Project Design Phase-II

Solution Requirements (Functional & Non-functional)

Team ID	PNT2022TMID23384
Project Name	A Novel Method for Handwritten Digit Recognition System

Functional Requirements:

Following are the functional requirements of the proposed solution.

FR No.	**Sub Requirement (Story / Sub-Task)**
FR-1	Source Image: Handwritten digit recognition refers to the ability of a computer to identify human handwritten digits from various sources, such as photographs, documents, touch screens, etc., and classify them into ten established classifications (0-9). In the field of deep learning, this has been the subject of countless studies.
FR-2	Digit Classifier Model: 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-3	Cloud Services: The cloud offers a range of computing services including virtual storage, networks, servers, databases and applications. Simply put, cloud computing is described as a virtual platform that allows unlimited storage and access to your data over the internet.
FR-4	Modified National Institute of Standards and Technology dataset: The abbreviation MNIST stands for MNIST data set. It's a collection of 60,000 tiny square grayscale photos, each 28 by 28, containing simple handwritten numbers between 0 and 9.

Non-functional Requirements:

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

NFR-1	**Reliability**	The samples are used by the neural network to automatically derive rules for reading handwritten digits. Moreover, the network can learn more about handwriting and thus improve its accuracy by increasing the number of training instances. Many techniques and algorithms, e.g. Deep Learning/CNN, SVM, Gaussian Naive Bayes, KNN, Decision Trees, Random Forests, etc. can be used to recognize handwritten numbers.

NFR-2	**Accuracy**	For text entered in high-quality photos, Optical Character Recognition (OCR) technology delivers accuracy rates of over 99%. However, spacing discrepancies, handwriting anomalies, and the diversity of human handwriting Styles cause less accurate character recognition.
NFR-3	**Functionality**	One of the very significant problems in pattern recognition applications is the recognition of handwritten characters. Applications for digit recognition include filling out forms, processing bank checks, and sorting mail.
NFR-4	**Robustness**	The system should be able to handle a variety of input values seamlessly.