

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

Date	03 October 2022
Team ID	PNT2022TMID48537
Project Name	Project - Hand written digit recognition
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 Gmail
FR-2	User Confirmation	Confirmation via Email
FR-3	preprocessing step	i).User should remove the hooks of the strokes by changed angle threshold. ii).Filter the noise by using a smoothing technique which is the combination of cubic spline and equal interpolation methods.
FR-4	Feature extraction	i).The data should be gathered as a different samples. ii).here,the every character is represented as a feature vector,which becomes its identity.
FR-5	Selection step	It is associated with single feature classifier and a genetic algorithm
FR-6	Classification step and verification	i).The data is classified using MNIST digits classification dataset,which contains 60,000 training images and 10,000 testing images. ii).Verification is performed by segmenting two connected digits using the oriented sliding window. iii).It employees verification using SVM classifiers.

**Non-functional Requirements:**

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

FR No.	Non-Functional Requirement	Description
NFR-1	<b>Usability</b>	
NFR-2	<b>Security</b>	
NFR-3	<b>Reliability</b>	

NFR-4	<b>Performance</b>	
NFR-5	<b>Availability</b>	
NFR-6	<b>Scalability</b>	