SINGAPORE POLYTECHNIC
SCHOOL OF DIGITAL MEDIA AND INFOCOMM TECHNOLOGY

IT8302 AI-HUMAN INTERFACE

CA2

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1 Introduction

1.1 Description

Foodiebot is a food-related chatbot which provides nuggets of food-related information and nutritional content with added capability of providing whole meal recommendations based on individual preferences/ tastes.

1.2 Purpose

The chatbot serves to provide the following capabilities:

1. Provide meal plan suggestions based on nutritional requirements.
2. Provide food-related titbits e.g. trivia, jokes.
3. Provide nutrition value of food item.

2 Integration

The URL of the fulfilment webhook hosted in Heroku is https://foodiebot-api.herokuapp.com/. The Facebook interface is at http://m.me/111337007003924 and for Telegram is at http://t.me/foodiebotbot. The web integration is at https://bot.dialogflow.com/f56ec170-27ff-4724-a191-66c1f377f943.

2.1 Firebase

The webhook writes the recommended meal plan details to the Firebase database.

2.2 API

The webhook uses the Spoonacular REST API [2] which can be accessed at https://spoonacular.com/food-api/docs to retrieve food-related content as required by the intents of the chatbot. Specifically, 4 REST API functions are used, namely:

- Generate Meal Plan - Generate a meal plan with three meals per day (breakfast, lunch, and dinner).
- Get a Random Food Joke - Get a random joke that is related to food.
- Get Random Food Trivia - Returns random food trivia.
- Guess Nutrition by Dish Name - Estimate nutrients of dish based on title.

The table lists the mapping of each intent to the webhook function and the corresponding REST API function used for retrieving the required information:

:

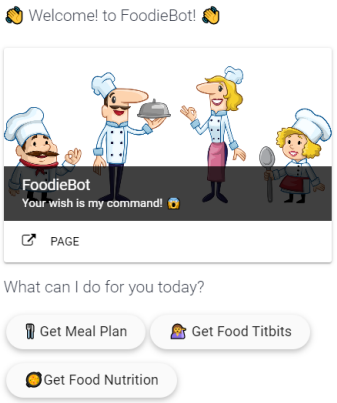
s/n	Intent	Purpose	WebHook Function	API
1	welcome	Greet user and offer services	welcome	-
2	fallback	Handles unexpected users' responses	-	-
3	mealplan-start	Gets meal plan recommendation based on user specified criteria i.e. timeframe (day/week), caloric target, diet type and excluded ingredients	getMealPlanInput	-
4	mealplan-getDietTypeYES	Get Diet Type information from user	getMealPlanInputDietTypeYes	-
5	mealplan-getDietTypeNO	If user selected not to specify Diet Type information	getMealPlanInputDietTypeNo	-
6	mealplan-getExcludedIngredients	Get ingredients to be excluded from user	getMealPlan	https://api.spoonacular.com/mealplanner/generate
7	foodtitbits-start	Gets food-related titbits i.e. food trivia information, food joke	getFoodTitBitChoice	-
8	foodtitbits-getTrivia	Get food trivia information	getFoodTrivia	https://api.spoonacular.com/food/trivia/random
9	foodtitbits-getJoke	Get food-related joke	getFoodJoke	https://api.spoonacular.com/food/jokes/random
10	foodnutrition	Gets food nutritional value based on user specified food keyword.	getFoodNutrition	https://api.spoonacular.com/recipes/guessNutrition

