Project Design Phase-I
Proposed Solution Template

Date	31 October 2023
Team ID	Team-591769
Project Name	ASL- Alphabet Image Recognition
Maximum Marks	2 Marks

Proposed Solution:

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Deaf individuals in North America primarily use American Sign Language (ASL) to communicate, which presents a communication barrier between the deaf and hearing communities. This barrier can hinder the exchange of information, education, and social interaction. Traditional solutions, such as interpreters or text-based communication, have limitations in terms of availability, cost, and immediacy. To address this issue, we aim to develop a technology solution that can facilitate real-time recognition of the ASL alphabet from hand signs, allowing for seamless communication between the two communities.

2.	Idea / Solution description	The proposed solution is the development of an ASL Alphabet Image Recognition system. This system will leverage machine learning and convolutional neural networks to recognize the 26 letters of the English alphabet in American Sign Language, as well as three additional classes for the signs representing "space," "delete," and "nothing."
3.	Novelty / Uniqueness	Our ASL Alphabet Image Recognition project stands out due to its pioneering use of advanced deep learning techniques and a custom dataset tailored to American Sign Language (ASL). Unlike others, our model showcases exceptional accuracy and real-time performance, enabling seamless communication for the Deaf and Hard of Hearing community.
4.	Social Impact / Customer Satisfaction	Our ASL Alphabet Image Recognition project has a profound social impact, fostering inclusivity and accessibility. It empowers the Deaf and Hard of Hearing community by providing a seamless and accurate means of communication through ASL recognition. With our user-centric design and constant improvement, we aim to ensure high customer satisfaction, making a meaningful difference in the lives of those who rely on sign language for communication.

5.	Business Model (Revenue Model)	The business model involves creating ASL Alphabet Image Recognition technology for communication between deaf and hearing communities. It targets various customer segments, including educational institutions and developers. Revenue streams include licensing fees, subscriptions, custom development, and API/SDK fees. Key resources include image datasets and machine learning expertise. Activities encompass data collection, model development, and application creation. Channels include online marketplaces, websites, and direct sales.
6.	Scalability of the Solution	Scalability of the ASL Alphabet Image Recognition system encompasses accommodating growing data, models, and user base, as well as handling real-time video processing and adapting to regional variations and changing regulations. Efficient resource management and continuous improvement are vital for long-term effectiveness and profitability.