

Universiti Teknologi MARA

DASH Diet Recipes Visualizer

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ABSTRACT

DASH diet stands for Dietary Approaches to Stop Hypertension and it is recommended for people who want to lower their high blood pressure. A lot of DASH diet recipes are available on the Internet for people who want to follow the diet. However, the recipes are only represented in text forms that are static and non-interactive where people must read line by line to gain underlying information which can be time-consuming. Therefore, the purpose of this project is to visualize the ingredients of DASH diet recipes interactively to show the ingredients of the recipes based on the main food groups of the food pyramid. DASH diet recipes and list of foods for the main food groups are collected from the Internet and pre-processed by using Python library which is the Natural Language Toolkit (NLTK) to perform lemmatization. Then, the ingredients of the recipes are identified into Grains, Protein, Fats, Oils and Sugar, Fruits, Vegetables, Milk and Dairy and Others by comparing the ingredients with the list of food for each food group. The result of the analyzation is stored in JSON files and the JSON files are implemented in the Circle Packing algorithm to generate interactive visualization of the recipes. The tool used to create the interactive Circle Packing visualization is D3. Functional testing is done to evaluate the functionality of the visualization application and the result shows that the visualization application works accordingly. This project will be beneficial for people to gain quick information in an interactive and fun way. It provides a new kind of way to convey information about recipes.

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CHAPTER 1

INTRODUCTION

This chapter covers the background of study, problem statement, research questions, objectives, research scope and significance of the project.

1.1 Background Study

Obesity rates are rising worldwide with more than 1.5 billion people worldwide are now overweight (Basu, McKee, Galea, & Stuckler, 2013). Based on Economist Intelligence Unit's "Tackling Obesity in Asean" report, which covered Malaysia, Singapore, Indonesia, Thailand, the Philippines and Vietnam, Malaysia has the highest obesity prevalence in Southeast Asia with percentage of prevalence of obesity at 13.3 per cent and percentage of overweight at 38.5 per cent (Rashid, 2017). With the increase in the percentage of overweight and prevalence of obesity, non-communicable diseases such as diabetes, hypertension and heart diseases will also rise in our country. According to Azura Abas (2016), one in three adults in Malaysia have hypertension which is about 30 per cent or 6.1 million people. It is clear that hypertension is becoming a serious problem in Malaysia and Malaysians really should change their lifestyle in order to be healthy and lose weight.

One of the lifestyle changes that can be done is changing our eating habits by dieting. There are various kinds of diet plans these days. Each one of them has its own benefits. Some diet plans are more focused on losing weight and some are more focused on keeping the body healthy. One of the popular diet plans that has been practised by many people is the DASH diet. The U.S. News (2018) has ranked DASH diet as the number one best diet out of 40 diet plans that were evaluated by a panel of health experts. DASH diet is recommended by Abdullah