Project Design Phase-I
Proposed Solution Template

Date	24 September 2022
Team ID	PNT2022TMID00426
Project Name	Project - A Novel Method for Handwritten Digit Recognition System
Maximum Marks	2 Marks

Proposed Solution Template:

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	The handwritten digit recognition is the ability of computers to recognize human handwritten digits. It is a hard task for the machine because handwritten digits are not perfect and can be made with many different flavors. The handwritten digit recognition is the solution to this problem which uses the image of a digit and recognizes the digit present in the image. The handwritten digit recognition is the ability of computers to recognize human handwritten digits. It is a hard task for the machine because handwritten digits are not perfect and can be made with many different flavors. The handwritten digit recognition is the solution to this problem which uses the image of a digit and recognizes the digit present in the image.
2.	Idea / Solution description	Our system aims to accurately recognize digit given as the input in the form of image or document in order to quickly identify different handwriting styles and to minimize the need for human interpretation. A few applications of the system would be postal mail sorting, bank cheque processing, form data entry, etc. We aim

		to develop 7-layered CNN model with 5-hidden layer along with Gradient descent and Back propagation model to find and compare accuracy on different Epochs. We achieve this by using MNIST Dataset, which contains 60,000 handwritten digit images for the classifier training and 10,000 handwritten digit images for the classifier testing. Finally, the recognized digit will be displayed in the user interface
3.	Novelty / Uniqueness	This work aims to identify digits of varied languages. It is not suppressed to standard numericals but is extended to digits of all global languages.
4.	Social Impact / Customer Satisfaction	This approach recognizes number plates of vehicles, numeric entries in forms filled up by hand (say — tax forms) ,postal mail sorting, bank check processing, form data entry and makes understanding better for the customers.
5.	Business Model (Revenue Model)	We propose a two-tier system namely a 'free' and a 'premium' tier. The free tier would include ads that display below when classifying a website. The premium tier is a recurring subscription either monthly or annually that removes all advertisements, increasing speed and efficiency of the classifying models.
6.	Scalability of the Solution	This solution can be used by people working in different fields, in different environments ,at ease. It can be accessed and used by everyone across the world. It prevents irregularities in handwritten papers and provides high accuracy.