**Project Design Phase-II**

**Technology Stack (Architecture & Stack)**

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| --- | --- |
| Date | 03 October 2022 |
| Team ID | PNT2022TMID52672 |
| Project Name | Project - A Novel Method for Handwritten Digit Recognition System |
| Maximum Marks | 4 Marks |

**Technical Architecture:**

**Table 1:**

The below table consists of the components and the technologies that are used to develop this application.

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No** | **Component** | **Description** | **Technology** |
|  | User Interface | How user interacts with the system-image and digital writing options | HTML + CSS |
|  | Machine learning model | The goal of developing the machine learning model | To train the model to recognize the written digit |
|  | Programming language | Language used to build the model | Python |
|  | Database | Data Type, Configurations to store the data | MySQL, NoSQL, etc. |
|  | Cloud Database | Maintaining the database in the cloud | IBM DB2, IBM Cloudant |
|  | File Storage | File storage requirements | IBM Block Storage |
|  | External API | To integrate the application with other applications | IBM API, Aadhar AI |
|  | Infrastructure (Server / Cloud) | Resource to run and train the model | Local servers and cloud services |

**Table 2:**

The below table consists of the application characteristics of the application that is developed.

| **S.No** | **Characteristics** | **Description** | **Technology** |
| --- | --- | --- | --- |
|  | Performance | The model is predicted to have an accuracy of 98-99 percent using the typical neural network implementations | Requests per second, memory management and cache methods |
|  | Security Implementations | The application dealing with the sensitive data of customers such as their bank details, personal details etc. should be encrypted with the latest and advanced encryption standards. | SHA-256, IAM controls, OWASP |
|  | Availability | The availability of the application should not be restricted to only particular technologies as it will affect the Business model. It can be deployed in the cloud for remote access with the help of cloud service providers. | IBM cloud, Distributed servers, Amazon cloud |
|  | Scalability | The architecture should be user friendly and simple. Scaling of the model should be done according to the need of the requirement. | 3-tier, micro services |