



Baby Words Tracker

Sprint Planning Document (Sprint 1)

Sprint Goal Backlog (Sprint 1)

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Cloie Dale, Marcelo Torres, Gwynevere Deterding, and Robert Powell

High-level Project Overview

Project Mission:

- Baby Words Tracker (BWT) is a mobile app that allows parents to track their child's speech through text, audio, and video. This data will be provided to the University of Alabama's Language Education & Cognitive Science Lab to further child speech development research.

Problems We Are Solving:

- Parents want the ability to track their child's progress as they learn their first language(s).
- Existing products for early language learning either are only used in a lab setting or only deal with pre-words speech
- Currently, research into first language learning is extremely limited, so a product that makes parents voluntarily gather data would allow for major progress.

Project Overview (High-Level Features):

- **Android and iOS Application:**
 - **Sign-in/up:** Users should be able to sign in with email/password, Google, or Apple ID.
 - **Profile:** Profiles will include contact information and their children's data. Child data includes their name, birthday, and any input data.
 - **Home Page:** Home page will allow the user to navigate to the Input page, Statistics page, Video Streaming page, or Profile page
 - **Input Page:** Input page will allow the user to input words or sentences that their child utters, or upload a video of their child speaking

- **Statistics:** Users should be able to see basic visualizations of each of their children's data. This will include statistics like words learned per day and the total number of words their child knows. The part of speech and definition for each word should also be given.
- **Video Streaming:** Users should be able see any videos that they upload to the platform. These videos should be tagged with the new words spoken in each clip.

- **Researcher Dashboard**

- Separate app interface for researchers to see all data input from any parent user. They should be able to get basic statistics, raw data, and all video and audio inputs tagged with the child that the data is for.

- **Backend Services**

- **Realtime Database:** A Firestore database will be used to hold parent, child, researcher, and words data.
- **Hosting:** The app will be hosted on firebase.
- **Authentication:** Use Firebase Authentication for sign in/up and account management.

Sprint 1 Planning

Sprint 1 Goal:

For sprint 1, we wanted to get a minimal viable product (MVP) up. We determined, after consulting with our sponsor Dr. Hsin, that a MVP would include being able to sign in, add new words to a child's word tracker, and see basic data visualizations. For this to be possible we needed a functioning database, the basic UI design, a statistics page, and authentication. This sprint does not include video upload and streaming, a user interface for researchers, or the multilingual features needed to make the product complete.

Sprint 1 Deliverables:

- 1. Research the tools to be used in this project.**
- 2. Setup the Firebase hosting.**
- 3. Setup the Firebase authentication.**
- 4. Setup the Firestore Database.**
- 5. Stand Up Basic App Structure in Flutter**
- 6. Integrate Database and Flutter App.**
- 7. Decide on App Color Scheme and Branding**
- 8. Get Functional Pages to MVP State (Stats and Word Adding)**

Sprint 1 Deliverables Detailed:

- **Research the tools to be used in this project:**
 - **Assigned:** All team members
 - Research and read through all of the necessary documentation for the tools to be used throughout the project. Specific research needs will depend on the goals that that team member is working on.

- **Setup the Firebase hosting:**

- **Assigned:** Marcelo Torres
- Setup and deploy Firebase account including android, iOS, and web app.

- **Setup Firebase Authentication**

- **Assigned:** Marcelo Torres
- Handle initial authentication setup for the app using Firebase Authenticator. Authentication should allow a user to register, sign in, and change their profile as needed. Any changes from authentication should be reflected in the database.
- Any changes from authentication should be reflected in the database.

- **Setup the Firestore Database.**

Assigned: Cloie Dale

- Handle the initial setup of Firestore and design of the database. The design should include the needed collections, fields, and any subcollections as well as a plan on how collections should relate to each other.
- Decide on and implement firestore security rules with input from authentication.

- **Stand Up Basic App Structure in Flutter**

Assigned: Robert Powell and Gwynevere Deterding

- Going from the base project generated by flutter to a multi-page structure with dependency injection and named paths. Characterised by learning a lot about how flutter works

- **Integrate Database and Flutter App.**

Assigned: Marcelo Torres and Cloie Dale

- Implement basic CRUD functionality within the app using a model, repository, services framework. Models reflect the database design into the code repository. Repository functions communicate directly with the database to create, read, update, and delete data. Services are tools to be used by the front end team to implement the app's logic (ex: get the number of words a child knows).

- **Decide on App Color Scheme and Branding**

Assigned: Whole team with sponsor

- Decide on color scheme and branding based on sponsor needs
- Create a mockup of the app user interface in Canva for sponsor approval
- Design UI to be user-friendly and match the color scheme and branding determined with our sponsor

- **Get Functional Pages to MVP State (Stats and Word Adding)**

Assigned: Robert Powell and Gwynevere Deterding

- Use Syncfusion for stat display and services designed by Cloie and Marcelo for database integration.
- For the Stats page, MVP is defined as the ability to display a graph of words learned over time for the current user's child.
- For Word Adding, MVP is the ability to add word trackers to the current user's child and spell check their input. Users are able to input multiple words/sentences at once into a text box which will be spell checked and parsed into individual words for storage in the database.