Project Design Phase-I
Proposed Solution Template

Date	19 September 2022
Team ID	PNT2022TMID07699
Project Name	Project – 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)	This is a collection of thousands of handwritten pictures used to train classification models using Machine learning techniques. To identify the digits on a bank cheque, to collect other user account related information and to identify pin code box numbers a machine learning algorithm is required for handwritten digit recognition.
T	Idea / Solution description	Multilayer Perceptron Neural Network is used to recognize and predict the handwritten digits from 0 to 9. The dataset was trained using gradient descent back-propagation algorithm and further tested using the feed-forward algorithm. The system performance is observed by varying the number of hidden units and the number of iterations. By using this method, digits can be recognized easily.
3.	Novelty / Uniqueness	Has a very high accuracy rate of 99.32% so that the digits are recognized accurately.
4.	Social Impact / Customer Satisfaction	Time can be saved in recognizing the digits and easy to read the digit and posts can be delivered to the correct pin code address.
5.	Business Model (Revenue Model)	Commercial applications such as online handwriting recognition on computer tablets, recognize zip codes on mail for postal mail sorting, processing bank check amounts, numeric entries in forms filled up by hand.
6.	Scalability of the Solution	Tested using MNIST dataset containing 70000 handwritten digits. Web application developed scans the image as input and the data varied in size and shape is analyzed by the model and thus it is scalable.