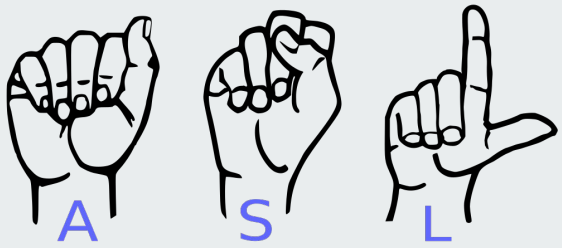
duolingo

Group 3

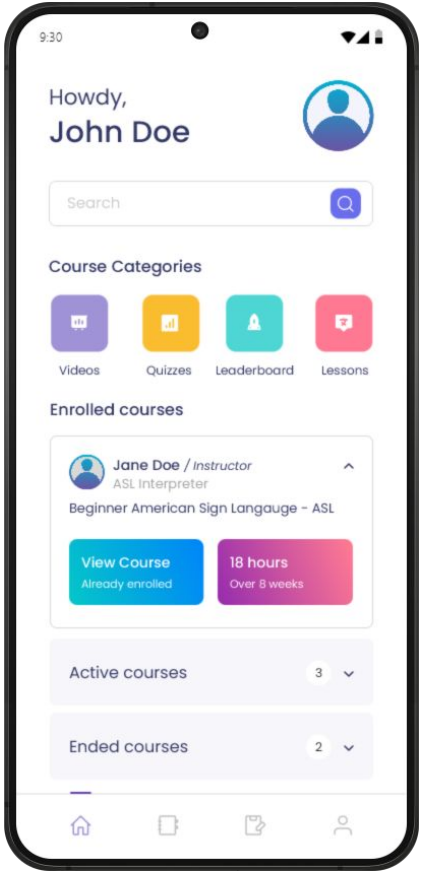
Final Project Presentation

ASL Duolingo



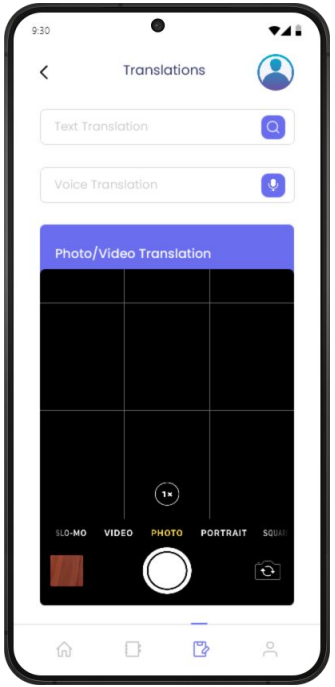
Introduction

- App similar in concept to Duolingo, but for the ASL community
- Social and Collaborative features to the learning community
- Fosters healthy competition between students about learning



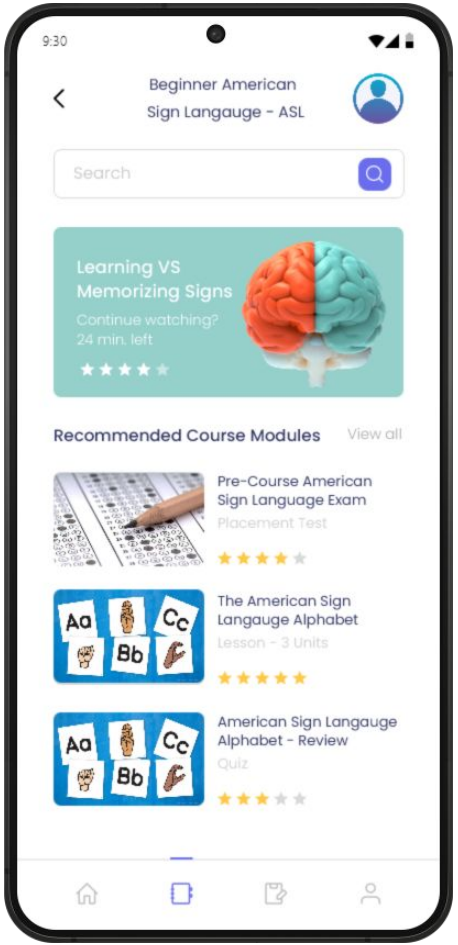
Gesture Recognition and ASL Pronunciation Practice - Feature 1

