CSCI 4080 – Design for Educational Applications

***Project Proposal* – Signly**

Figma prototype link:
https://www.figma.com/proto/T21iYlS9RaPM9HVqJielye/Interactive-Prototype?node-id=41-309&t=Zgcoev6IVPVpcBBr-1

Figma Figma link:
https://www.figma.com/design/T21iYlS9RaPM9HVqJielye/Interactive-Prototype?node-id=41-309&t=Zgcoev6IVPVpcBBr-1

Demo Video: *https://youtu.be/jQovSBh9dI4*

Presentation Video:
https://drive.google.com/file/d/1ATy5i-GhwEzWi2xGMEwbdjrRd2aj-aqr/view?usp=sharing

Github Link: *https://github.com/ZephyrA1/Signly_Project_CSCI4080u*

Slides Link:
https://docs.google.com/presentation/d/1pipii_e4VrAnAUzGTaU75zuNdlxDO8dH/edit?usp=sharing&ouid=115089373622717557852&rtpof=true&sd=true

Students:
Abdul Rahim Mohsin (100890247)
Samad Khan (100754092)
Saif Siddiqui (100824868)

Professor: Dr. Michael Miljanovic
TA: Cole Craven

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Application Name: *Signly*

Description: *A mobile application in which users go through multiple modules in order to learn Sign Language. The user will be able to learn the alphabet, learn new words, and be able to translate sign language to text and vice versa. Users will be tested through quizzes, and be able to learn through instructional diagrams through different modules. There will also be flash cards in which they can use to memorize new concepts, and a question bank which holds questions which they have previously gotten wrong. Concepts will be reiterated multiple times before advancement, allowing users to learn thoroughly, instead of relying on short term memorization. Users will also be able to sign to their camera in order to answer questions, and be able to try translating their own sentences through this method.*

Overview, Purpose & Motivation:

We wanted to design an educational app that actually felt different, so we asked ourselves, how many sign-language learning apps do we even know? Realizing there were almost no modern or intuitive options, we created SignLy, a mobile app focused on helping people learn American Sign Language in a clean, accessible, and engaging way.

The core problem is that ASL learners often rely on outdated tools, limited practice features, or apps that are not designed for mobile use. Most language apps focus on spoken languages, leaving a clear gap for people who want structured lessons, real-time practice, and a simple interface that supports consistent learning.

SignLy addresses this by offering guided modules, quizzes with feedback, and a camera-based Free Mode for hands-on practice. The design uses clear navigation, large tap targets, and a minimal layout so learners can progress confidently without feeling overwhelmed.

Objectives and Design:

What kinds of learning objects will be included in the app?

Quizzes, Instructional diagrams, Flash Cards, Translation, Streak system, etc.

How will users interact with these objects, and how will they be evaluated?

Users will be tested through the camera, they will be provided with a sentence where they need to gesture out the sentence in order to move onto the next section. Users will also be tested through quizzes, fill in the blanks, matching questions, etc. Summary Quizzes will be essential to their learning progress, where they sign different words that they learned that day, use words previously learned, etc.

What are the learning outcomes relevant to your app?

Help learners build foundational skill level in sign language and cultural understanding, Learn ASL vocabulary, Be able to translate words into sign language, be able to comfortably translate sign language into english, etc.

*Who is the **target audience** for this app?*

The target audience includes beginners who want to learn sign language for personal interest, students enrolled in ASL courses, and family members of Deaf or hard of hearing individuals. It also serves professionals in customer-facing roles, such as healthcare workers, educators, government employees, and retail staff, who want to improve accessibility and communication.

Why is Signly Important & App Comparisons:
When researching applications that provide sign language learning, we found that most applications are repetitive, don't teach much, and are easy guessing games. I started using an application called Lingvano, which is a sign language application that is repetitive, has poor design, and doesn't encourage the user to consistently check into the application.

Within this application we noticed that the UI is very bland and simple. There is a lot of whitespace, and the landing page has poor design. The application also uses a repetitiveness when asking questions to the user, mainly in the form of multiple choice questions with 2 options for answers. This does not allow the user to use their critical thinking skills in order to genuinely learn a topic or word.

Signly has a better impact on users since each question allows the user to learn a word, and answer questions through typing out the word, choosing which sign is correct, and even selecting from a large list of options. This allows the user to learn, over completing a constant guessing game. Fill in the blank questions also allow the user to determine what action/word is correct, creating a deeper learning experience, rather than a “remember this for 5 seconds and forget” loop.

Storyboards

Scenario 1: User Learning Experience

Description: User utilizes the education modules to learn sign language through classes, quizzes, etc. (Hierarchical Storyboard)

Goal: The goal for this scenario is that the user can sign in, access the modules, and take the quiz

Process: Ideally, the user will be able to sign up / log in to the application, which would allow them to track their progress through their personal profile. They will initially be greeted with a login form, with a sign-up hyperlink below it. If signing in, they will be able to directly log in to the module page. However, they do need a process to sign up through the ‘sign up page’ if they don't have a current account.