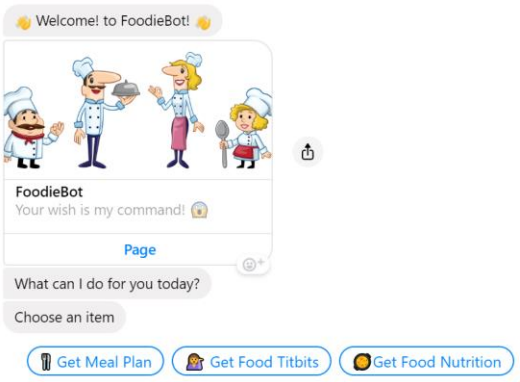
Table 1 – Intent-WebHook-API Mapping

3 Screenshots

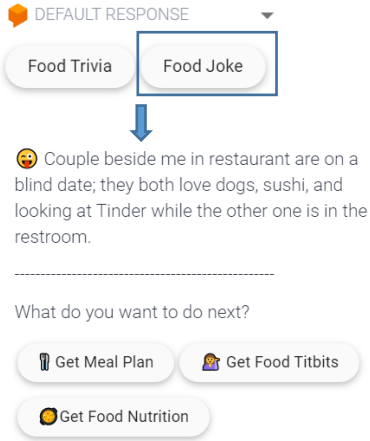
3.1 Chatbot Interaction/ Responses

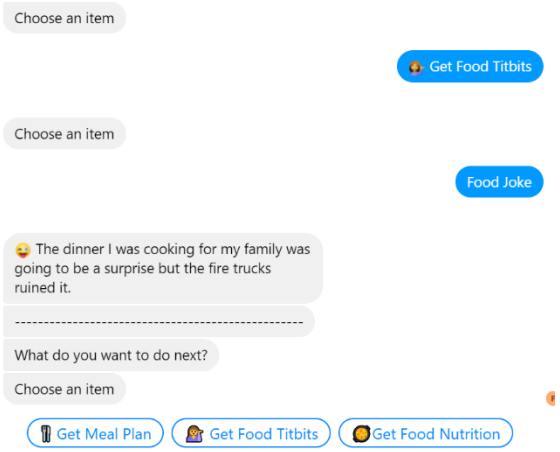
3.1.1 Main



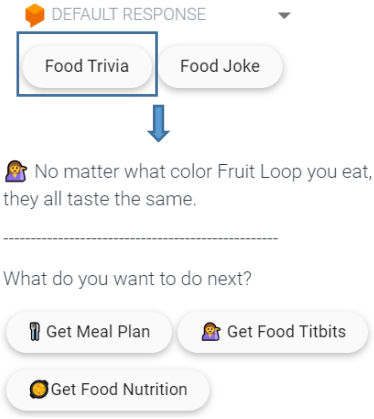


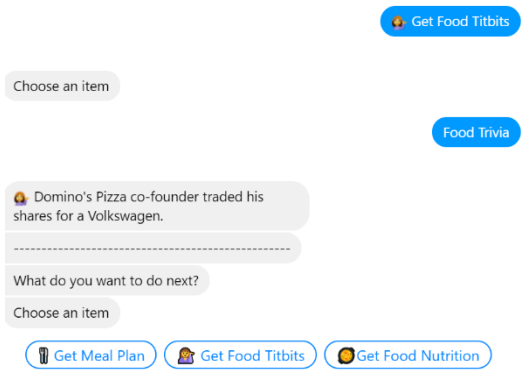
3.1.2 Get Random Food Joke



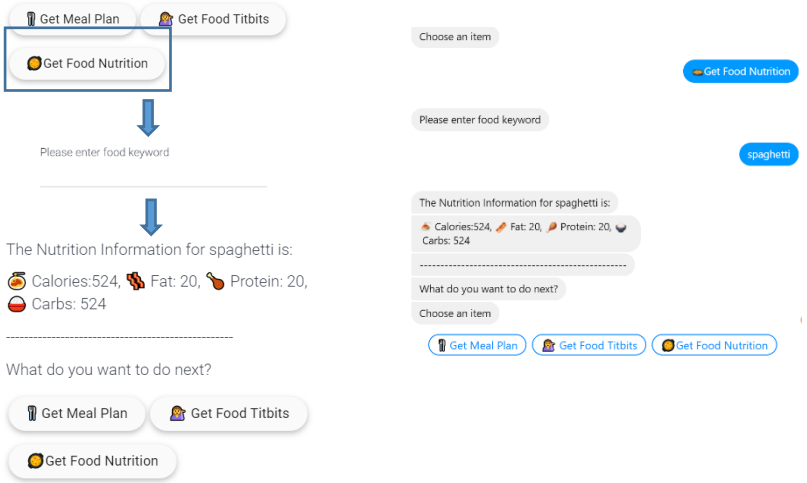


3.1.3 Get Random Food Trivia

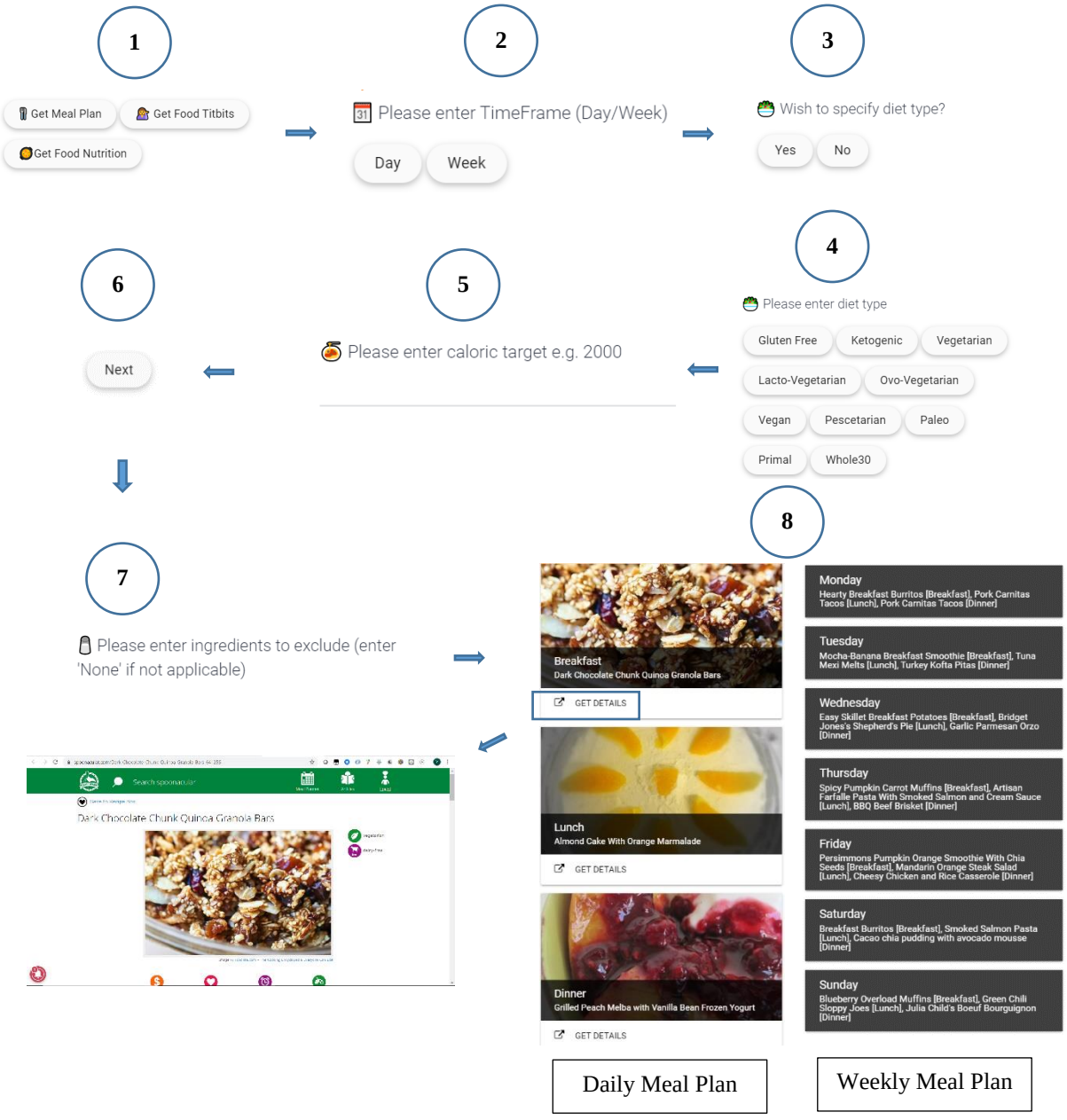




3.1.4 Guess Nutrition by Dish Name

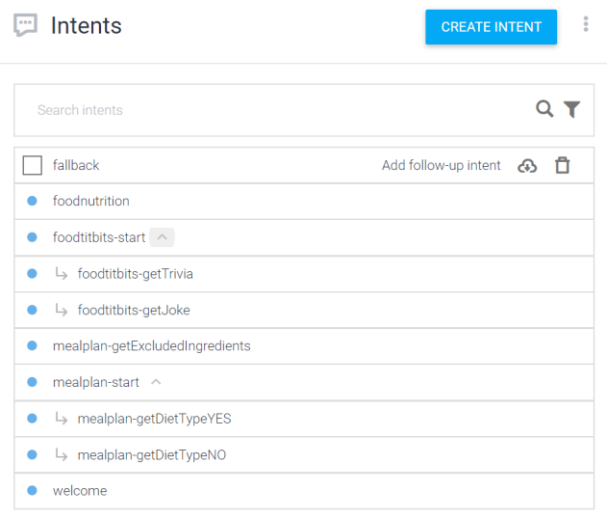


3.1.5 Generate Meal Plan

