

Faculty of Computer Systems & Software Engineering  
Teaching Workload Distribution System Using ERP

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Bachelor of Computer Science (Computer System and  
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### **SUPERVISOR'S DECLARATION**

I hereby declare that I have checked this project and in my opinion, this project is adequate in terms of scope and quality for the award of the degree of Bachelor of Computer Science (Computer System and Networking) with Honors.

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### **STUDENT'S DECLARATION**

I hereby declare that the work in this thesis is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at Universiti Malaysia Pahang or any other institutions.

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## **ABSTRAK**

Teaching Workload Distribution Sistem menggunakan ERP dibina untuk Fakulti Sistem Komputer dan Kejuruteraan Perisian khususnya untuk jabatan Kejuruteraan Perisian. Sistem ini akan digunakan oleh ketua jabatan Kejuruteraan Perisian sebagai seorang pentadbir. Sistem ini membolehkan ketua jabatan Kejuruteraan Perisian menguruskan pengagihan beban kerja dengan cara yang lebih efektif. Sistem ini membolehkan pentadbir mengurus dan mengemas kini profil pensyarah. Selain itu, pentadbir sistem ini akan mengurus profil subjek untuk pembahagian berdasarkan beban kerja yang diberikan. Pentadbir juga akan menguruskan pengagihan beban subjek dan beban kerja pensyarah. Kemudian, pentadbir boleh mendapatkan laporan pembahagian beban pengajaran. Kaedah yang digunakan untuk membangunkan sistem ini ialah 'Rapid Application Development' (RAD) sebagai metodologi kerana kaedah ini mempunyai fasa yang fleksibel dimana perubahan atau penambahbaikan boleh dibuat kepada sistem ini semasa fasa pembinaan dijalankan. Di samping itu, sistem ini perlu dibina dalam masa yang singkat; iaitu dalam tempoh enam bulan. Kaedah ini adalah kaedah yang terbaik digunakan untuk projek ini. Kesimpulannya, sistem ini memberi kelebihan kepada ketua jabatan Kejuruteraan Perisian dengan membantu mengurangkan beban kerja dan mempermudah ketua jabatan untuk membuat keputusan.

## **ABSTRACT**

Teaching Workload Distribution System using ERP is developed for Faculty of Computer Systems and Software Engineering, Software Engineering department. This proposed system will be used by the head of SE department as an admin. This system allows the head of SE department to manage the workload distribution in a more effective way. The system allows admin to manage and update the lecturer profile. Besides, admin will manage the subject profile for a division based on the workload given. Admin will also manage the subject load distribution and the workload of the lecturers. Then, the admin can obtain a report of the teaching workload distribution. Method used in developing this system is using Rapid Application Development (RAD) as a methodology because this method has flexible phase which the developer can make a change or any improvement to the system during the development phase. In addition, the system has to be done in a short period of time; within six months. This method is the best method to be used for the project. As a conclusion, this system is an advantage to the head of SE department that help to reduce the workload and easier in making the decision.

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## **CHAPTER 1**

### **INTRODUCTION**

#### **1.1 Overview**

The word technology refers to the making, modification, usage, and knowledge of tools, machines, techniques, crafts, systems, and methods of organization, in order to solve a problem, improve a pre-existing solution to a problem, achieve a goal, handle an applied input and output relation or perform a specific function. It can also refer to the collection of such tools, including machinery, modifications, arrangements and procedures (Health Care Informatics, An Interdisciplinary Approach, 2017). The products of technology advancement can be upgraded by conversion of manually-operated system into automated system. Manually-operated system is still use by several small company because of the lower operational cost while the automated system enhance the user to save more times and reliable for managing data.

In University Malaysia Pahang, every department of the faculty must distribute the registered subjects for the instructor based on their load. The faculties are using manual system during the subject distribution process which is time consuming in revising the subjects based on instructor's specialization, room utilization and instructor's load. This process is a complex task with many inputs that have to include into considerations. As the complexity of the process increases, the difficulty in decision-making process also increases. Since the decisions made only rely on the person in charge and not recorded in any enterprise system, we can only depend on that particular person if any problem occur in the load division process.

Information Systems (IS) are social systems which deal with the interaction of people and technology. An information system, including an Enterprise Resource Planning (ERP) system, is user-interfaced and designed to provide information useful to support strategy, operations, management analysis, and decision-making functions in an organization(Matende & Ogao, 2013). ERP is a commercial software package that

promises the seamless integration of all the information flowing through the company financial, human resources, supply chain, and customer information (Rashid, Hossain, & Patrick, 2002). As for Faculty of Computer Science & Software Engineering (FSKKP) for Software Engineering (SE) department, the load to assign to the lecturer is lack of the requirement in creating a satisfying teaching load. The teaching load is given without concerning the expertise of the lecturer. Therefore, to overcome the problem occurred, the system have been created by implementing ERP as a solution. It was introduced to FSKKP SE department.

## **1.2 Problem Statement**

This study aims to design a Teaching Workload Distribution System using ERP for Software Engineering department of FSKKP. First, the load accredited to the lecturer is poorly done. Head of SE department have to handle more than ten instructors by checking their schedules and considering the instructor's load. This will expose to higher risk to have an error. Next, the process to assign the subject is not well managed. The heads of SE department have to manually organize and revise the instructors' workload. The problem is it will increase the work load of the head department. Another recurring problem is the teaching division sometimes not follow the expertise of the lecturer; does making it difficult for the lecturer to teach subject beyond their expertise. As a whole, this will make a decision-making process getting harder.

## **1.3 Objective**

- i. To propose FSKKP SE department teaching workload distribution system using ERP.
- ii. To develop the teaching workload distribution system for SE department with easier and effective distribution process.
- iii. To evaluate the functionality of the distribution system using ERP.

## **1.4 Scope**

- i. The system focuses on FSKKP SE department.
- ii. The Teaching Workload Distribution system implements ERP for Head of Software Engineering department.

## **1.5 Significance**

- i. The head of SE department can lessen their burden when assigning subject to Software Engineering lecturer.
- ii. Decrease the time consuming to distribute the teaching workload.
- iii. Help the staff to manage the workload if there is conflict on the subject distribution process.

## **1.6 Thesis Organization**

This project includes 5 chapters. Chapter 1 discusses the introduction of the whole project. This chapter also consist overview, problem statement and objective of the project.

Chapter 2 discusses the literature review where the function of the project is explained thoroughly. This chapter will make a review and comparison between existing tools.

Chapter 3 discusses the methodology to be used in the project to propose a solution and clarify the existing problem. In this methodology, there will be description for expected result.

Chapter 4 will discuss about the implementation and testing of the project where the result of discussion will be specified.

The Conclusion of the project where constraint of the project and the future work will be discussed in chapter 5.



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