- Advanced technology is used to analyze hand gestures and provide immediate feedback on accuracy
- Helps users practice ASL in a practical interactive way, improving retention and fluency
- Encourages mastery of proper singing techniques through repetition and correction



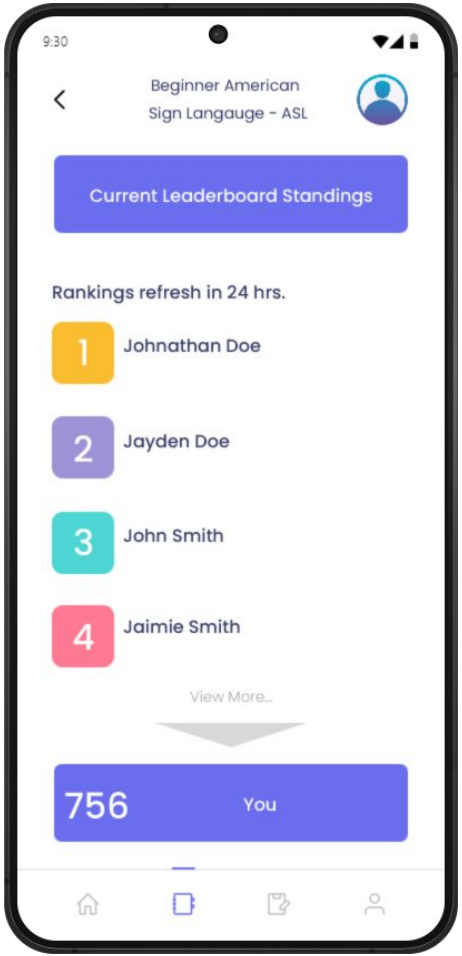
Adaptive Learning Pathways - Feature 2

- Starts users at the right proficiency level based on a placement test
- Dynamically adjusts lesson difficulty based on user performance and learning pace
- Provides personalized goals to keep users engaged and steadily progressing



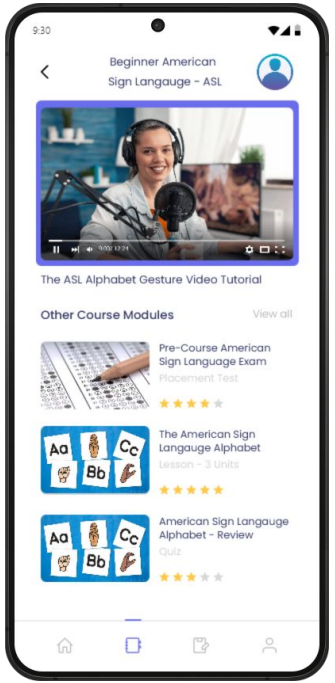
Social and Gamified Learning - Feature 3

- Leaderboards encourage friendly competition among users to improve their rankings.
- Gamified elements like badges, points, and streaks keep users motivated and reward consistency.
- Social features like adding friends and sharing progress promote collaboration and accountability.



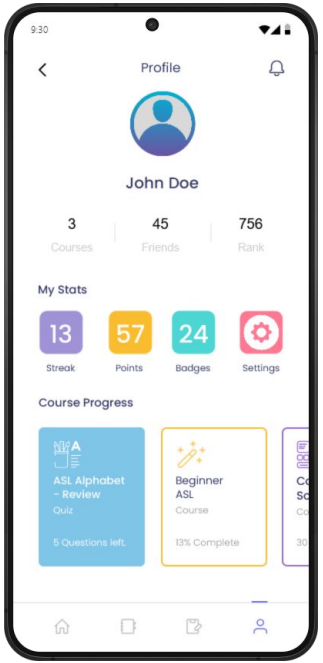
Video Demonstrations and Context-Based Lessons - Feature 4

- Offers real-world examples of ASL usage through high-quality video demonstrations.
- Focuses on context-driven scenarios to help users apply ASL in everyday situations.
- Includes lessons designed by ASL experts to ensure cultural and linguistic accuracy.