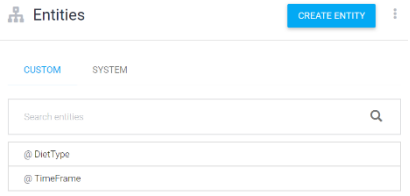


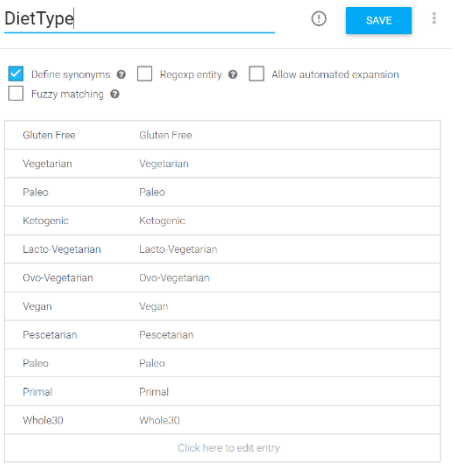
3.2 Intents/ Entities/ Contexts/ Training Data

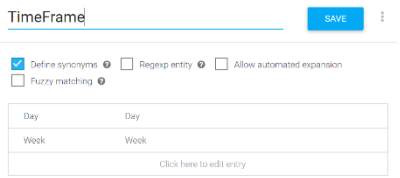
3.2.1 Intents



3.2.2 Entities







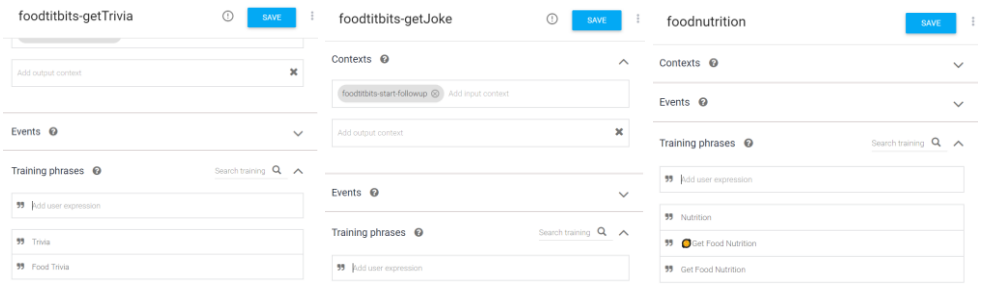
3.2.3 Contexts

s/n	Intent	Type	Input Context	Output Context
1	welcome	Welcome	-	initial
2	fallback	Fallback	-	-
3	mealplan-start	-	initial	mealplan-start-followup
4	mealplan-getDietTypeYES	Follow-up	mealplan-start-followup	mealplan-getDietType
5	mealplan-getDietTypeNO	Follow-up	mealplan-start-followup	mealplan-getDietType
6	mealplan-getExcludedIngredients	-	mealplan-getDietType	-

s/n	Intent	Type	Input Context	Output Context
7	foodtitbits-start	-	initial	foodtitbits-start-followup
8	foodtitbits-getTrivia	Follow-up	foodtitbits-start-followup	-
9	foodtitbits-getJoke	Follow-up	foodtitbits-start-followup	-
10	foodnutrition	-	initial	-

Table 2 – Intent-Context Mapping

3.2.4 Training Data



4 References

[1] DialogFlow Documentation https://cloud.google.com/dialogflow/docs/.

[2] Spoonacular API Documentation https://spoonacular.com/food-api/docs.