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

Date	01 November 2022
Team ID	PNT2022TMID05025
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	MNIST Dataset	A training set of 60,000 instances and a test set are included in the modified National Institute of Standards and Technology dataset (MNIST) database of handwritten digits.10,000 examples in a set.
FR-2	Data pre-processing	Enhances the image by applying a few adjustments to the input image to get it ready for segmentation.
FR-3	Image Data	Handwritten digit recognition refers to a computer's capacity to identify human handwritten digits from a variety of sources, such as photographs, documents, touch screens, etc., and categorise them into ten established classifications (0-9). In the realm of deep learning, this has been the subject of countless studies
FR-4	Website	Web hosting makes the code, graphics, and other items that make up a website accessible online. A server hosts every website you have ever visited. The type of hosting determines how much space is allotted to a website on a server. Shared,dedicated, VPS, and reseller hosting are the four basic varieties.
FR-5	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-6	Evaluation	Make that the model recognizes the digit correctly and generates the correct result.

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	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 cheques, and sorting mail.
NFR-2	**Security**	1) The system generates a thorough description of the instantiation parameters, which might reveal information like the writing style, in addition to a categorization of the digit. 2) The generative models are capable of segmentation driven by recognition. 3) The procedure uses a relatively.
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**	Information is restricted to each users limited access
NFR-5	**Availability**	Applications for digit recognition include filling out forms, processing bank checks, and sorting mail.
NFR-6	**Scalability**	The system should be able to handle 1000 users accessing the website at the same time