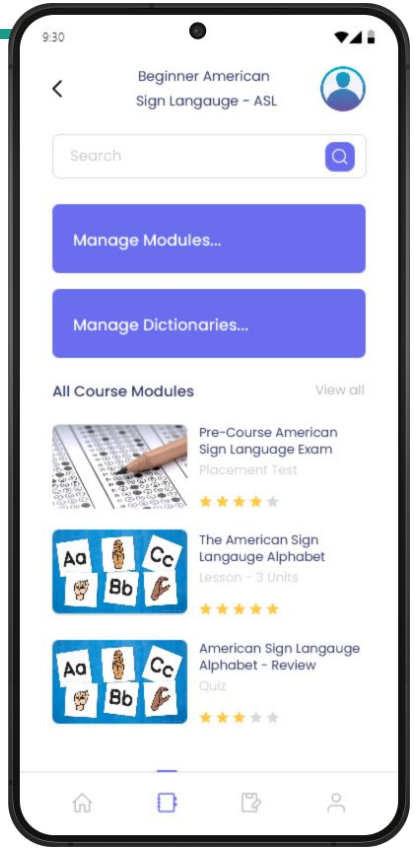


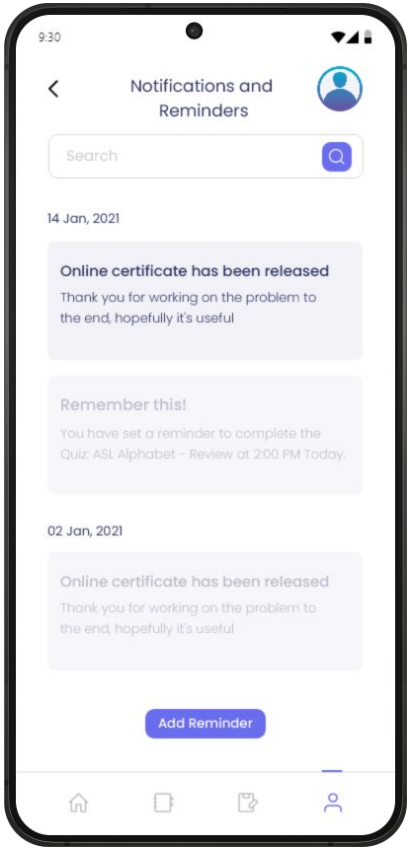
Comprehensive Progress Tracking and Rewards - Feature 5

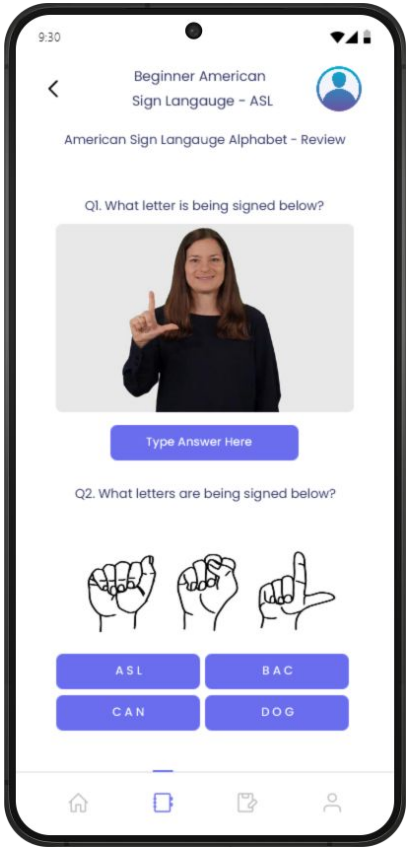
- Tracks individual achievements with detailed reports and summaries.
- Daily streaks and reminders encourage consistent learning habits.
- Milestone rewards celebrate progress, motivating users to reach the next level.



Other Important Features







Accurate Gesture Recognition - Challenge 1

Problem: Ensuring the app reliably detects and evaluates diverse hand shapes, movements, and gestures across varying lighting conditions and backgrounds.

Solution: Incorporate machine learning models trained on extensive datasets of ASL gestures under different environments. Use device-specific optimizations and allow manual override options for ambiguous cases.

