



Project Plan Presentation

Mobile App for Remote Recording

The Capstone Experience

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*From Students...
...to Professionals*

Project Sponsor Overview

- MSU Linguistics works in the science of language sounds, structures and meanings
- They also focus on variations in language
- Research and field work is a key aspect of the linguistics program leading to large amounts of audio data



Project Functional Specifications

- The goal of our project is to bring native language features to MSU Linguistics mobile app for remote recording
- We are redeveloping the current Flutter app into Kotlin for Android and Swift for iOS
- Modular code to accommodate multiple research projects with different needs
- Create non-programmer friendly documentation for easy customization



Project Design Specifications

- Record high quality acoustic audio and upload images
- Accessibility for non-English speakers, those with low literacy, and participants unfamiliar with cellphone technology
- Modular code to streamline modification
- Clear documentation for non-coders



Screen Mockup: Profile Management



Screen Mockup: Audio Recording and Image Upload



Screen Mockup: User Statistics



Screen Mockup: Weekly Progress



Screen Mockup: Recording History

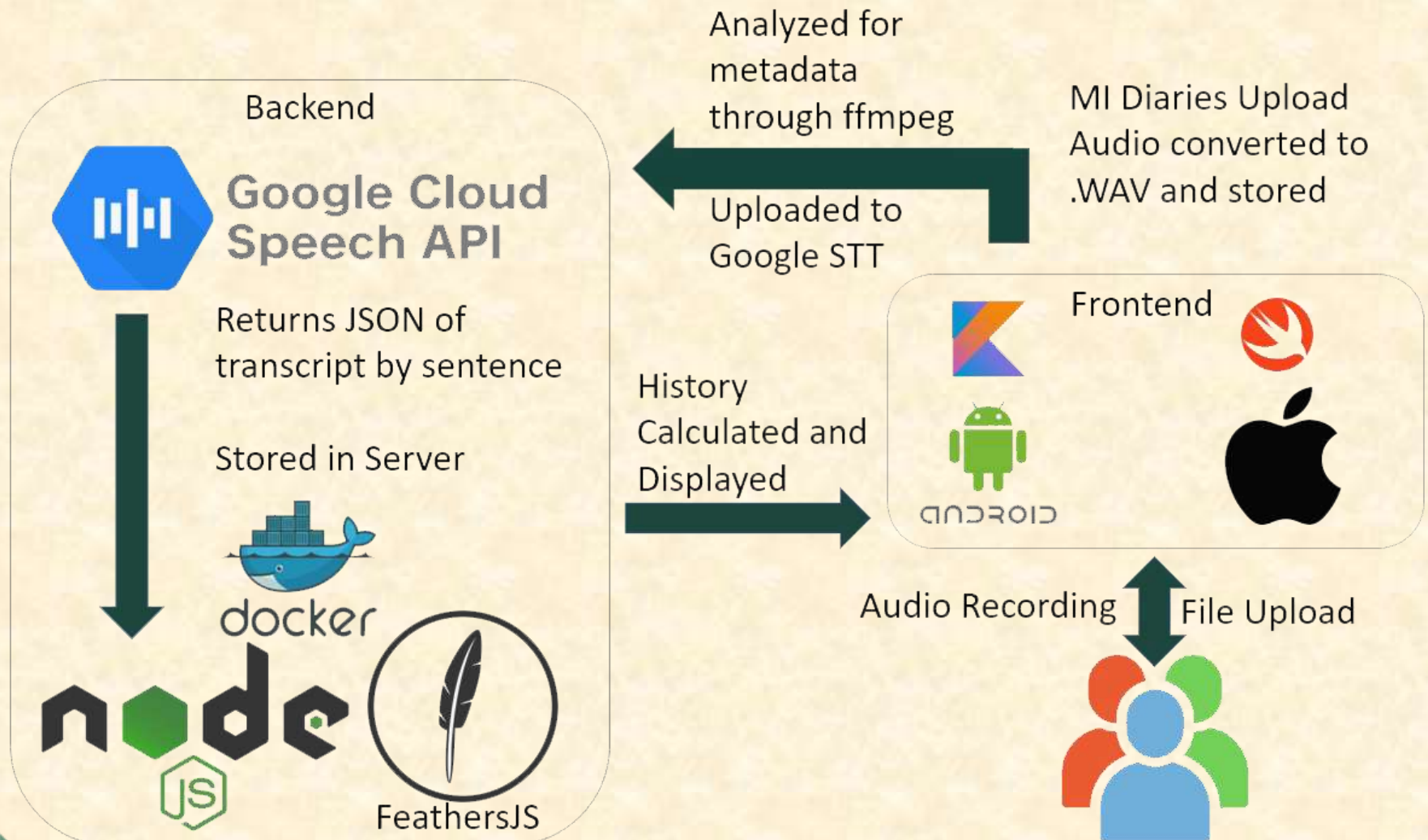


Technical Specifications

- Redevelopment of the current Flutter mobile app in Swift and Kotlin
 - Create an in-app sign up process
 - Enable multitasking (recording while is in background)
- Modular design for researchers and non-coders
 - Simple, universal design
 - Heavy documentation
- Gamification
 - Simple mode for users such as children who need it



System Architecture



System Components

- Software Platforms / Technologies
 - Backend
 - Docker
 - NodeJS with FeathersJS framework
 - Google Cloud Speech API
 - Frontend
 - Swift (iOS)
 - Kotlin (Android)



Risks

- **Modular Software**
 - **Description:** It is required by the clients to create a modular software for people who have little coding experience
 - **Mitigation:** The team needs to make sure that heavy documentation is written for the users to understand. Also, a format must be created which follows both app store standards and allows for one variable to change application assets
- **Migration from Flutter to Swift and Kotlin**
 - **Description:** The team will need to migrate from Flutter, the original software development kit, to Swift for iOS development and Kotlin for Android development
 - **Mitigation:** The team will need to carefully read through documentation of migration from Flutter to Swift/Kotlin.
- **Regression of Audio Quality**
 - **Description:** Since we are migrating from Flutter to Swift/Kotlin, the audio quality may differ when it's recorded in the mobile applications
 - **Mitigation:** The team will need to do actual research on how to obtain high quality audio for iOS and Android side of development
- **Inter-operativity and App Store Updates**
 - **Description:** The current MI diaries app is an active platform being used by researchers. The native versions of these apps will be pushed as an update in the future.
 - **Mitigation:** To avoid interruptions in service the team is striving to make the versions inter-operative with the backend currently in place, allowing multiple versions of the app to be in use without having to have multiple servers running and redundant data being stored among them. This also avoids the issue of having to merge the two servers in the future and dealing with legacy clients.



Questions?

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