\\

**Capstone Proposal: Sign Language Learning App**

Isabella L. Boudreaux

Neumont Computer Science

Paul Fox

June 13, 2024

**Topic**

My project will be a Sign Language learning app where users will be able to take courses varying from different levels of Sign Language. Users can take lessons alone where they can move onto harder or more difficult levels until they’ve learned as much as they want. They will have access to a dictionary, a profile of their progress, and be able to communicate with other learners. The app will also consist of Sign Language teachers that hold virtual classes either 1-on-1 if requested or have customized group video calls for their desired hours. Teachers will have profiles showcasing their background, how they like to teach their course, and any address if they hold in person classes. Users will also have a map where they can look at nearby in-person teachers to connect with.

**Core Requirements**

* User log in
* User profiles (accessibility to others depends on user preference)
* Menu with lists of activities (courses, quick look-up dictionary, search bar, map, etc.)
* Lesson tabs (beginner, intermediate, advanced)
* Lesson tabs with categories (colors, numbers, letters, questions, facial expressions, etc.)
* Lessons (pictures, words, some videos to demonstrate signs/facial expressions)
* Lesson results/progress at the end of each lesson
* User Profiles
  + Bio for users to put information they’d like
  + Contact section (Users can add any or no contact information for themselves)
  + Progress (Lessons done/not done and accuracy)
  + Customizable profile (profile picture, username, etc.)
  + Privacy settings (How others view another’s profile)
  + General user stat for each lesson (How many they got right out of the expected or preferred amount to advance to the next lesson)
  + Friends List
  + Abilily to message others with video call and picture sending
  + Messaging Availability displayed on profile (different colors for different availability)
  + Messaging availability automatically shows busy or unavailable if user is in offline/online lessons (Can be manually turned off)
  + Helpfulness meter/rating displayed on each profile given by other users
  + Settings (Settings icon to change preferred settings like visibility, profile picture, etc.)
* User Profiles (Viewing Someone Else’s Profile)
  + Add friend button
  + Message/Contact Button (Clicking opens your conversation with them or starts a new one if there isn’t one)
  + Viewing others bio, helpfulness meter/rating, contact information, profile picture, etc.
  + Profiles display if user is a teacher or student
  + Profiles display messaging availability at all times
* Menu
  + Menu automatically opens up on lesson tab
  + Tabs for each section
    - Lessons (Different difficulties, each with their own categories)
      * Users can preview lessons (What they’ll learn)
      * Uses will be recommended lessons to take, including retakes
      * Users can jump to any lessons, but may be advised not to if they haven’t met requirements for a level
      * Each category has an icon with three stars under it, showing user efficiency
      * Lessons include:
        + Teaching a user about a topic, showing examples, providing memory cues
        + Practice – Users will be shown a picture/video and asked what the picture is showing
        + Practice – Users will be given a word, number, etc. and asked to choose what picture properly displays what’s being asked
        + Lesson will tell user if they’re wrong or right with encouraging message and helpful tips
        + Lessons will display progress bar at the top and at the end, show results of accuracy and problem areas
    - Map
      * Prompts user for location, can be turned off at anytime
      * Look up nearby teachers based off of location
      * Live self-tracking to follow route to teacher listed address
      * Icon marker for each teacher
      * Icon expands into contact information and mini profile view of that teacher
    - Calendar (For upcoming virtual lessons or for user inputting their own events)
    - Dictionary (Quick look-up for words, not sentences or syntax)
  + Search bar
    - Search other users
    - Other users will not appear in search if privacy setting does not allow it
    - Mini profile view of each user (Name, profile picture, level of learning, and quick general feedback percentage)
    - Mini profile view has view profile and message button
* Homepage
  + Opens up on user’s available lessons
  + Header displays level, log out icon
* About
  + About us/Our mission statement
  + Contact information
  + Feedback section at the end users can give for developer adjustments

