Project Design Phase-II

Solution Requirements (Functional & Non-functional)

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| Date | 19 october 2022 |
| Team ID | PNT2022TMID23664 |
| 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.

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| **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.

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| **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. |

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| 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. |