

# ***FIRST BITE*** – REQUIREMENTS DOCUMENT

*The user manual for our application **First Bite**, an iOS tool to help individuals with newborns and toddlers with their dietary needs and consumption.*

## **CMPT 276: HW2**

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# REVISION CHART

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Version	Primary Author(s)	Description of Version	Date Completed
Draft	Kelvin Jeff Winston	Initial draft created for distribution and review comments	June 16 <sup>th</sup> 2018
Preliminary	Leon Han	Second draft incorporating initial review comments, distributed for final review	June 18 <sup>th</sup> 2018
Final	Everyone	First complete draft, which is placed under change control	June 20 <sup>th</sup> 2018
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Revision 3	Kelvin Leon	Revised draft, revised according to completion of iteration 1.	Jul 3 <sup>rd</sup> 2018
Revision 4	Jeff Leon	Revised draft, revised according to completion of iteration 2.	Jul 17 <sup>th</sup> 2018

# 1. INTRODUCTION

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## 1.1 Purpose

The purpose of this application is to assist and guide individuals who are seeking advice or guidance on baby nutrition. Working alongside with certified dieticians in British Columbia, the application will be a tool to track dietary intakes, give guidance or information based on professional advice, and provide dynamic feedback based on dietary habits, tracking, and analytical data.

## 1.2 Overview

This user manual will provide the initial requirements of the application, *First Bite*, such as it's intended audience list, detailed features and functional requirements, non-functional requirements, and along with example stories that will give insight in the application architecture and interactions to be expected in the final product.

## 2. INTENDED AUDIENCE LIST

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### 2.1 Overview

The intended audience for our application are mainly parents. More specifically, those who are new to parenthood whose infants can fall into an array of ages and groups (0 – 36 months). The application will aim to be easily accessible and accommodate for those unfamiliar with the iOS interface and systems, while still providing sufficient features to more experienced users.

Parents, including mothers, fathers, guardians, and so on who require more expertise or knowledge in their child's nutrition will find our application helpful and accessible. It will be a tool to assist them in their lives and parenting journey. The application will give guidance, tools, and advice necessary to answer most of an individual's concerns and questions on baby nutrition.

## 3. FEATURES & FUNCTIONAL REQUIREMENTS

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### 3.1 Food Diary (Logging)

#### 3.1.1 Purpose

The food diary will keep track of their child's dietary intake, the logging feature will be able to provide information to parents. This includes the logged information, their child's eating habits, reactions to food, and record information that will be used in our application to provide dynamic feedback.

It can be used alongside with the utilities and overview feature of the application, this will allow the parent to interact dynamically with the information they are collecting as well as display their child's statistics visually in an easy and convenient manner.

#### 3.1.2 Specification

The logging feature will allow for parents to log information related to feeding their child. This involves breastfeeding consumption which will be done with a timer function to comparatively measure consumption. Further logs will involve consumption of liquids such as formula that can be measured in quantities (ml, oz, etc). It will also have a solids food group that can be recorded quantitatively, split into four different food groups.

Each log will have the ability to delete, edit, or provide additional reaction notes to each log. It will provide the time that the item was logged by default, but with the option to change the time in case of a missed log or correction. The logs will be able to be compared and have a scrollable timeline to revisit previous stored logs sorted by most recent log.

Logs can records child's reaction in the form of the notes and satisfaction to food items, which will interact with the utilities and overview feature to display their child's statistics visually.

### 3.2 Profiling

#### 3.2.1 Purpose

Profiling will provide an incentive and a healthy way to be interactive with the application. To make it beyond a stand-alone diet tool, this feature will provide additional information that can be used in conjunction with other features to provide dynamic feedback, such as the trends function.

It also allows personalization of their application and to incentivize the user to return and continue using the application.

### **3.2.2 Specification**

The user will be able to create a profile that stores their child's age, height, gender and weight. It will also allow the user to access their camera, or upload images from their camera roll to set as their infant profile picture.

It will also provide milestones and achievements for parents (i.e. first solid food, happy birthday, etc.). A records page will be kept which can record the growth of their child, any medical histories or notes, and upload pictures as references. An optional BMI calculator will be provided based on the infant's weight, height, gender, and age.

