

**Project Design Phase-I**  
**Proposed Solution Template**

Date	16 October 2022
Team ID	PNT2022TMID45193
Project Name	Project – <b>Real -Time Communication System Powered By AI For Specially Abled</b>
Maximum Marks	2 Marks

**Proposed Solution Template:**

Project team shall fill the following information in proposed solution template.

S.No	Parameter	Description
1.	Problem Statement (Problem to be solved)	<b>To provide an Efficient communication app which translates the hand signs into text and voice mode for deaf and dumb people.</b>
2.	Idea / Solution description	<ul style="list-style-type: none"><li>• <b>Convolution Neural Networks</b> are to be used to take hand sign as an input to extract edges, corners.</li><li>• Dataset is used for training CNN. One dataset for <b>hand detection</b> and the other for <b>gesture detection</b>.</li><li>• <b>Voice assistant is implemented</b> that take input as speech patterns and convert the text into voice.</li></ul>
3.	Novelty / Uniqueness	We have number of symbols to be trained for our project and many of them look similar to each other like the <b>gesture for symbol 'V' and digit '2'</b> .To produce better accuracies, <b>we keep the background of hand a stable single colour</b> , so that we don't need to segment it on basis of skin colour.
4.	Social Impact / Customer Satisfaction	<ul style="list-style-type: none"><li>• AI enables people with disabilities to <b>lead an independent life with this app</b>.</li><li>• <b>Supporting them</b> in activities of daily living .</li><li>• <b>It changes the mind set of the disabled, that even they can too be involved in a common conversation like others.</b></li></ul>
5.	Business Model (Revenue Model)	<ul style="list-style-type: none"><li>• Faster and efficient , the <b>concerned text or voice as output is produced, the more it leads to optimize the app with new advancements.</b></li><li>• The productivity is gained and at the same time, <b>leads to improved speed of business.</b></li></ul>

6.	Scalability of the Solution	<p>A convolutional neural network can be scaled in three dimensions: <i>depth</i>, <i>width</i>, <i>resolution</i>.</p> <ul style="list-style-type: none"><li>• <b>Depth</b> of the network corresponds to the number of layers in a network.</li><li>• <b>Width</b> is associated with the number of neurons in a layer.</li><li>• <b>Resolution</b> is the image resolution that is being passed to CNN.</li></ul> <p><b>Increasing the depth</b>, by stacking more convolutional layers, allows the network to learn <b>more complex features</b>.</p>
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