

Universiti Teknologi MARA

**Development of Decision Support System
Prototype for PLKN Selection Process
(DSSPSP)**

Masrul Farihan Mohamad

**Thesis submitted in fulfillment of the requirements for
Bachelor of Science (Hons) Information Technology
Faculty of Information Technology And
Quantitative Science**

November 2006

DECLARATION

This declaration is to clarify that all the submitted contents of this thesis are original in its stature, excluding those, which have been acknowledge especially in the references. All the work process involved is from my own idea and work. All of the content of this thesis has been submitted as part of partially fulfillment of Bachelor of Science (Hons) Information Technology program. I hereby declare that this thesis project is the work of my own excluded for the references document and summaries that have been acknowledged.

2 NOVEMBER 2006

MASRUL FARIHAN MOHAMAD

2004220364

ABSTRACT

Decision Support System Prototype for PLKN Selection Process is to assist the risk in selecting an appropriate trainee for PLKN program. This research focuses on selecting all youth aged 18 in the year according to the criteria that stated by government. Several criteria are identified and define; 1) Criteria for each camp, 2) Criteria based on gender at each camp, 3) Criteria for school selection, 4) Criteria based on school activities (merit). The criteria are represented in form of rules to make sure all the information is qualified. The inference engine works by selecting rules for testing and then checking if the condition for that rules are true and match with the condition provided. The multidimensional arrays are used in to represent certain rules. In completing this research, system development life cycle and system requirement engineering process technique are follows. The decision support system helps in making effective and reliable decisions to select the appropriate candidates. The result of this research is the list of qualified or eligible candidates for every series of PLKN in selection year. As a conclusion, this prototype achieved the objectives and succeeds in doing their task for selection candidates for Program Latihan Khidmat Negara.

Keyword: Decision support system, Inference rules.

TABLE OF CONTENTS

CONTENT	PAGE
ACKNOWLEDGEMENTS	iii
ABSTRACT	iv
LIST OF TABLES	x
LIST OF FIGURES	xi
LIST OF ABBREVIATION	xiii
CHAPTER 1: RESEARCH OVERVIEW	
1.0 Introduction	1
1.1 Background Research	2
1.2 Research Problem	2
1.3 Scope of the Research	3
1.3.1 Criteria for Each Camp	3
1.3.2 Criteria Based on Gender at Each Camp	3
1.3.3 Criteria for School Selection	3
1.3.4 Criteria Based on School Activities	4
1.4 Research Objective	4
1.5 Significance of the Research	4
1.5.1 Staff of JLKN	5
1.5.2 Trainees	5
1.6 Research Limitation	5
1.7 Research Overview	5

CHAPTER 2: LITERATURE REVIEW

2.0	Introduction	7
2.1	Decision Support System	7
2.2	Selection Process	9
2.3	Expert System	9
2.3.1	Rule-based Expert System	11
2.3.1[a]	Forward Chaining	11
2.3.1[b]	Backward Chaining	12
2.3.2	Model-based Expert System	13
2.2.3	Case-based Reasoning	14
2.4	Web Database Architecture	15
2.5	Brief Description of All Known Similar and Relevant On Going Project	17
2.5.1	SCT Banner Student Population Selection for SunGuad SCT 17	17
2.5.2	Precision Employee Selection System (PSS)	18
2.5.3	Kuwait University Expert System for Selecting Multiple Comparison Test	18
2.5.4	Australian Fencing Federation Selection System	19
2.6	Summary	20

CHAPTER 3: METHODOLOGY

3.0	Introduction	22
3.1	Planning Phase	25
3.1.1	Feasibility Study	25
a.	Technical Feasibility	25
b.	Schedule Feasibility	26
c.	Organizational Feasibility	26