## **3.3 Dietary Guideline**

### **3.3.1 Purpose**

Using official documents and working alongside dietitians of B.C. the application will provide a database for the user to interact and learn from. It will answer common concerns or questions that revolves around baby nutrition and help both the user and dietitians to introduce inexperienced parents to the subject in an informative and accessible way.

### **3.3.2 Specification**

Given the project's resources, information will be classified and categorized into groups which will be 'topics'. The user will interact and browse pages to view different articles and guidelines. Articles will provide relevant information and links to other articles.

Users can also bookmark pages important pages which is saved to the database, and will have the ability to share specific topics or pages

Articles and topics will contain information regarding to their child's health, and dietary information. It will be divided into different age groups and provide the respective information.

## **3.4 Utilities and Overview**

### **3.4.1 Purpose**

To provide dynamic feedback and allow users to see progress and monitor their child's dietary habits. This allows for users to adapt and aid in their infant's progression. To provides helpful tool to users and aid them in the development of their child while promoting healthy dietary habits.



### **3.4.2 Specification**

The checklist feature will allow the user to create custom tasks. Users can also schedule reminders to do a push notification on the device to remind them at the appointed time. Tasks will require a title, and optionally notes on the task as well as a specified timed deadline.

The food satisfaction module will display all foods the child consumed during the week and scale them by how much the child enjoyed or did not enjoy the food. Dynamic feedback will inform users if perhaps their child needs more exposure to certain foods.

In conjunction of the logging and profile functions, the application will display weekly overview and represent the information in simple diagrams and statistics to view. Using diagrams such as charts, and pie graphs to for food representation feedback to visualize for the user. An example user story can be found in 5.3.1 – 5.3.2.

Furthermore, the feature will be able to export the overview of a specified time period into a condensed, informative PDF that can be used to be kept as records or as a concise way to share quick overviews.

## **3.5 Database and Server**

### **3.5.1 Purpose**

Most users are not limited to only one device, having syncing and storage features will provide the ability to use the application with more than one device, and also accommodate to external accidents such as device failure.

It will also allow the user to share information for quick overviews, that can be used alongside with dieticians and peers.

Allows for better maintenance, such as pushing updates to guide articles, etc

### **3.5.2 Specification**

Using Cloud Firestore, this feature will backup key data from the user such as their profiles, logs, and statistics which can stored or retrieved. To do this, the user needs to first create an account, via Gmail, Facebook, etc. Then their data will be stored in the servers where the user will be able to retrieve the same data on a different device after authenticating themselves.

The user will be able to export the infant's information from the statistics feature into a condensed, informative CSV file. It will provide a quick overview on the specified time period of choice and can be used over a network connection in the form of Wi-Fi, cellular data, or AirDrop. An optional email address can be used for emailing the file.

## 4. NON-FUNCTIONAL REQUIREMENTS

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### 4.1 Performance

- The application, *First Bite* will work on any device with iOS version 7.0 or above and will need at least 150MB of allocable storage.
- *First Bite* must take less than 5 seconds to boot.
- *First Bite* must take less than 50MB as a background process.

### 4.2 Software Systems

#### 4.2.1 Reliability

- The application shall have a failure rate of one in five thousand.
- *First Bite* must reboot itself in less than 5 seconds if it fails or crashes.

#### 4.2.2 Availability

- 90% of *First Bite*'s infant nutrition information and guidelines must be available offline.
- At least 80% of *First Bite*'s function must work without internet connection

#### 4.2.3 Security

- *First Bite*'s user profile and user location data must be stored in the users' devices
- All data transfer must be done within Local Area Network of devices or wirelessly via Bluetooth and email.

#### 4.2.4 Maintainability

- Security and bug fixing updates must be provided every 3 months.

#### 4.2.5 Portability

- *First Bite*'s user interface display ratio must be respectively the same across different device resolutions.
- *First Bite* must be able to be accessed by different devices on the same apple account.

## 5. EXAMPLE TUTORIALS

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### 5.1 Food Diary Example

#### 5.1.1 User Stories

As a parent, I want to be able to record the food I give my child, so I can look upon it later and review what I feed my child on a regular basis.

