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

Date	016 October 2022
Team ID	PNT2022TMID08626
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.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Registration through Website Registration through Gmail Registration through LinkedIn
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	Pre processing	Model cannot take the image data directly so we need to perform some basic operations and process the data. The CNN model will require one more dimension so we reshape the matrix to shape
FR-4	Create model	Creating CNN model in Python data science project. A CNN model generally consists of convolutional and pooling layers
FR-5	Documentation	Captured in use case
FR-6	Evaluation	The Modified National Institute of Standards and Technology It is a collection of 60,000 tiny square grayscale photographs, each measuring 28 by 28, comprising handwritten single digits between 0 and 9. The MNIST dataset is well balanced so we can get around 90% accuracy

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
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 c
NFR-2	**Security**	Most PC efforts to establish safety include information encryption and passwords, OCR plays an important role for digital libraries, allowing the entry of image textual information into computers

		by digitization, image restoration, and recognition methods
NFR-3	**Reliability**	Specifies the probability of the software performing without failure for a specific number of uses or amount of time
NFR-4	**Performance**	Most standard implementations of neural networks achieve an accuracy in correctly classifying the handwritten digits.
NFR-5	**Availability**	The system is not down due to outages or maintenance activities. CNN model can determine and recognize handwritten digits with high accuracy, as it combines the weights of convolution layers during feature extraction with fully connected layers.
NFR-6	**Scalability**	The ability of a solution or system to increase its capacity to serve clients and/or increase processing rates to match demand and speed, robustness, flexible and suitable for text and document formats