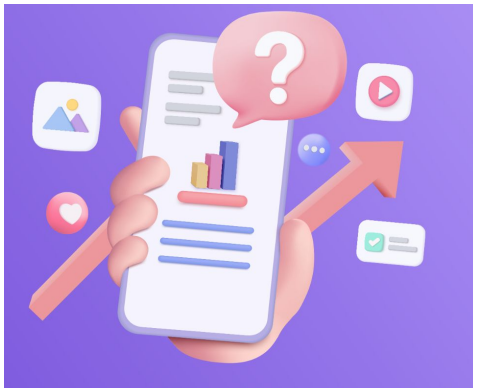
Personalized Adaptive Learning - Challenge 2

Problem: Developing a robust adaptive learning algorithm that effectively tailors lessons to the user’s proficiency and progress.

Solution: Implement an AI-driven recommendation system that uses user performance metrics to dynamically adjust content difficulty and offer targeted reviews of weak areas.

Maintaining Engagement Over Time - Challenge 3

Problem: Users may lose motivation due to repetitive content or lack of variety in activities.



Solution: Regularly update lesson modules with fresh content, add seasonal challenges or themes, and introduce multiplayer activities for interactive learning experiences.

Comprehensive Resource Management - Challenge 4

Problem: Managing and curating a vast dictionary of ASL and English terms, along with video demonstrations and lessons, can be resource-intensive.

Solution: Use cloud-based storage and content delivery networks (CDNs) to efficiently manage and distribute resources. Implement user feedback mechanisms to prioritize updates and identify errors efficiently.

Inclusive Design for Diverse Users - Challenge 5

Problem: Catering to users with different accessibility needs, device capabilities, and learning speeds.

Solution: Adopt universal design principles, offer customizable interfaces (e.g., font sizes, color schemes), and ensure compatibility with various devices. Include offline modes for areas with limited connectivity.

Lesson 1 - Too many cooks in the kitchen

Issue: Working with multiple developers on the same branch can cause problems.

Solution: Spread up into multiple branches, usually a branch for a bug fix or a new feature.

Lesson: Too many developers working on the same branch leads to merge conflicts and too many PR's to approve. It makes a simple git history but it is usually standard practice to make a new branch for a feature or git issue.

Lesson 2 - Dividing work evenly

Issue: Trying to divide work evenly to ensure every member of a group contributes equally.

Solution: Diving tasks to each group member to allow everyone to work independently and get work done efficiently.

Lesson: It is almost impossible to divide work evenly in most cases because some work takes longer than others. So, if there are multiple projects assign the difficult task to different people.

Lesson 3 - Communication is key

Issue: Trying to do work but no one knows what work is being done.

Solution: Communicate with your team and make sure everyone knows what you are doing.

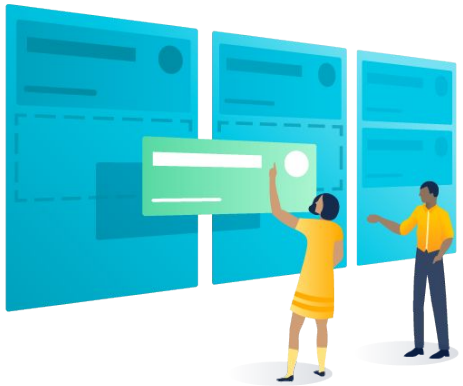
Lesson: Often times teams will do repeated work because of a lack of communication. Knowing what you are doing and telling your team is an important part of being a group member. Since if everyone knew what others were doing then there wouldn’t be repeated or wasted work.

Secret for Success 1 | Start Early

1. Start assignments early, breaking down assigned roles and work distribution.
2. Establish foundational elements such as a shared repository, formatting standards, and communication channels.
3. Allocate time for unexpected challenges and technical issues.

Secret for Success 2 | Follow Agile Practices

1. Organize work through the use of Jira boards.
2. Regularly update a backlog of tasks, prioritizing those with the greatest impact.
3. Update tasks early and often.



Secret for Success 3 | Communicate Problems

1. Share issues as soon as they arise to avoid bottlenecks and delays.
2. Use established communication channels and jir board to document and discuss challenges.
3. Foster a culture where team members are comfortable asking for assistance or modifying proposed solutions.


Q & A