As a user, I want to be able to create entries quickly without typing too much because I want to save time and not tediously do repetitive tasks.

As a parent, I want to be able to record my child's satisfaction and reactions to the food after they have consumed it

#### 5.1.2 Usage Scenarios

To create an entry or log, the user will be able to press on a 'add' button (or symbolled with a + sign). Afterwards, a selection page will appear on the screen which will allow the user to select between Solid Foods, Breastfeeding, and Formula. From their decision there will be a corresponding form page to enter in detail for the log.

1. Solid Food

The user then selects which food group the solid belongs to (meats, grain, dairy, vegetables & fruits, or baby food). They can adjust the measurement to grams, kgs, pounds, or cups. Using a slider, they can adjust the quantity or type in the number themselves.

2. Breast Feeding

The user starts a timer when they begin breast feeding, with separate individual timers for the left and right breast. They can press a button to pause the timer, and a button to resume the timer.

3. Formula

The user can use a slider to control the measurement and change the type of measurement. The user can also alternatively enter it in themselves via keyboard.  
(See Image 5.4.1B)

After the user has completed entering details, they will be able choose the time and day (it will default to the current time if not changed) then, to submit it by pressing the 'ADD ENTRY' button at the bottom of the page. From there the user can view the current day diary and see their added log at the specified time. (See Image 5.4.1A)

Users will be able to edit and delete the log by swiping left on the cell, users will be able to go back and record the child's reaction and satisfaction to the food after digestion.

## **5.2 Dietary Guideline Example**

### **5.2.1 User Stories**

As a parent, I want someone who can tell me what to feed my newborn because I am unsure what is the best for them.

As a parent, I want to be able to visit relevant articles or pages for my specific question because I want an answer without searching for it in a whole text document.

As a parent, I want to be able to bookmark important articles and reference them later when I need it

### **5.2.2 Usage Scenarios**

Upon booting the application, the user will be able to press the button to view the Dietary Guideline page. As a result, the user will be able to view a page with topics that display an icon and a picture corresponding to the topic name. The user will then be able to scroll through the icons and select which article to browse. After pressing a topic, relevant article titles will be shown, and the user can then further specify their browsing. After selecting an article, the user will be met with an interactive article or text page for reading. The user then has features such as bookmarking the page, which can be done by pressing the bookmark icon and it will be added to a 'bookmarks page' which is accessible by a tab on the top right.

## **5.3 Utilites & Overview Example**

### **5.3.1 User Stories**

As a parent, I want to see the overview of my infant and summary of their development.

As a parent, I want to see the results of my tracking because I want to know what I can do better.

As a parent, I want to have a schedule checklist that will alert me at the appointed time.

### **5.3.2 Usage Scenario**

The user will be able to access the Utilities and Overview section through the navigation bar. The user can choose the specific time period (measured in weeks) to view. The page will then correspondingly calculate and display the trends and diagrams based on the week. For example, there will be a pie chart to show the proportions of the four food groups under solid foods. A user can notice that they are feeding too little vegetables and fruits to their child and too much grains. As a result, they can change their meal plan accordingly for the upcoming week. There will be other diagrams, such as a user will be able to see their average eating schedules and what time they feed their child. This way they can predict and determine when their child will be hungry. Users will can create a checklist where they can create a task. Tasks will require a title, and

optionally notes on the task as well as a specified timed deadline. They can then set up a time for reminders in the dropdown menu and a push notification will remind them at the appointed time.

## 5.4 Application Mockups

### 5.4.1 Food Diary Mockup & Formula Log Creation



## 6. GLOSSARY

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**Baby Formula** - manufactured food designed for babies and infants under 12 months of age, usually in a powder form and prepared by mixing with water; typically used as a safe complimentary food and suitable breast milk substitute

**BMI** - Body Mass Index, a relationship between a person's height and weight that measures underweight, overweight, and obesity

**Breastfeeding** - feeding of babies and young children with milk from a woman's breast

**Diet** - food and drink considered in terms of its qualities, composition, and its effects on health

**Dietary** - regulated allowance of food, relating to diet

**Dietician** - person who is an expert in nutrition or dietetics

**Nutrition** - the science or study of, or a course of study in, nutrition, especially of humans.