

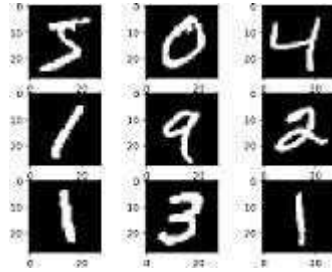
Project Design Phase-II
Functional Requirements

Date	14 OCT 2022
Team ID	PNT2022TMID03361
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.

IR 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 a server. 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_Classified_Model: Use the MNIST 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	<p>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 small square 28×28 pixel grayscale images of handwritten single digits between 0 and 9.</p> 
FR-5	<p>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.</p>

Non-functional Requirements:

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

NfR No.	Non-Functional Requirement
NFR-1	<p>Usability:</p> <p>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.</p>
NFR-2	<p>Reliability:</p> <ol style="list-style-type: none"> 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	<p>Performance:</p> <p>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.</p>
NFR-4	<p>Accuracy:</p> <p>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 causes less accurate character recognition.</p>