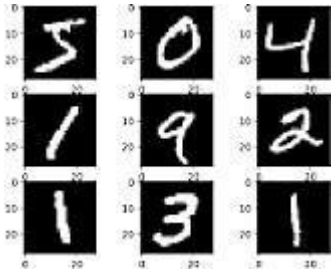
Project Design Phase-II
Functional Requirements

Date	**14 OCT 2022**
Team ID	**PNT2022TMID54114**
Project Name	**A Novel Method for Handwritten Digit Recognition System**
Maximum marks	**4 Marks**

Functional Requirements:

Following are the functional requirements of the proposed solution.

ÏR No:	**Functional Requirement and description:**
FR-1	**Image Data**: Handwritten digit recognition is **the ability of a computer to recognize the human handwritten digits from different sources like images, papers, touch screens, etc., and classify them into 10 predefined classes (0-9)**. this has been a topic of boundless-research in the field of deep learning.
FR-2	**Website:** Web hosting **makes the files that comprise a website (code, images, etc.) available for viewing online**. Every website you've ever visited is hosted on aserver. The amount of space allocated on a server to a website depends on the type of hosting. the main types of hosting are shared, dedicated, VPS..
FR-3	**Digit_Classifieí_Model: Use the MNISI' database of handwritten digits to train a convolutional network to predict the digit given an image**. First obtain the training and validation data.
FR-4	**MNISI' dataset:** the MNIST dataset is an acronym that stands for the **Modified National Institute of Standards and Technology dataset**. It is a dataset of 60,000 small square 28×28 pixel grayscale images of handwritten single digits between 0and 9. 
FR-5	**Cloud:** The cloud provides a number of IT services such as servers,

	databases, software, virtual storage, and networking, among others. In layman's terms, Cloud Computing is defined as a virtual platform that **allows you to store and access your data over the internet without any limitations**.

Non-functional Requirements:

Following are the non-functional requirements of the proposed solution.

NÏR No.	**Non-Functional Requirement**
NFR-1	**Usability:** Handwritten character recognition is one of the practically important issues in pattern recognition applications. the applications of digit recognition include in **postal mail sorting, bank check processing, form data entry**, etc.
NFR-2	**Reliability:** 1) the system not only produces a classification of the digit but also a rich description of the instantiation parameters which can yield information such as the writing style. 2) the generative models can perform recognition driven segmentation. 3) the method involves a relatively.
NFR-3	**Performance:** the neural network **uses the examples to automatically inferrules for recognizing handwritten digits**. Furthermore, by increasing the number of training examples, the network can learn more about handwriting, and so improve its accuracy. there are a number of ways and algorithms to recognize handwritten digits, including **Deep Learning/CNN, SVM, Gaussian Naive Bayes, KNN, Decision Trees, Random Joists**, etc.
NFR-4	**Accuracy:** **Optical Character Recognition** (OCR) technology provides **higher than 99% accuracy** with typed characters in high- quality images. However, the diversity in human writing types, spacing differences, and inequalities of handwriting causesless accurate character recognition.