Project Design Phase-II
Technology Stack (Architecture & Stack)

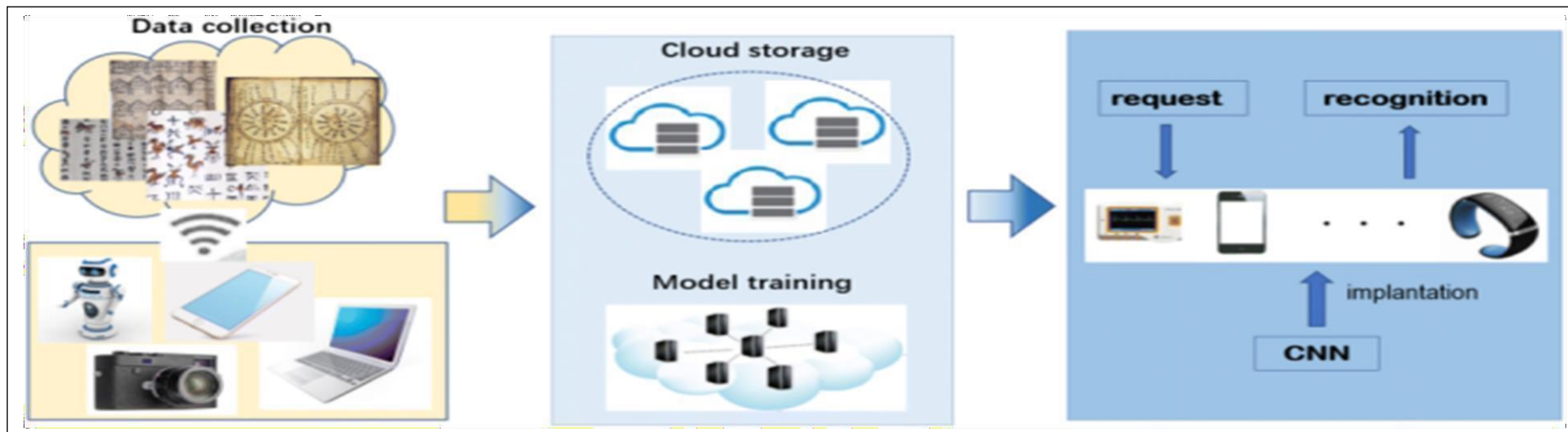| Date	14 October 2022
Team ID	PNT2022TMID40411
Project Name	A Novel Method For Handwritten Digit Recognition System
Maximum Marks	4 Marks

Technical Architecture:

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	How user interacts with application e.g. Web UI, Mobile App, Chatbot etc.	HTML, CSS, JavaScript
2.	Application Logic-1	Logic for a process in the application	Python
3.	Application Logic-2	Logic for a process in the application	IBM Watson STT service
4.	Application Logic-3	Logic for a process in the application	IBM Watson Assistant
5.	Database	Data Type, Configurations etc.	MySQL, NoSQL, etc.
6.	Cloud Database	Database Service on Cloud	IBM DB2, IBM Cloudant etc.
7.	File Storage	File storage requirements	IBM Block Storage or Other Storage Services
8.	External API-1	Purpose of External API used in the application	IBM Weather API
9.	External API-2	Purpose of External API used in the application	Aadhar API
10.	Machine Learning Model	Purpose of Machine Learning Model	Object Recognition Model etc.
11.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration Cloud Server Configuration	Local, Cloud Foundry,Kubernetes etc.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	List the open-source frameworks used	Technology of Opensource framework,Tensorflow,flask etc..
2.	Security Implementations	List all the security / access controls implemented, use of firewalls etc.	SHA-256, Encryptions, IAM Controls, OWASP.
3.	Scalable Architecture	Justify the scalability of architecture	3 – tier, Micro-services.
4.	Availability	Abstract and Figures. The features for handwritten digit recognition have been introduced. These features are based on shape analysis of the digit image and extract slant or slope information. They are effective in obtaining good recognition accuracies	Distributed servers, IBM cloud.
5.	Performance	The standard implementations of neural networks achieve an accuracy of ~ (98–99) percent in correctly classifying the handwritten digits.	number of requests per sec, use of Cache, use of CDN's and Google COLLAB etc.