishing to ensure that their products and services consistently meet customer requirements and continuously improve quality. ISO 9000 relates to the basic elements of the quality management system which contains seven quality management principles of the ISO 9000 standard based ISO 9001 to meet the requirements of the organization. The seven quality management principles are:

1. Customer focus
2. Leadership
3. Engagement of people
4. Process approach
5. Improvement
6. Evidence-based decision making
7. Relationship management

Table 2.1: The ISO 9000 "Family"

ISO 9000:2005	Fundamentals and vocabulary
ISO 9001:2008	Requirements
ISO 9004:2000	Guidelines for performances improvements

There are few standards in the ISO 9000 family, such as ISO 9001:2008, ISO 9000:2005 ISO 9004:2000. Table 2.1 shows what are the main ISO 9000 standards. ISO 9000:2005 Quality Management System covers the basic of what quality management systems are also contains the core language of the ISO 9000 series of standards. A guidance document used for reference to understand terms and