Project Design Phase-I
Proposed Solution Template

Date	24 September 2022
Team ID	PNT2022TMID40411
Project Name	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 challenge is getting a computer system to read human-written digits. The objective is to accurately identify the digit after uploading a photograph of the handwritten digit.
2.	Idea / Solution description	The Convolution Neural Network algorithm (CNN). By doing this, the trained model will be ready to be used to categorise the digits found in the test data. As a result, the digits in the photos can be categorised as Class 0,1,2,3,4,5,6,7,8,9. A dataset that is frequently used for handwritten digit recognition is MNIST. 10,000 test photos and 60,000 training images make up the dataset.
3.	Novelty / Uniqueness	With written characters in high-quality photos, OCR technology offers greater than 99% accuracy. But unlike OCR, it only recognises only the digits, not all the characters. With the aid of a neural network, handwritten digit recognition is performed using the MNIST dataset. It recognises the scanned copies of handwritten numbers. In further step, the handwritten digit recognition system allows users to write their own digits on the screen with the aid of an integrated GUI for recognition in addition to detecting scanned images of handwritten digits.
4.	Social Impact / Customer Satisfaction	Handwritten Digit Recognition has various uses such as less time consumption. It is used in the detection of vehicle numbers, banks for reading cheques, post offices for arranging letters, and other tasks.
5.	Business Model (Revenue Model)	For efficient traffic control, this technology can be connected with traffic surveillance cameras to read licence plates. To quickly identify and recognise the pin-code details, it can be integrated with the postal system.

6.	Scalability of the Solution	The maximum accuracy in the performance was found 99.64% and the total lowest test loss is 0.0239 approximately. This technology will also extend to recognizing the characters in the future. There is no limit in the number of digits that can be recognized.