Menu Planning Prototype System for Malaysian Athletes

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ABSTRACT

Planning menu for athlete is not an easy task as it involves many constraints and requirements. Different types of sports require different amount of nutrients that need to be fulfill to increase the performance of the athlete during training and competition as well as to avoid any muscle injury. Manual calculation is impossible and time consuming to get the optimal solution that fulfill all the constraints involve. Therefore, the main objective of this research is to develop a menu planning prototype system for Malaysian athlete using optimization and heuristic approach to get the best solution based on the current workflow from nutritionist point of view. This research expects to produce a list of menus for athlete that meets all the objectives and constraints involved.

Dedication

*I humbly thank **Allah** Almighty, the Merciful and the Beneficent, who gave me health, thoughts and co-operative people to enable me achieve this goal,,,,*

*I wish to dedicate this work to **Holy Prophet Muhammad** (Peace be upon him) and his companions who laid the foundations of Modern civilization and paved the way for social, moral, political, economical, cultural and physical revolution,,,,*

*I also thank my father **(Ali Alkhazaleh)**, my mother, my brother **(Tariq)** and my sisters for their never ending moral support and prayers which always acted as a catalyst in my academic life,,,*

*To my **Fiancée** that I think I have always loved her Even long before I knew her. A destiny faith or something, simply led me to her. I've looked for her a long time I've often dreamed about her, And now that she is here, I don't see how I got along without her,,,*

To all my friends who support me and pushed me to the top,

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Hamzah Ali Khalaf Alkhazaleh

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CHAPTER ONE

INTRODUCTION

1.0 Introduction

This chapter will introduce the description on this research study. This chapter will talk about the useful information that related with athlete's diet using menu planning prototype system for athletes. The problem statement, objectives, scope and significance of study are discussed in this chapter.

Training for endurance sports such as running, cycling, triathlon, rowing, and swimming placed a great demand on body for athlete. In some situation, continuous recovery during periods of heavy training is important to maintain the performance of athlete. Therefore, every athlete must have enough sleep and optimal nutritious diet to maintain optimum recovery and performance. A healthy and nutritious diet for athlete is different from normal human diet. They need more amount of energy before training or competition to keep going with the schedule. The good diet for athletes during heavy tanning help them to continue training without the athlete succumbing to illness or injury. Good food choices can also promote adaptations to the training stimulus. However, there is no single best diet for every athlete because it depends on the unique need and requirement, such as based on age, gender, body size, training, sports, and food likes and dislike. Individuals need also change every season and athlete needs will be changed according to time and requirement (Cordain et al., 2005).

Based on a report from a group of nutrition in athletes' medical information report (2003), the right and well-chosen diet will offer many benefits for elite athlete,

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