Universiti Teknologi MARA

AN AUTOMATED SYSTEM FOR LECTURER TO COURSE ASSIGNMENT

Siti Fatimah Che Saad

Thesis submitted in fulfillment of the requirements for
Bachelor of Computer Science (Hons)
Faculty of Computer and Mathematical Sciences

November 2009

Acknowledgements

Abstract

The arrangement of course in universities timetabling is an optimal problem to be solved. It can be divided into two parts: lecturer assignment and course scheduling. The problem addressed in this research is the assignment of lecturers to the courses based on their preference and their knowledge expertise. The focus of this research is lecturer assignment only. Therefore, the linear programming technique is employed to solve the problem of lecturer assignment. Two experiments are conducted to find the minimum error of assignment lecturer to course. And the computational results for solving the problem are reported together with some comparison and analysis of the solutions obtained. It is shown that the assignment of lecturer based on the lecturer expertise field has minimum error than assignment based on priority request. Also, the result of the second experiment show that the best procedure to be applied is by considering the lecturer expertise, course priority and teaching history accordingly. However, this research does not involve with constraint time and room allocation. Therefore, the solution obtain is not optimal. As the conclusion, this project can be further enhance by adding time and room allocation as constraint function

Keywords: lecturer to course assignment, linear programming, university timetabling, course scheduling.

Table of Contents

CHAPTER 1

INTRODUCTION

This chapter provides the background of the problem which leads to the rational of this research. It is also describes the purpose of this research, the project objective and scopes, also the project significant.

1.0   Background

All over the world, automatic university timetabling has been a difficult problem to solve. Course scheduling of universities is a large, complex, and time-consuming task (Blanco et al, 1998). In most general context, scheduling involves the arrangement, coordination, and planning of the utilization of resources to achieve an objective. Course scheduling at universities is an optimization problem to be solved under multiple constraints (Wang, Y.Z, 2003). According to Gunawan, et al, timetabling problem can be classified into five different sub-problems which are teacher assignment, course scheduling, class-teacher timetabling, student scheduling, and classroom assignment, (2007). Course scheduling involves assigning course to time slot while teacher or lecturer assignment involves assigning lecturer to course. In general, one must assign lecturer to course, and then assign course to classrooms and time slot. The focus of this project is primarily on solving teacher or lecturer assignment problem only. It is the most important part where we should assign the right lecturer to the right course before we can proceed with course scheduling problem. Based on my literature review most of the previous research on timetabling only focus on one sub-problem which is course scheduling. Only a few researches have done work on lecturer or teacher assignment problem only