Universiti Teknologi MARA

Jogging Tracker Using Fuzzy Expert

Ahmad Zharif Bin Amiruddin

Report submitted in fulfillment of the requirements
for Bachelor of Information Technology (hons.)
Intelligent Systems Engineering

August 2015

ACKNOWLEDGEMENT

Bismillahirrahmanirrahim,

First of all I would like to thanks to Almighty Allah s.w.t for giving me strength and ability to understand, learn and complete this final year project report.

Special Appreciation goes to my parents, my father Amiruddin bin Ariffin and my mother for giving support for me to finish this project.

I also admire the help and guidance of my supervisor Pn.Shamimi and my previous supervisor En Mohd Zaki Zakaria, thank you for thier concern, guidance, patience and relentless support even with all the trouble I faced during doing this project.

To Lecturers CSP650 and CSP 600, Dr. Shuzlina Abdul Rahman and Prof Dr Azlinah Mohamed willing to give their knowledge and guidance to help the student finish their project on time.

I also would like to thank my friends, and those involved with/out purposes in getting this piece done – may Allah SWT bless you all. Upon completing of this project, I have learnt so many things regarding the knowledge of Artificial Intelligent and I would love to learn more in improving myself for my future undertakings

Thank you and may Allah bless all of them.

ABSTRACT

In 14 Asian countries, jogging are one of the top five in 12 of the Asian cities, and it is the most popular in Kuala Lumpur. Jogging is one of exercises that require running at a slow pace; generally jogging is done for an extended period of time. Jogging is also considered one of the most efficient forms of aerobic exercise and is invaluable for preserving overall health. This report is purposely about to build a jogging system that able to give schedule and calculate the jogging result of the user. As the early plan the system are featured Expert System and Fuzzy Inference System to create a good web base environment that serve the need of the user. The jogging schedule for this system is creating based on the information that have been provided by the user. The system will provide 8 weeks jogging schedule for the user. Besides that, The system are able to measure the body mass index, basal metabolic rate, physical activity, total daily energy expenditure, calories burn, and type of movement. The system also will store the previous jogging that have been input by the user to be used to calculated the result for jogging of the user. Without this system all the jogging schedule are not recorded and it is hard to calculate the result of user jogging for 8 weeks as stated at the scope. The hope for this system is the system able to help the amateur jogger to start jogging and calculate the result of their jogging for their further action.

TABLE OF CONTENTS

CONTENT	PAGE
SUPERVISOR'S APPROVAL	ii
STUDENT'S DECLARATION	iii
ACKNOWLEDGEMENT	iv
ABSTRACT	v
TABLE OF CONTENTS	vi
LIST OF FIGURES	viii
LIST OF TABLES	ix
LIST OF ABBREVIATIONS	x
CHAPTER ONE: INTRODUCTION	
1.1 Background Study	1
1.2 Problem Statement	2
1.3 Research Question	3
1.4 Project Objective	3
1.5 Project Scope	3
1.6 Significant of the project	4
1.7 Summary	4
CHAPTER TWO: LITERATURE REVIEW	
2.1 Jogging	5
2.2 Components of the System	6
2.2.1 Total Daily Energy Expenditure	6
2.2.2 Basal Metabolic Rate	7
2.2.3 Physical Activity Level	9
2.2.4 Body Mass Index	10
2.2.5 Intelligent System	12

CHAPTER 1

INTRODUCTION

This chapter represents an overview of this project that will be developed. The topics involve in this chapter are background study, problem statements, research questions, objectives, scopes of the project and last but not least significant of this project.

1.1 Background Study

Jogging is one of exercises that require running at a slow pace; generally jogging is done for an extended period of time. Jogging is also considered one of the most efficient forms of aerobic exercise and is invaluable for preserving overall health. A research that has been done by Miyuki (2012) found that sports popular in 14 Asian countries, jogging are one of the top five in 12 of the Asian cities, and the most popular is in Kuala Lumpur. Based on the observation jogging activity popularity is increasing in the cities of Asia. The main point of jogging is not to max out the jogger's heart rate, but it is to find the optimum amount of exercise for the jogger to get a healthy heart rate. This paper is about designing a prototype of jogging application that can guide and record the amateur jogger's jogging progress.

This system will be a web base-system since nowadays web can be access via mobile and personal computer. The users data are easily can be access anywhere compare to stand alone system.

This jogging tracker system need user personal and user jogging data such as height, weight, age, gender, jogging duration, jogging speed, jogging date and jogging distance. The method or techniques used in this system are fuzzy and expert system. This system will provide a jogging schedule for amateur jogger based on their body mass index so it is easy for the jogger to follow. Based on jogger's jogging this system will give the result, such as activity level, lifestyle, speed, distance, body metabolic rate, total daily energy