# signall

## Making Sign Language Accessible

Design Project | SWE 4506

# Team Members

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# Overview

- SignAll is a web application designed to enhance communication between individuals who use American Sign Language (ASL) and those who do not.

- It captures ASL gestures through a webcam and translates them into English text and speech in real-time.

# Use case

## Communication

Allows people with hearing disabilities to communicate more effectively in everyday situations.

## Learning

Assists in learning ASL through the dictionary and quiz features for both ASL users and learners.
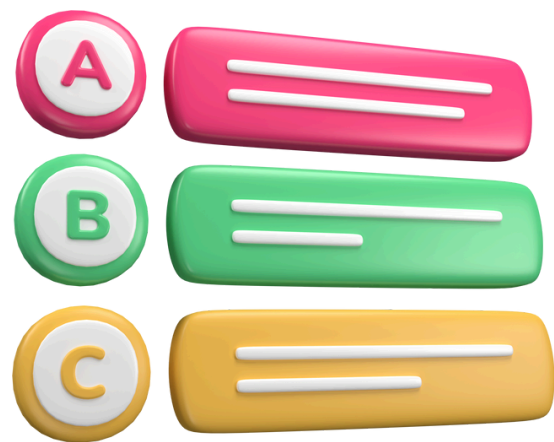
# Promised Features

## ASL Translation

- Real-time translation of ASL gestures into text
- Provides speech output for translated text.

## ASL Dictionary

- Searchable database of ASL gestures with images, gifs, or videos for each gesture.

# Promised Features

## Practice Quizzes

- Users can take quizzes with varying difficulty levels to test their ASL knowledge.
- Provides immediate feedback on quiz performance.

## Admin Panel

- Admins can add, update, and delete data in the ASL dictionary and create, modify, or remove quizzes.

