

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

Date	24 September 2022
Team ID	PNT2022TMID44334
Project Name	A Novel Method for Handwritten Digit Recognition System
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)	The major problem is to correctly identify digits from a dataset of thousands of handwritten images and experiment with different algorithms to learn first-hand what works well and how techniques compare. Converting handwritten digits into digital ones is a major challenge.
2.	Idea / Solution description	Train a model to interpret the handwritten digits. Use CNN (Convolutional Neural Network) model for handwritten digit recognition. Its built-in convolutional layer reduces the high dimensionality of image without losing its information.
3.	Novelty / Uniqueness	CNN can extract informative features from images and eliminates the need of traditional manual image processing methods. CNN is better for training phase with less computational power and less information loss for high accuracy.
4.	Social Impact / Customer Satisfaction	1. Postal department and courier services can easily find the digits written. 2. Old people who have eye sight issues with handwritten digits. 3.Processing of bank cheque books.
5.	Business Model (Revenue Model)	Helps in Banking sector and Postal sector by providing the services. Tracking the Number plates of vehicles. Helps in digitalization of libraries.
6.	Scalability of the Solution	CNN is the most optimal technique to recognize handwritten digits with accuracy of about 95 percentage.Accuracy can be improved by adding additional linear layer.