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

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|---|---|
| Date | 03 October 2022 |
| Team ID | PNT2022TMID22043 |
| 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 | Home page | • Description of the Handwritten Digit Recognition.<br>• If new user, Register.<br>• If the user exits, Login. |
| FR-2 | User Registration Page | • Registration through the form.<br>• Register - Name, Email id, Password, Security Question, Answer. |
| FR-3 | Login page | • Login – Name, Email id, Password, Forget password.<br>• Forget Password – Email id, Security Question, Answer, New Password. |
| FR-4 | Upload image | Upload the image and get the result. |
| FR-5 | Prediction | • The model gets the image of the Handwritten digits and recognizes the Handwritten digits.<br>• CNN algorithm is used over the MNIST dataset to recognize the Handwritten digits.<br>• After recognition it will result the digit of the Handwritten digit. |

**Non-functional Requirements:**

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

| FR No. | Non-Functional Requirement | Description |
|---|---|---|
| NFR-1 | **Usability** | Users should be able to understand and use the system easily. In addition, it ought to be simple for users of all skill levels to navigate. |
| NFR-2 | **Security** | The system should automatically be able to authenticate all users with their unique username and password |
| 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. |
| NFR-4 | **Performance** | The delay in providing the information when hundreds of requests are given should be minimum |
| NFR-5 | **Availability** | Available for every users like Banks, Post Office, Library, etc. |
| NFR-6 | **Scalability** | Model is predicted to have accuracy of 95% and has opportunity of extending the model to recognize text. |