# Implemented Features

**ASL Dictionary**

**Admin Panel**

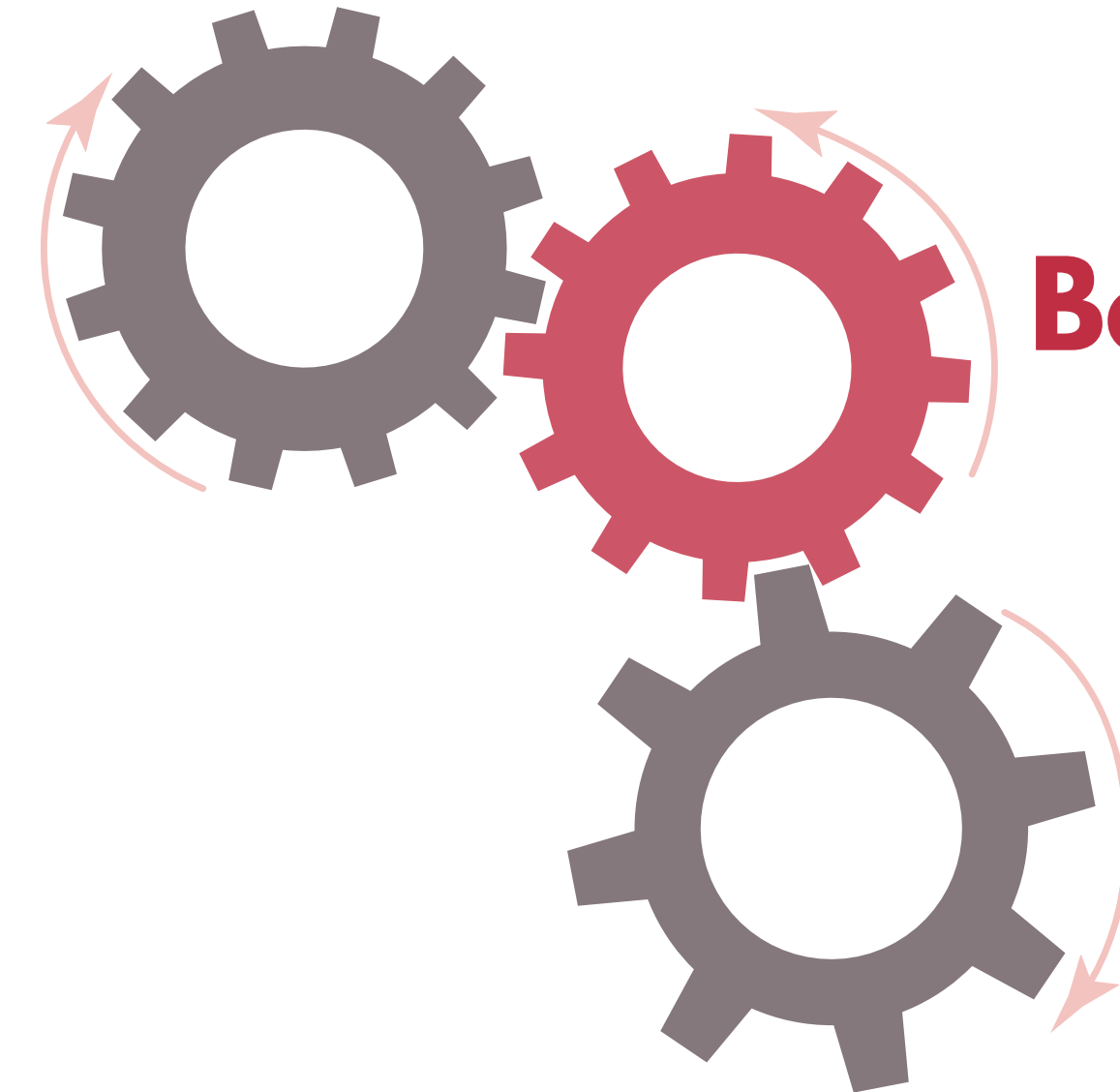**Basic Detection Model**

# Tools & Technologies

## Frontend

- **Next.js** for building a responsive user interface.
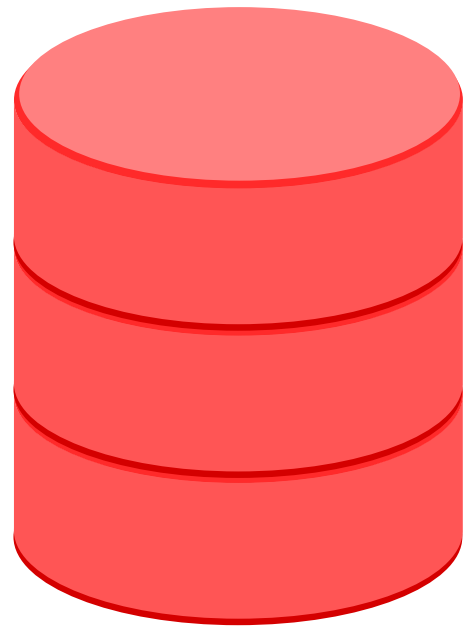- **Tailwind CSS** for styling.

## Backend

- **Flask or FastAPI** for creating and serving the application's backend functionality.
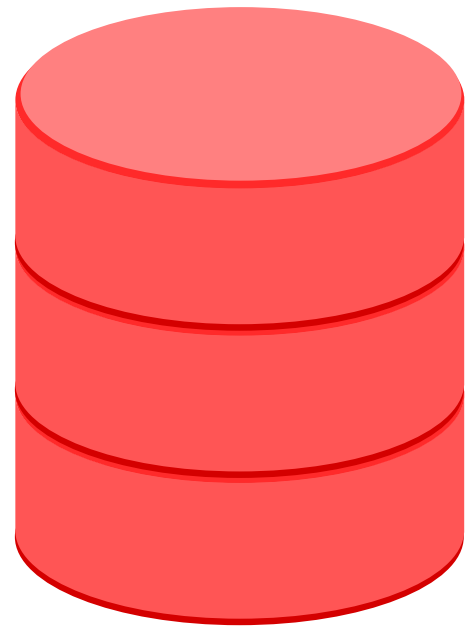
## Machine Learning

