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Chapter 1: Introduction

**Abstract**

The food we eat will have a profound effect on our health. Everybody has a strong opinion, diverse assertions about What is Healthy Nutrition. Changes in diet help many health problems including obesity, diabetes and certain risk factors for cancer and heart disease. Diet planning is the science of how food and nutrition effect on human health. Therefore, People around the world seeking to maintain their weight by limiting junk foods and eating more nutrient foods. For this an automated Dietitian is required to help people improve their health.

Smart dietician bot is an AI system that can gather daily intake of calories, weight, height, age, working hours (Activity Level) and analyze the given data and consult as a real dietician. Most importantly this dietician can take health condition (like diabetes or cardiac patients) into account and suggest their meal plans and suitable workout routines. Furthermore, this provides full details of the nutritional formula required for the body and necessary number of calories to burn fat/maintain BMI, increase with the plan by answering some queries.

This is appropriate for users who need to improve their health. Also appropriate for users who need to prevent from certain risk factors and to have care and consultation. Also, people can be in touch with the nutritional formula required for their body.

Artificial intelligent bot become visible as an important research area in recent past. Study about existing work on dietician Artificial intelligent bot useful for construct, a new solution.

1.1: Project Background

To understand any complex system, at first, an abstracted high-level introduction of the subject and explanation of the architecture which perfectly considering the complex system and allows for a better understanding of details later is not only compulsory but also important. Therefore, in this section will cover the background research that I have conducted into different kind of chatbots and some of the advance technologies I’ve explored.

In Sri Lanka, we have become an overweight society. Our busy lifestyles and the abundance of convenience foods have fostered our expanding waistlines. Our society supports working long hours followed by responsibilities to our families, children and other things that take up time. Convenience food items and fast food restaurants provide a quick meal for people constantly on the go. An April 2010 Prevalence of overweight and obesity in Sri Lankan adults [3] report noted that “relatively high prevalence of overweight and obesity, particularly, abdominal obesity among adults in Sri Lanka which is a middle‐income country. Urgent public health interventions are needed to control the problem at an early stage.” The idea for this project was born when understanding the future risk of obesity and other related risk factors.

AI Bots (also known as Artificial Conversational Entity, chatbot) is a computer program or an artificial intelligence that conduct conversation via audio or

textual messages. [1]

In 1950, Alan Turing’s well-known article “Computing and Machinery and Intelligence” [2], which projected the Turing test as a criterion of intelligence that depend on the fact that a real written discussion with a computer program to imitate a human in a real-time written conversation with a human judge. The historic chatbots are ELIZA (1966) which was mimicked human conversations by pattern matching and substitution methodology however passed the turning artificial intelligence test and PARRY (1972) was more advance than ELIZA also called “ELIZA with and attitude”. From 1966 onwards, computer programmers and business owners understood the usefulness Bots can provide to end users, specially when the information can be categorized into concrete and predictable subjects. Modern chatbots are more complex and feature natural language processing that can learn from user inputs. They can access APIs to get information users such as news, weather, time etc. They can even process orders and make bookings entirely through a chatbot interface. Chatbots are well suited for mobile devices as messaging is at the heart of a mobile phone.

Generally, bots use Natural Language processing techniques to Input versus analysis and output. Natural Language Processing (NLP) is the study of letting computers understand human languages [3]. Without NLP, human language sentences are just a series of meaningless symbols to computers. Computers don’t recognize the words and don’t understand the grammars. NLP can be regard as a “translator”, who will translate

human languages to computer understandable information. Traditionally, users need to follow well-defined procedures accurately, in order to interact with computers. For example, in Linux systems, all commands must be precise. A single replaces of one character or even a space can have significant difference. However, the emergence of NLP is changing the way of interacting. Apple Siri [4], Microsoft Cortana [5] and Google Assistant have made it possible to give command in everyday languages and is changing the way of interacting. Assistant Photos

In this project uses the API provided by Microsoft called Language Understanding Intelligent Service (LUIS). It’s a well-developed REST API for Language Understanding.

1.3: Project Goal

We all know the adage, "You are what you eat." Maintaining your health is one of the first steps to managing weight, and a big step to maintaining your health is eating well every day.

Therefore the project Dietitian-Bot goal is to process diet plans and give some better recommendations according to user conditions and needs. This application includes meal plan management plus Assistant to respond in a timely fashion and be all round user friendly. Assistant is the chatbot of the meal plan app. User don’t have to go through the application to get their generated diet plans and suggested recommendations by changing tabs, button clicks etc. Assistant makes the user interaction as easy and fast as possible to ensure that the users time is not wasted and that they get what they want without any difficulty or misunderstanding

from the application in one place by asking some queries. The conversation should flow and always try to keep the user in control of the conversation. Ultimate aim of the project is to help people around the world to build a healthy society by consult as a real dietitian free of charge.

Chapter 7: References

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