After signing in, we found that it would be ideal for the user to be directly greeted with the module page, which would make it efficient for them to learn, instead of being greeted with a massive amount of information about the application. Assuming the user is first starting, they would proceed with the Module 1 lesson, go through the learning processes, and finalize with a quiz. This process would repeat for Module 2 and Module 3 as well. The user can leave at any time, returning to the modules page.

Scenario 1 (Module process)

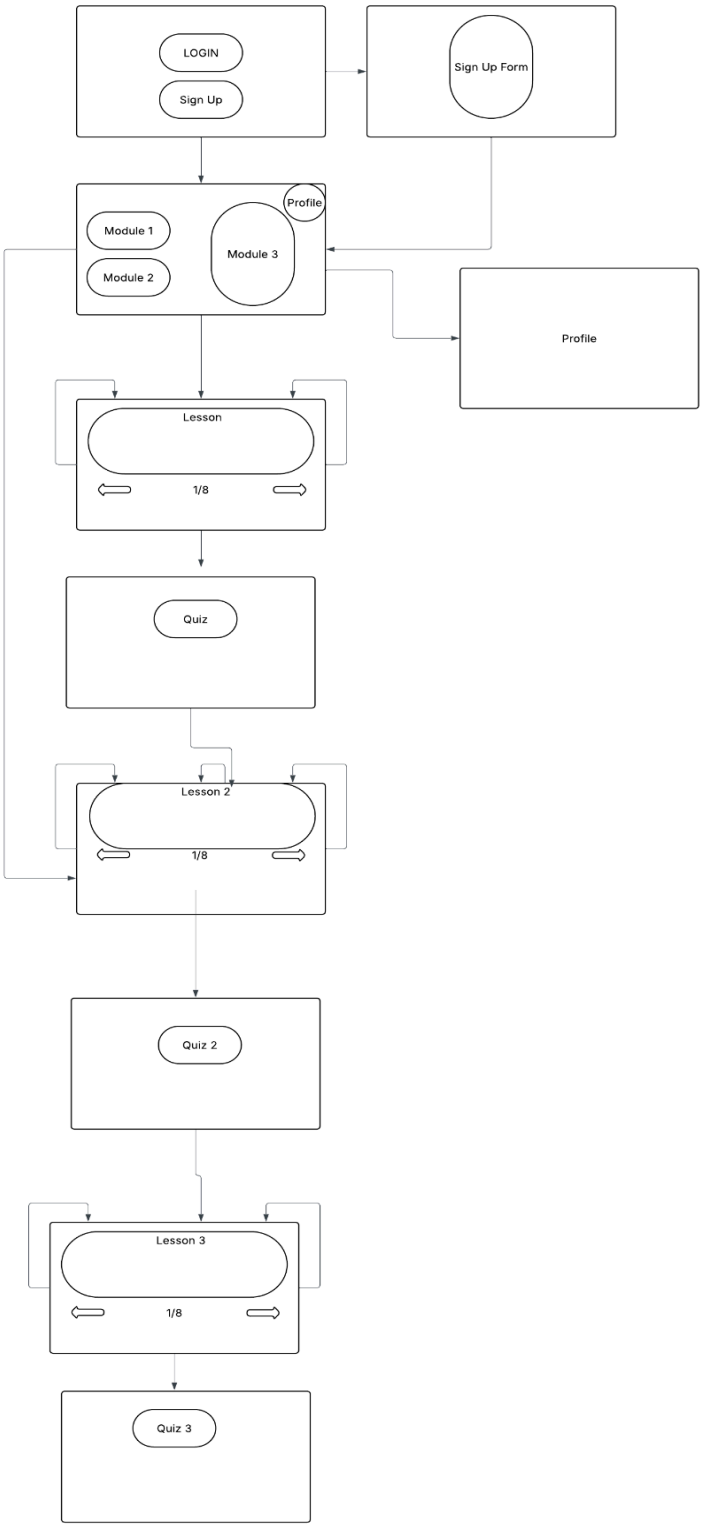

Figure: **Storyboard Diagram**

Scenario 2: Free mode Access

Description: This scenario focuses on the user accessing and using the Free Mode feature, which allows real-time sign recognition through the device's camera. (Linear Storyboard)

Goal: The user can log in successfully, find the free mode button, and utilize the free mode experience

Process: Users will be greeted with the login/sign-up page, and either log in or direct themselves to the "sign up" page using the sign-up hyperlink. After completing this process, they will be initially greeted with the Modules page. We realized that we could confine the free mode button to the taskbar, but then quickly found that it would probably be a better option for the user to be able to scroll down to find the option for free mode. We also thought it would be a good idea to place an arrow button, which, when clicked, will scroll down for you to give you access to this option. The user will then click the free mode button and be given access to the free mode page, which will have a display for the camera and a return button. We also thought it would be a good idea to have an overlay over the camera, which displays the word that you are signing, to allow efficiency for the users.

Storyboard Diagram: