

Universiti Teknologi MARA

**Assessments of Healthy Lifestyle Practices
using Fuzzy**

Mohd Khairi Bin Mohd Adnan

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

July 2012

DECLARATION

I hereby declare that the work in this thesis is my own except for the ideas or quotation are from the work of other people and published. Otherwise all the ideas or quotation are fully acknowledged in accordance with the standard referring practices of the discipline.

JULY 2012



MOHD KHAIRI BIN MOHD ADNAN

2010240622

ABSTRACT

The changes in the health behaviour of most individual nowadays are showing a trend towards a less healthy lifestyle. There are low levels of awareness about their health states. Health experts now describe lifestyle as one of the most important factors affecting health. In fact, it is estimated that as many as seven of the ten leading causes of death could be reduced through common-sense changes in lifestyle. Lifestyle assessment or evaluate is the process of identifying behavioural risk factors particular to an individual with the intent to encourage behaviour change for the prevention of poor health outcomes in the future. Improving the health of people living requires an initial assessment of their health status. Various instruments exist to measure perceived health. One such instrument is simply a question that asks people to rate their health as poor, fair, good, very good, or excellent. Six categories of lifestyle behaviour has used in this research, there are cigarette smoking, alcohol and drugs, eating habits, exercise/fitness, stress control and last one is safety. As fuzzy method has high potential of reasoning capability, the purpose of this research study is to investigate and develop an assessment system using fuzzy which are able to rate the health lifestyle practices based on behaviour of those six categories by answering a few provided questionnaire related to health style.

TABLE OF CONTENTS

CONTENT	PAGE
DECLARATION	ii
ACKNOWLEDGEMENT	iii
APPROVAL	iv
ABSTRACT	v
TABLE OF CONTENTS	vi
LIST OF FIGURE	ix
LIST OF TABLES	x
CHAPTER ONE: INTRODUCTION	1
1.0 Introduction	1
1.1 Research Background	1
1.2 Problem Statement	2
1.3 Objectives of Research	2
1.4 Project Scope	2
1.5 Project Significance	3
1.6 Summary	3
CHAPTER TWO: LITERATURE REVIEW	4
2.0 Introduction	4
2.1 Healthy lifestyle	4
2.2 Healthstyle: Self-Test	5
2.2.1 Healthstyle Questionnaire	6

2.2.2	Lifestyle Scores	9
2.3	Overview fuzzy logic	10
2.3.1	Membership formulation and parameterisation	12
2.3.2	Basic operations in fuzzy logic	14
2.3.3	Fuzzy Expert System	16
2.3.4	Fuzzy If-Then Rules	16
2.3.5	Fuzzy Inference Systems	17
CHAPTER THREE: METHODOLOGY		21
3.0	Introduction	21
3.1	Background Study	24
3.1.1	Preliminary Study	24
3.1.2	Knowledge Acquisition & Comprehension	24
3.2	System Design	25
3.2.1	Questionnaire	25
3.2.2	System Architecture Design	28
3.2.3	System Flow Design	32
3.2.4	Interface Design	33
3.3	Prototype Development	34
3.3.1	System Development	34
3.4	Prototype Testing and System Evaluation	34
3.5	Software and Hardware Requirement	35
3.5.1	Hardware Specification	35
3.5.2	Software Specification	35
3.6	Documentation	35
3.7	Summary	36