

Lab 1 Outline – BabyBites

Asia Acosta

Old Dominion University

CS411W: Professional Workforce Development II

Professor Thomas J. Kennedy

September 24, 2025

Table of Contents

1 Introduction	2
1.1 Societal Problem	2
1.2 Solution - BabyBites	2
2 Product Description	3
2.1 Key Product Features and Capabilities	3
2.2 Major Components (Hardware/Software)	5
2.2.1 Hardware	5
2.2.2 Software	5
3 Identification of Case Study	6
3.1 Case Study Group	6
3.2 What it will be used for	6
3.3 Future Use	6
4 Glossary	7
5 References	8

Listing of Figures

Figure 1: Competition Matrix	4
Figure 2: Major Functional Components Diagram	5

Listing of Tables

[This space intentionally left blank]

1 Introduction

1.1 Societal Problem

The process of transitioning a baby from milk to solid foods and eventually, to more complex meals appropriate for toddlers is a crucial, yet challenging, phase for many parents and caregivers.

Typically, babies begin this transition around six months, starting with pureed foods before gradually moving to more textured solids¹. This can be overwhelming for parents and caregivers, as it can be difficult to know which foods are safe at various stages, how to prepare them, and when to introduce certain utensils.

This transition goes beyond simply feeding, it is about fostering safe, balanced nutrition while supporting babies and toddlers in developing essential eating skills and independence.

1.2 Solution - BabyBites

Introducing BabyBites, the ultimate mobile-first web application to simplify and safeguard your babies' and toddlers' feeding journey. From the first spoonful of purees to mastering utensils, BabyBites takes the stress out of transitioning from milk to solids and beyond. Designed to reduce overwhelm, the app ensures balanced nutrition and helps babies and toddlers develop healthy eating habits.

This challenging transition is made easier with BabyBites, complete with features such as: a personalized baby profile, a food tracker, a food database, daily reports, and alert notifications.

BabyBites provides parents and caregivers with expert-backed resources, meal preparation tips, alerts about allergies, choking hazards, and developmental milestones that will give parents and caregivers the peace of mind and the confidence to nurture their child's growth.

Lab 1 Outline - BabyBites

2 Product Description

BabyBites is the ultimate mobile-first web application to simplify and safeguard your babies' and toddlers' feeding journey. From the first spoonful of purees to mastering utensils, BabyBites takes the stress out of transitioning from milk to solids and beyond. Designed to reduce overwhelm, the app ensures balanced nutrition and helps babies and toddlers develop healthy eating habits.

This challenging transition is made easier with BabyBites, complete with features such as: a personalized baby profile, a food tracker, a food database, daily reports, and alert notifications.

BabyBites provides parents and caregivers with expert-backed resources, meal preparation tips, alerts about allergies, choking hazards, and developmental milestones that will give parents and caregivers the peace of mind and the confidence to nurture their child's growth.

2.1 Key Product Features and Capabilities

BabyBites will:

- Guide Parents/Caregivers through food transitions
- Offer food database and nutrition information through FoodData Central API
- Track food/milk intake
- Provide food preparation guidance
- Provide access to expert resources
- Send alert notifications
- Generate daily reports

BabyBites will not:

- Prepare or Deliver Meals

Lab 1 Outline - BabyBites

- Create Personalized Meal Plans
- Provide Real-Time Emergency Support
- Identify or Diagnose Medical Conditions
- Track Non-Feeding Related Milestones
- Provide Communication with Healthcare Providers

[This space intentionally left blank]

Lab 1 Outline - BabyBites

Features	BabyBites	Baby Tracker	Huckleberry	Solid Starts	Glow Baby	Baby Connect
Create Baby Profile	✓	✓	✓	✓	✓	✓
Track Food Intake	✓	✓	✓	✓	✓	✓
Food Database	✓	✗	✓	✓	✓	✗
Food Nutrition Information	✓	✗	✗	✓	✗	✗
Utensil Usage Guide	✓	✗	✗	✓	✗	✗
Meal Preparation Guide	✓	✗	✗	✓	✗	✗
Expert Resources	✓	✗	✓	✓	✓	✗
No Ads	✓	✗	✓	✓	✗	✓
Mobile Website	✓	✗	✗	✗	✗	✓
Mobile App	✗	✓	✓	✓	✓	✓
No paywall	✓	✗	✗	✗	✗	✗
Choking Hazards	✓	✗	✗	✓	✗	✗
Allergen Information	✓	✗	✗	✓	✗	✗
Daily Reports	✓	✗	✗	✗	✗	✗
Alert Notifications	✓	✓	✓	✓	✓	✓

