Project Design Phase-II
Solution Requirements (Functional & Non-functional)

Date	05 October 2022
Team ID	PNT2022TMID04039
Project Name	Project - A Novel Method for Handwritten Digit Recognition System
Maximum Marks	4 Marks

Functional Requirements:

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	Dataset	The abbreviation MNIST stands for the Modified National Institute of Standards and Technology dataset. It is a collection of 60,000 tiny square gray scale photographs, each measuring 28 by 28, comprising handwritten single digits between 0 and 9.
FR-2	Image data	Handwritten digit recognition refers to a computer's capacity to identify human handwritten digits from a variety of sources, such as photographs, touch screens, etc., and categorise them into ten established classifications (0-9).
FR-3	Website	Web hosting makes the code, graphics, and other items that make up a website accessible online. A server hosts every website visited. Shared, dedicated, VPS, and reseller hosting are the four basic varieties.
FR-4	Digit Classifier Module	To train a convolutional network to predict the digit from an image, use the MNIST database of handwritten digits. get the training and validation data first.
FR-5	Cloud	The cloud offers a range of IT services, including virtual storage, networking, servers, databases, and applications. In plain English, cloud computing is described as a virtual platform that enables unlimited storage and access to your data over the internet.

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	Digit recognition system is used in filling out forms, processing bank checks, and sorting mails.
NFR-2	**Security**	The most common use case in today's mobile world is handwriting recognition as a direct input to a touch screen through a stylus or finger. This is useful as it allows the user to quickly jot down numbers and names for contacts as compared to inputting the same information via the onscreen keyboard.
NFR-3	**Reliability**	The samples are used by the neural network to automatically deduce rules for reading handwritten digits. Furthermore, the network may learn more about handwriting and hence enhance its accuracy by increasing the quantity of training instances. Numerous techniques and algorithms, such as Deep Learning/CNN, SVM, Gaussian Naive Bayes, KNN, Decision Trees, Random Forests, etc., can be used to recognise handwritten numbers.
NFR-4	**Performance**	The detection undertaking relates to perceiving a bouncing box or rectangle for each digit or for each line of substance in the photograph. A broad assortment of systems have been proposed for content detection.
NFR-5	**Accuracy**	With typed text in high-quality photos, optical character recognition (OCR) technology offers accuracy rates of greater than 99%. However, variances in spacing, abnormalities in handwriting, and the variety of human writing styles result in less precise character identification
NFR-6	**Scalability**	Irrespective of the number of characters present, the system recognizes each and every character accurately without any error.