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

Date	03 October 2022
Team ID	PN2022TMID40505
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	User Registration	◆ Registration through Form ◆ Registration through Gmail ◆ Registration through LinkedIN
FR-2	User Confirmation	◆ Confirmation via Email ◆ Confirmation via OTP
FR-3	processing bank cheque amounts	◆ Automatic bank cheque processing a field of interest in banking industry ◆ As a large part of cheques is still processed manually that involves the manual reading of the cheques andkeying their respective values into the compute ◆ Bank chequesare still widely used all over the world for financial transac-tions where the cheques are usually processed manually inalmost all countries.
FR-4	recognize number plates of vehicles	◆ The recognition phase is the last step in the development of the automatic license plate reader system ◆ Segmentation is one of the most important processes for the automatic identification of license plates, because any other step is based on it. ◆ To ensure proper segmentation, preliminary processing will have to be performed.
FR-5	signature verification	◆ Signatures continue to be an important biometric trait because it remains widely used primarily for authenticating the identity of human beings. ◆ Handwriting recognition has reached its maturity level; especially for the recognition of isolated digit recognition,automatic address processing, etc
FR-6	write and send SMS in mother tongue	◆ This technique is the solution when it is difficult for the viewer to understand someone else handwriting.

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	◆ Applications for digit recognition include sorting postal mail, processing bank checks, filling out forms, etc. ◆ The ability to read zip codes from mail for postal mail sorting ◆ The ability to enter numbers into forms that are filled out by hand (such as tax forms), and other similar technologies.
NFR-2	**Security**	◆ For pattern recognition and security, the ability for precise digit recognizer modelling and prediction is essential. ◆ Intelligent home security systems have evolved into essential pieces of technology for daily use.
NFR-3	**Reliability**	◆ The handwritten digits are not always of the same size,width, orientation and justified to margins as they differ from writing of person to person
NFR-4	**Performance**	◆ To compare different fusing rules in a framework composed of classifiers with high accuracies. ◆ Remains a complementarity between classifiers, even from the same approach, that improves the global recognition rate ◆ The combinations have been tested on handwritten digits.
NFR-5	**Availability**	◆ The recognition has been conducted from publicly available MNIST handwritten database.
NFR-6	**Scalability**	◆ Based on shape analysis of the digit image and extract slant or slope information. ◆ The testing set as 10,000 images with a label of 0 to 9.