**Stretch Requirements**

* Report features on every user and teacher profile with categories for reporting and short response box
* Automatically compare user ad teacher availability
  + Users can input their own availability in their profile preferences
  + Viewing a teacher’s profile will automatically compare and highlight matching profiles and days/times
* Shop
  + Each completed lesson will reward in-app tokens that cannot be purchased
  + Tokens can be used to buy in app rewards
    - profile decorations
  + Mini characters to display on profile or to encourage users when they take a lesson
    - Mini characters have small profile information (likes, dislikes, whether they identify as deaf/heard of hearing or hearing)
    - Characters are animated
  + Tokens earned on lesson completion and to what accuracy
    - Lesson not completed fully will reward some tokens
    - Remaining tokens earned when problem areas are completed
    - Retaking lessons earns token, each retake earns less and less tokens, minimum is 1 token
  + Upload app to app store
* Teacher Profiles
  + Profile picture
  + Bio
  + Contact section
  + Availability days and hours on weekdays, weekends, and holidays
  + What lesson medium they do (online/in person and if they do 1-on-1 only or group sessions)
  + How long they teach for
  + What level they teach at and what topics they will cover
  + Messaging availability (Automatically changes/updates when teaching a lesson, can be manually turned off)
  + Student feedback meter with comments for the teachers (Not able to be seen by other students, teacher cannot reply to comments, anonymous)
  + Settings/edit profile icon where teacher information can be updated (availability, lesson difficulty, etc.)
* Teacher Profiles (Viewing a teacher)
  + Lessons difficulty
  + Contact information
  + Message Button
  + Bio
  + Profile Picture
  + Message availability
  + Lessons Availability
  + Lesson timeframe
  + Teacher feedback section provided only to students that have taken a class with the teacher
* Teachers Tab in Menu
  + Display all available teachers
  + Ability to filter based on Teacher’s availability
  + Each teacher display view has a view profile and contact button
  + Lesson times
* Live session
  + Live sessions tab that shows the users upcoming live sessions
  + Users have to schedule ahead of time to join a live session, they cannot join mid-session
  + Video call 1-on-1 on in groups, each is sectioned and labeled appropriately

**Tech Stack**

* MySQL
  + Storing user information
    - Profile picture
    - Username
    - Profile preferences
    - Availability
    - Bio
    - Progress ID
    - Calendar event ID
    - Live lesson ID
    - Friends IDs
    - Secondary user ID that is other user’s friend ID for you
    - Feedback bar
  + Multiple tables
    - Lesson table with each lesson ID that connects to user and their progress for each one
    - Calendar event with event ID that aligns with other teachers’ event IDs and has event name
    - Friends list with friend IDs that will match up with other users’ secondary IDs
    - Teacher table
      * Similar to user table
      * Feedback ID
        + Maps to users and their feedback
      * Location
* Flutter
  + Designing app and app functionality
* Vs Code
  + Use Flutter in Vs Code
* Packages
  + Google Maps for Flutter
  + Flutter polyline points
  + Location

**Proposed Schedule**

Week 1:

* Log in UI
* User profiles/UI
* Menu UI
* Homepage UI
* Lesson UI
* Calendar UI
* Search UI

Week 2:

* Database structure
* User creation/login logic
* User profile preferences displayed
* User profile editing works and saves
* Lessons tab displays lessons including difficulty, category, etc. and lesson icons
* Getting started on the lessons for each category and the lesson UI including progress bar and results

Week 3:

* Working on lessons and what they teach
  + Lessons display pictures/videos with multiple choice
  + Example and topic teaching
  + Checking for user answer
* Showing user lesson progress and updating database
* Making sure user lesson progress updates on profile
* Testing these features as a logged in user
* Making sure users not logged in cannot access app features

Week 4:

* Search bar
  + Mini profile views for each user displayed
    - Profile
    - Username
    - Availability
      * Messaging
      * Lesson availability if teacher
    - Small feedback percentage
    - View profile/message button

Week 5:

* Calendar
  + Display upcoming events
  + User written events

Week 6:

* Messaging between users and message history saved
* Sending videos/photos through messaging
* Map
  + Making sure map shows user’s location

Week 7:

* Map
  + Map markers
  + Map markers when clicked show teacher profile view
  + Bookmark locations for users
  + Live tracking for routes
* Dictionary
  + Categories like numbers, colors
  + Search only by word, not phrase

Week 8:

* Ability to cancel lessons and notify all users view email and messaging from official account
* Adding more lessons
* About Page
  + Contact information
  + User feedback
* Admin Page
  + Receives user feedback
  + Can delete users
  + Cannot be searched by others

Week 9:

* Polishing features
* Adding encouraging messages for lessons whether user fails or not

Week 10:

* Testing each feature for any errors