Figure 1: Competition Matrix

[This space intentionally left blank]

Lab 1 Outline - BabyBites

2.2 Major Components (Hardware/Software)

2.2.1 Hardware

- A computer or mobile device with internet access

2.2.2 Software

- **IDE:** VSCode
- **Project Management:** GitHub Issues
- **Version Control:** GitHub
- **Front End:** React
- **Back End:** Django
- **Database:** PostgreSQL, FoodData Central API
- **Testing:** PyTest, Jest
- **Documentation:** PyDoc, JSDoc
- **Hosting:** AWS

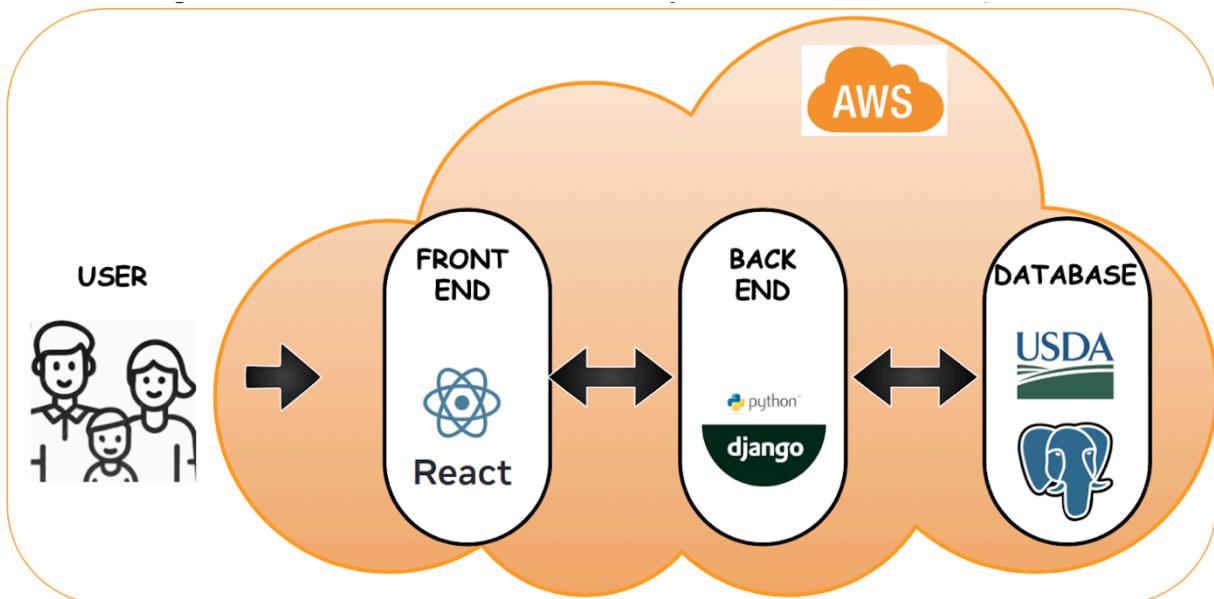


Figure 2: Major Functional Components Diagram

3 Identification of Case Study

This product is being developed for parents and/or caregivers of young children who are transitioning from liquid and pureed foods to solid foods. The reason this application is being developed is to help ease the transition for the new parents and/or caregivers. Other people who might use this in the future could be healthcare providers and doctors, babysitters, and more.

3.1 Case Study Group

- New parents / caregivers who are trying to transition their child's diet and eating habits:
 - Milk to purees
 - Purees to solids
 - Utensil usage

3.2 What it will be used for

- Provide the following essential resources to new parents / caregivers:
 - A food database to search relevant information on chosen foods
 - A food tracker to log what has been fed to the child
 - A daily report to summarize information pertinent to the child
 - Preparation tips to assist feeding different types of food
 - Supplemental expert-backed resources

3.3 Future Use

- Experienced parents
- Daycares

[This space intentionally left blank]

4 Glossary

Baby Profile - A user-created profile to categorize their children within the application.

Daily Report - A summary of user milestones and pertinent information regarding their child (i.e. food consumption, milestones, allergies).

Dashboard - The home page of the user. It features shortcuts to relevant pages and displays daily reports.

Filter - A sorting function that will allow specific items to be displayed based on input.

Food Database - A comprehensive database that allows users to look up various food, view nutritional information and access preparation tips.

Food Tracker - A log the user can modify to maintain a history of foods given to the child.

