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

Date	02 November 2022
Team ID	PNT2022TMID37259
Project Name	Project – A Novel Method for Handwritten Digit Recognition System
Maximum Marks	4 Marks

Technical Architecture:

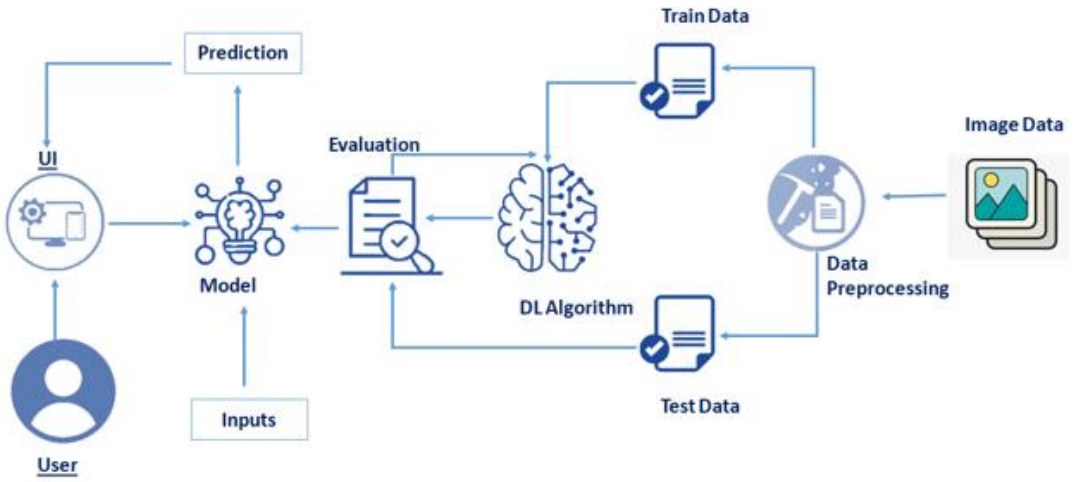

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	How user interacts with application i.e. Mobile App	HTML, CSS, React Js, Python libraries: keras, tensor flow, Numpy

2.	Data Collection	Inputting of sample data sets to train model	MNIST, Python libraries: keras, tensorflow
3.	Application Logic	Logic for a process in the application	Python
4.	Cloud Access	Storing and retrieving results	IBM Watson Assistant, IBM Watson STT Service
5.	Database	Data Type, Configurations etc.	MySQL
6.	Cloud Database	Database Service on Cloud	IBM DB2, IBM Cloudant
7.	File Storage	File storage requirements	IBM Block Storage or Other Storage Service or Local Filesystem
8.	External API	Purpose of External API used in the application	IBM Weather API
9.	Machine Learning Model	Purpose of Machine Learning Model	Object Recognition Model, CNN
10.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: Cloud Server Configuration:	Local, Cloud Foundry, Kubernetes

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Keras, TensorFlow, Numpy Libraries installed in Python	Technology of Opensource framework
2.	Security Implementations	Security / access controls implemented, Firewalls used	SHA-256, Encryptions, IAM Controls, OWASP
3.	Scalable Architecture	Architecture that organizes applications into three logical and physical computing tiers: the presentation tier, or user interface	3-tier
4.	Availability	High availability with the use of load balancers and distributed servers	SLB (Server Load Balancing)
5.	Performance	Automation to improve business performance – automated testing	Testim