



# CSN-254

## Software Engineering

### SignBot

### Project Proposal

#### **Group 17:**

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## Introduction

SignBot is a web-based system specially designed for hearing impaired and speech impaired people. This system takes live audio speech recording or text as input and displays the relevant Indian Sign Language (ISL) animations as output. It's an audio/text to sign language converter.

## Problems Faced and Solutions

According to a World Health Organization report, around 63 million people in India suffer from either complete or partial deafness, and of these, at least 50 lakh are children which hold for 20% of the hearing and speech impaired world population. This population lacks the amenities which a normal person should own. The big reason behind this is the lack of communication.

This decreasing ratio of Literate and Employed hearing impaired and speech impaired population is a result of the physical disability which leads to lack of communication between a normal person and deaf and dumb person. Sign Language is the most natural and expressive way for hearing impaired people. People, who are not deaf, never try to learn sign language for interacting with deaf people. This leads to the isolation of deaf people. It becomes the same problem of two persons who knows two different languages, but none of them knows any common language so it becomes a problem to talk with each other and so they require a translator physically which may not be always convenient. But if the computer can be programmed in such a way that it can translate sign language to text format, the difference between normal people and the deaf community can be minimized.

This is where our system will be helpful for the 'Specially Abled' people who are having communication difficulties when they communicate with normal people as it would help them to express themselves clearly and easily. It will help people impaired of hearing or impaired of speaking by converting speech/text to sign language animations through a character/person designed using Blender 3D tool.

## Specifications

Web application features:

- Login and register for users.
- Audio to sign conversion in very less time.
- Easy to understand animations.

Users will have these features:

- Search for all the signs corresponding to audio.
- Communicate using the signs after viewing the animations, at any place at any time.
- Add review if an animation is not according to Indian Sign Language.

## **Justification**

The goal of the web app is to bridge the communication gap between disabled and able-bodied people. Our app focuses on making life easier for disabled people so that they can also get involved in all the conversations and bring normalcy to the life of all the people. At the start, our application aims at covering the basic signs including all the alphabets as we can break a word into alphabets and convey them. In this way with the basic signs also we can cover all the words. This makes our software not too ambitious as we are not dealing with complex signs in the first place and it is a new domain for our group to work in.

In our team of 5 members, we divided the work as 2 will be working in the front end, animations, and 3 at the backend so that the project can be completed within the time frame provided. We have a few members who have some experience with python libraries and a few with an experience in the front end, this makes our project more plausible.

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