FoodData Central API - USDA's database for food that will be used as a source of information for the BabyBite's food datatable.

IDE (Integrated Development Environment) - A software application, such as VSCode, that provides tools for writing, testing, and debugging code.

Notification - An alert that will notify the user of important information (i.e. allergies, choking hazards).

Search - BabyBites' food searching feature.

User - Any person who has created an account and utilizes the application.

[This space intentionally left blank]

Lab 1 Outline - BabyBites

5 References

American Academy of Pediatrics. (n.d.). Infant Food and Feeding.

https://www.aap.org/en/patient-care/healthy-active-living-for-families/infant-food-and-feeding/?srsltid=AfmBOoooqF2B8Yv9QLX0-zkfUPiVyOd7sYSXx_IwdNwDXoQY8jWRW96I

Centers for Disease Control and Prevention. (2024, October 10). *Choking hazards*. Infant and Toddler Nutrition.

<https://www.cdc.gov/infant-toddler-nutrition/foods-and-drinks/choking-hazards.html>

CleanPNG. (n.d.). Amazon Web Services (AWS) logo [Digital image].

<https://www.cleanpng.com/png-amazon-com-logo-amazon-web-services-amazon-elastic-6077407/>

Cunningham, W. (2001). Manifesto for Agile Software Development.

<https://agilemanifesto.org/>

EPAM SolutionsHub. (2022, June 10). Risk Management in Software Engineering.

<https://solutionshub.epam.com/blog/post/risk-management>

EvelynsPearls. (2025). Fruit Clipart Cute Fruit. [Digital art]. Etsy.

https://www.etsy.com/listing/1690787694/fruit-clipart-cute-fruit-png-cute-food?ref=yr_purchases

EvelynsPearls. (2025). Vegetable Clipart Cute Vegetable. [Digital art]. Etsy.

https://www.etsy.com/listing/1690789328/vegetable-clipart-cute-vegetable-png?ref=yr_purchases

Federal Trade Commission. (2013, January 17). Children's Online Privacy Protection Rule (COPPA). <https://www.ftc.gov/system/files/2012-31341.pdf>

Lab 1 Outline - BabyBites

Freepik. (n.d.). Make family icon outline gradient [Digital image].

https://www.freepik.com/premium-vector/make-family-icon-outline-gradient_122127985.htm#from_element=detail_alsolike

Kuo, A. A., Inkelas, M., Slusser, W. M., Maidenberg, M., & Halfon, N. (2010). Introduction of Solid Food to Young Infants. *Maternal and Child Health Journal*, 15(8), 1185–1194.

<https://doi.org/10.1007/s10995-010-0669-5>

LovelyLovelyScribble. (2025). Kawaii Cute Fruit. [Digital art]. Etsy.

https://www.etsy.com/listing/1489955189/kawaii-cute-fruit-png-bundle?ref=yr_purchases

Meta. (n.d.). React logo [Digital image]. <https://react.dev/>

National Institute of Standards and Technology (NIST). (n.d.). USDA logo [Digital image].

<https://www.nist.gov/image/usda-logo>

Norlyk, A., Larsen, J. S., & Kronborg, H. (2019). Infants' transition from milk to solid foods - the lived experiences of first-time parents. *International Journal of Qualitative Studies on Health and Well-Being*, 14(1). <https://doi.org/10.1080/17482631.2019.1693483>

OpenGIS. (n.d.). Django Python logo [Digital image].

<https://www.opengis.ch/django-python-logo-2/>

PostgreSQL Global Development Group. (n.d.). PostgreSQL logo [Digital image].

<https://www.postgresql.org/>

Refineddigitalbites. (2025). Baby fruits and vegetables. [Digital art]. Etsy.

https://www.etsy.com/listing/1704009895/baby-fruits-and-vegetables-22-jpg-images?ref=yr_purchase

Roberts, M., Tolar-Peterson, T., Reynolds, A., Wall, C., Reeder, N., & Rico Mendez, G. (2022, January 26). The effects of nutritional interventions on the cognitive development of

Lab 1 Outline - BabyBites

preschool-age children: A systematic review. Nutrients.

<https://PMC8839299/>

Ward, J., & Bailey, D. (2024, December 10). What is Agile Software Development?. Agile Alliance. <https://www.agilealliance.org/agile101/>

World Health Organization. (2023, December 20). Infant and young child feeding.

<https://www.who.int/news-room/fact-sheets/detail/infant-and-young-child-feeding>

[This space intentionally left blank]