- **MediaPipe**, **OpenCV**, and **Pose Detection** for gesture recognition.
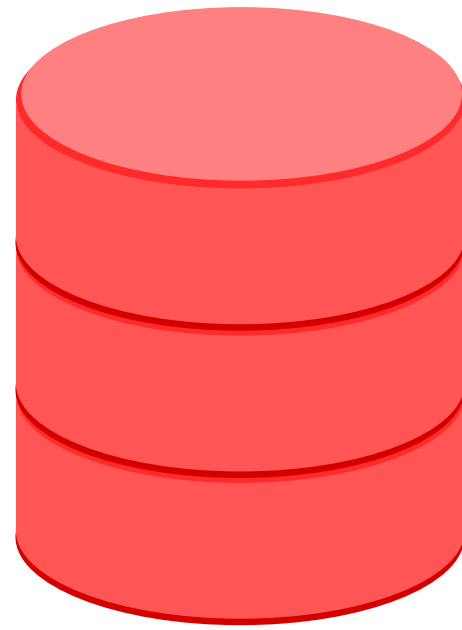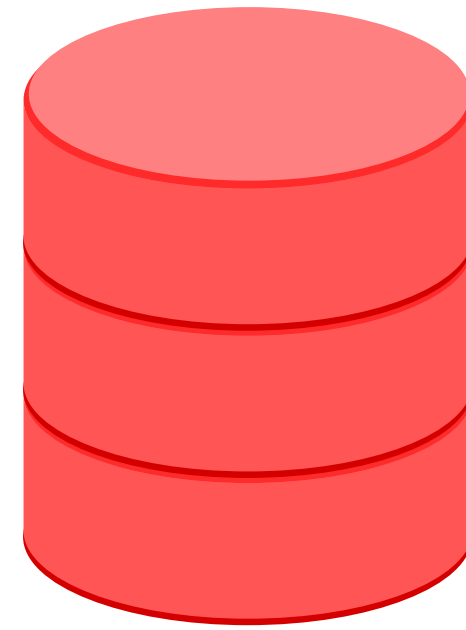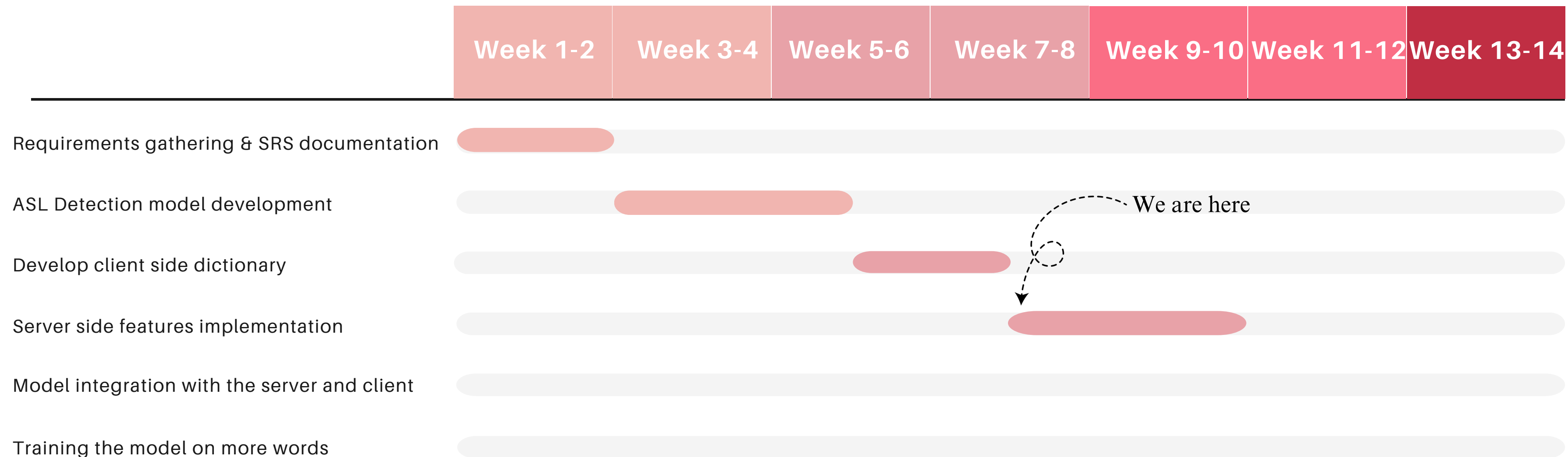
# Databases

User's
Collection

Word's
Collection

Quiz
Collection

Performance
Collection

# Timeline

| | Week 1-2 | Week 3-4 | Week 5-6 | Week 7-8 | Week 9-10 | Week 11-12 | Week 13-14 |
|---|---|---|---|---|---|---|---|

Requirements gathering & SRS documentation

ASL Detection model development

We are here

Develop client side dictionary

Server side features implementation

Model integration with the server and client

Training the model on more words

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DEMONSTRATION