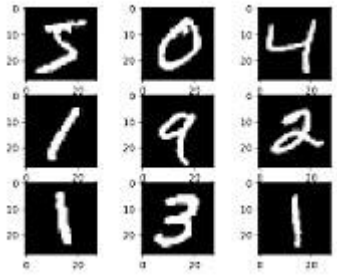
Project Design Phase-II

Solution Requirements (Functional & Non-functional)

Team ID	PNT2022TMID46095
Project Name	A Novel Method for Handwritten Digit Recognition System

Functional Requirements:

Following are the functional requirements of the proposed solution.

FR No:	Functional Requirement and description:
FR-1	**Image Data**: Handwritten digit recognition is **the ability of a computer to human handwritten digits from different sources like images, , etc, and classify them into 10 predefined classes (0-9)** . s 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.) vailable for viewing online**. Every website you've ever visited is hosted on a e amount of space allocated on a server to a website depends on the type of he main types of hosting are shared, dedicated, VPS and reseller.
FR-3	**Digit_Classifier_Model: Use the MNIST database of handwritten digits to train a** training and validation dat**predict the digit given an image**. First obtain the
FR-4	**MNIST 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 smal square 28×28 pixel grayscale images of handwritten single digits between 0 and 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.

NFR 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) m not only produces a classification of the digit but lescription of the instantiation parameters which can ıation such as the writing style. 2) the generative models can perform recognition segmentation. driven 3) the method involves a relatively.
NFR-3	**Performance:** the neural network **uses the examples to automatically infer rules 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 Forests**, etc.
NFR-4	**Accuracy:** **Optical Character Recognition** (OCR) technology provides **higher than 99% accuracy** with typed characters in highquality images. However, the diversity in human writing types, spacing differences, and irregularities of handwriting causes less accurate character recognition.