# Project Design Phase-I
# Proposed Solution Template

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| Date | 24-09-2022 |
| Team ID | PNT2022TMID34890 |
| Project Name | A Novel Method For Handwritten Digit Recognition System |
| Maximum Marks | 2mark |

## 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 Handwritten digits are not always of the same size, width, orientation and justified to margins as they differ from writing of person to person. The similarity between digits such as 1 and 7, 5 and 6, 3 and 8, 2 and 7 etc. So, classifying these numbers is also a major problem for computers. The uniqueness and variety in the handwriting of individuals also influence the formation and appearance of the digits. |
| 2. | Idea/Solution Description | Linear Regression can be considered a Machine Learning algorithm that allows us to map numeric inputs to numeric outputs, fitting a line into the data points. By using MNIST dataset handwritten digits can be recognised. MNIST dataset contains 60000 training images of handwritten digits from 0 to 9 and 10000 images for testing. |

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| 3. | Novelty / Uniqueness | In this paper, new features called Slope Detail (SD) features for handwritten digit recognition have been introduced. These features are based on shape analysis of the digit image and extract slant or slope information. They are effective in obtaining good recognition accuracies. When combined with commonly used features, Slope Detail features enhance the digit recognition accuracy. |
| 4. | Social Impact / Customer Satisfaction | Postal department and courier services can easily find the digits written. Old people who will have eye sight issues with handwritten digits. It also easily recognised handwriting in the form and check. |
| 5. | Business Model (Revenue Model) | Banking sector and Postal sector by providing the services. In Banking Sector too where more handwritten numbers are involved like account number, figure of cash and checks. By using this we can avoid human mistakes. |
| 6. | Scalability of the Solution | Since this application is developed using AI it has several advanced features. It can be used in any devices. |