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

Date	26 October 2022
Team ID	PNT2022TMID39413
Project Name	Project – A Novel Method For Handwritten Digit Recognition System
Maximum Marks	4 Marks

Technical Architecture:

- We are building a Flask Application which needs HTML pages stored in the templates folder and a python script app.py for server side scripting.
- The model is built in the notebook Hand written recognition system.ipynb
- We need the model which is saved and the saved model in this content is mnistCNN.h5
- The static folder will contain js and css files.
- The templates mainly used here are main.html and index6.html for showcasing the UI.

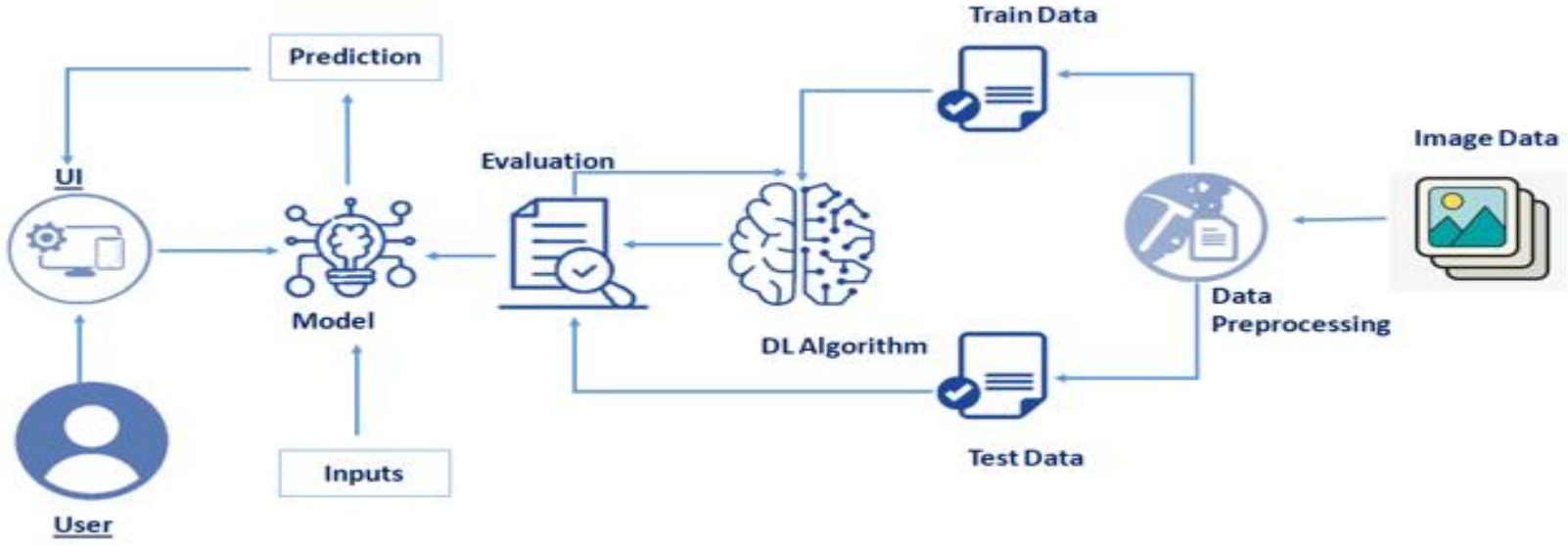

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	User to interact with the model.	HTML , CSS , JavaScript.
2.	User Input	User can draw or upload image of a digit using buttons	HTML, CSS, JavaScript.
3.	Process the Input	Input by user can send to model	HTML, Machine Learning with Python.
4.	Predict the Input	The model predicts the input digit	Machine Learning, CNN, IBM Api Services.
5.	Cloud Database	Database Service on Cloud	IBM Cloudant.
6.	Machine Learning Model	To predict and display the output of the digit	MNIST dataset, Python, HTML.
7.	Infrastructure (Server / Cloud)	Application Deployment on Local Cloud	IBM Cloud.

Table-2 : Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	The Python and other open-source frameworks are used to build the web application as well as to build the Machine Learning model	Python Flask, Numpy, Scikit-Learn,Tensorflow etc..
2.	Scalable Architecture	The 3-tier architecture used with a separate user interface, application tier and data tier make it easily scalable.	IBM Watson Studio.
3.	Availability	The web application is highly available as it is deployed in cloud.	IBM Cloud.
4.	Performance	The performance of the website is improved with caching and security.	IBM Cloud Internet Services.