AUTOMATIC PERSONALIZED STUDENT TIMETABLE

BY

SITIAISHAH BT MOHAMED AMIN

BACHELOR OF COMPUTER SCIENCE (HONS)

THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE DEGREE OF BACHELOR OF COMPUTER SCIENCE

FACULTY OF COMPUTER AND MATHEMATICAL SCIENCES

UNIVERSITITEKNOLOGI MARA

NOV 2010

Acknowledgement

Assalamualaikum w.b.t

"ih *the name of ALLAH, the most Gracious and most Merciful"*

First and foremost, I would like to express my gratitude to Allah s.w.t for His Blessing to complete project proposal. Secondly, many thanks to my supervisor, PM Dr. Rosmawati Nordin and my course coordinator, Dr. Noor Elaiza binti Abd. Khalid and En. Fakhrul Yusof for the guidance, advises, co-operation and comments on the proposal for my project. Without their supervision maybe I could not complete this project proposal successfully.

Then, thanks to my beloved family that gave me support and strength. Also thanks to all my friends for their opinion, support, suggestion and co-operation to prepare the project proposal.

Last but not least, I also would like to thank all people who are involved either directly or indirectly during the progress of this proposal.

Thank you.

Wassalam.

Abstract

Time tabling is one of the most important administrative activities that take place in academic institutions. Timetable Scheduling takes a huge effort at the beginning of each year or semester for every university program. A large number of variants of the time tabling problem have been proposed in the literature, which differ from each other based on the type of institution involved, university or school, and the type of constraints. In this paper, I have resolved the problem of timetable scheduling using Genetic Algorithm.

Key words: Course timetabling, Genetic algorithms,

Table of Contents

DECLARATION **ii**
ACKNOWLEDGEMENT **iii**
ABSTRACT **iv**
TABLE OF CONTENTS **v**
LIST OF FIGURES **vi**
LIST OF TABLES **vii**

Page

Chapter 1 : Introduction 1

1.1 Introduction 1

1.2 Project Overview 2

1.3 Problem Statement 3

1.4 Project Objectives 4

1.5Project Significance 4

1.6 Project Scope 4

1.7 Summary 5

Chapter 2 : Literature Review 6

2.1 Introduction 6

2.2 Heurictics Method 7

2.3 Genetic Algorithm Method 10

2.4 Graph Coloring Method 11

2.5 Iterative Forward Search Method 11

2.6 Simulated Annealing 12

2.7 Constraint Logic Programming 12

2.8 Interface Design 13

2.9 Other Methods 14

2.10 Summary 16

Chapter 3 : Research Methodology 17

3.1 Introduction 17

3.2 Gathering Information 21

3.2.1 Determination of specific hardware and software 22

3.2.2 E-Survey Implementation 22

3.2.2.1 Compose E-Survey Questionnaire 22

3.2.3 Information Collected Through E-Survey 23

3.2.4 Potential Methods 23

3.2.4.1 Processing 23

3.3 Data Collection 26

3.3.1 ICRESS Analysis 26

3.4 System Design 27

3.4.1 Scheduling Design 28

3.4.1.1 Genetic Algorithm (GA) 28