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

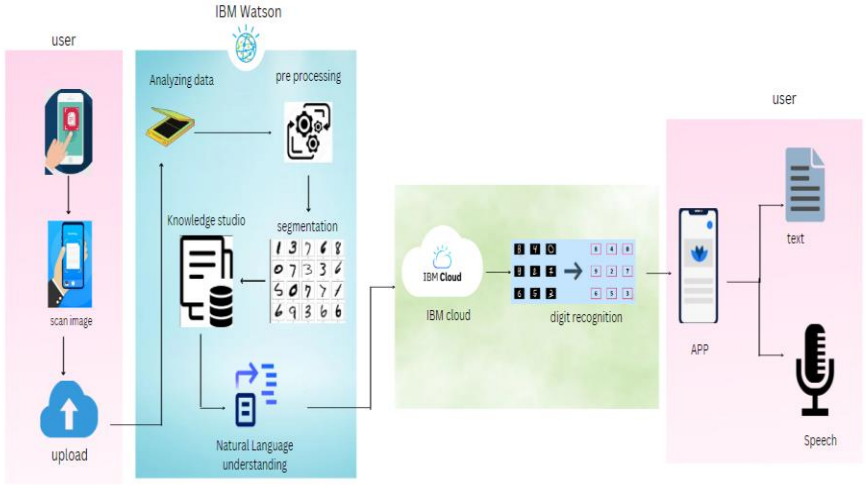
Date	03 October 2022
Team ID	PNT2022TMID00426
Project Name	Project - A Novel Method for Handwritten Digit Recognition System
Maximum Marks	4 Marks

Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2

A Novel Method for Handwritten Digit Recognition System

Reference: **https://developer.ibm.com/patterns/handwritten-digit-recognizer-in-watson-s A Novel Method for Handwritten Digit Recognition System tudio-and-pytorch/**



Guidelines:

1. Scan the image and upload it in the application.
2. IBM Watson will process and analyze the digits.
3. For processing the data we are using CNN machine learning model.
4. The model will recognize the digit and display the digits to the user through the application.

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Mobile APP	Android Studio
2.	Application Logic-1	Training and testing	Python
3.	Dataset	Various types of data sets	MNIST
4.	File Storage	File storage requirements	System Storage
5.	Machine Learning Model	Handwritten digit Recognition	CNN

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	List the open-source frameworks used	pycharm
2.	Security Implementations	List all the security / access controls implemented, use of firewalls etc.	e.g. SHA-256, Encryptions, IAM Controls, OWASP etc.
3.	Scalable Architecture	Justify the scalability of architecture (3 – tier, Micro-services)	CNN

S.No	Characteristics	Description	Technology
4.	Availability	Justify the availability of application (e.g. use of load balancers, distributed servers etc.)	CNN
5.	Performance	Design consideration for the performance of the application (number of requests per sec, use of Cache, use of CDN's) etc.	CNN

References:

https://c4model.com/

https://www.ibm.com/cloud/architecture

https://developer.ibm.com/tutorials/recognize-handwritten-digits-using-neural-networks-in-r/

https://medium.com/the-internal-startup/how-to-draw-useful-technical-architecture-diagrams-2d20c9fda90d

https://www.ibm.com/cloud/learn/convolutional-neural-networks

https://developer.ibm.com/patterns/handwritten-digit-recognizer-in-watson-studio-and-pytorch/