

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

Date	03 October 2022
Team ID	PNT2022TMID24889
Project Name	Project – A Novel Method For Handwritten Digit Recognition Model
Maximum Marks	4 Marks

Functional Requirements:

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement	Sub Requirement (Story / Sub-Task)
FR-1	Image Data	We require image data to recognize what digit is present in the given image.
FR-2	DL Algorithm	We use Deep Learning algorithm to process the handwritten digit in the image into digital numeric format.
FR-3	Website	We require a website as a User Interface for clients to access our services. The website should be user-friendly to engage the clients
FR-4	Modified National Institution of standards and Technology Dataset	The MNIST database (Modified National Institute of Standards and Technology Database) is a large collection of handwritten digits. We have a training set of 60,000 examples and a test set of 10,000 examples. It is a subset of the larger NIST Specialty Database 3 (digits written by U.S. Census Bureau staff) and Specialty Database 1 (digits written by high school students) and contains black and white images of handwritten digits.
FR-5	Cloud	"The cloud" refers to servers that are accessed over the Internet, and the software and databases that run on those servers. Cloud servers are located in data centers all over the world. By using cloud computing, users and companies do not have to manage physical servers themselves or run software applications on their own machines.

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	Usability	The major reason why someone would use our service would be to decrease the hardship faced by employees that have to process handwritten forms such as bank-cheque processing, address comprehension and so on.

NFR-2	Security	Our service will make use of login authentication to make sure the users have some form of privacy.
NFR-3	Reliability	Algorithm will have an accuracy of 90%, further more the CNN algorithm will decipher the handwritten digits based on the rules defined by us which will be based upon the general handwritten digits.
NFR-4	Performance	Our website will be lightweight, efficient and accurate with minimum discomfort to the user.
NFR-5	Availability	Our website will be made public for everyone to use.
NFR-6	Scalability	In future, the website will be able to retain the knowledge of previous user's data and hasten the process of digit recognition.