

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

Date	October 2022
Team ID	PNT2022TMID19039
Project Name	Project – A Novel based handwritten digit recognition
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)	Handwritten digit recognition is the capability of computer application to recognize the handwritten digits. In machine it is a difficult task for identifying handwritten digits. It is not perfect and different size. The handwritten digit recognition uses image of digit and recognizes the digits present in image. CNN model used to find the handwritten detection.
2.	Idea / Solution description	<p>The handwritten digit recognition system follows the standard model for feature-based classification system consisting of the digit image database, essential feature extraction sub-block and a main classification sub-block. The MNIST benchmark database of handwritten digits has been considered in this work by using a new Multiple-cell size (MCS).</p> <p>The module provides the basis of the rest of the course by introducing the basic concepts behind machine learning and specifically how to perform machine learning by using python and the scikit-learn machine learning module. First you will learn an important step before applying machine learning algorithms, data preprocessing. Finally you will learn how to leverage different types of machine learning algorithms in</p>

		a python script.
3.	Novelty / Uniqueness	The proposed recognition system is implemented on handwritten digits taken from MNIST database. Handwritten digit recognition system can be extended to a recognition system that can also able to recognize handwritten character and handwritten symbols. Future studies might consider on hardware implementation of írecognition system. This project is a very much preliminary project
4.	Social Impact / Customer Satisfaction	A handwritten digit recognition is one of the practically important issues in pattern recognition applications. it's used for postal mail sorting, bank check processing ,form data entry.
5.	Business model	A handwritten detection is used in a business model digits accuracy is high the customers can easily satisfied for example in bank the normal people give cheque to bank employee that time employee can't understand number that time very helpful to find the accuracy of digits.
6.	Scalability of solution	Recognition of handwritten digit is one of the popular problem associated with computer vision applications. The goal of our research work is develop scalable Neural Network and Convolutional Neural Network(CNN).