Project Design Phase-II

Technology Stack (Architecture & Stack)

Date	15 October 2022
Team ID	PNT2022TMID39355
Project Name	A NOVEL METHOD FOR HANDWRITTEN DIGIT RECOGNITION SYSTEM
Maximum Marks	4 Marks

Technical Architecture:

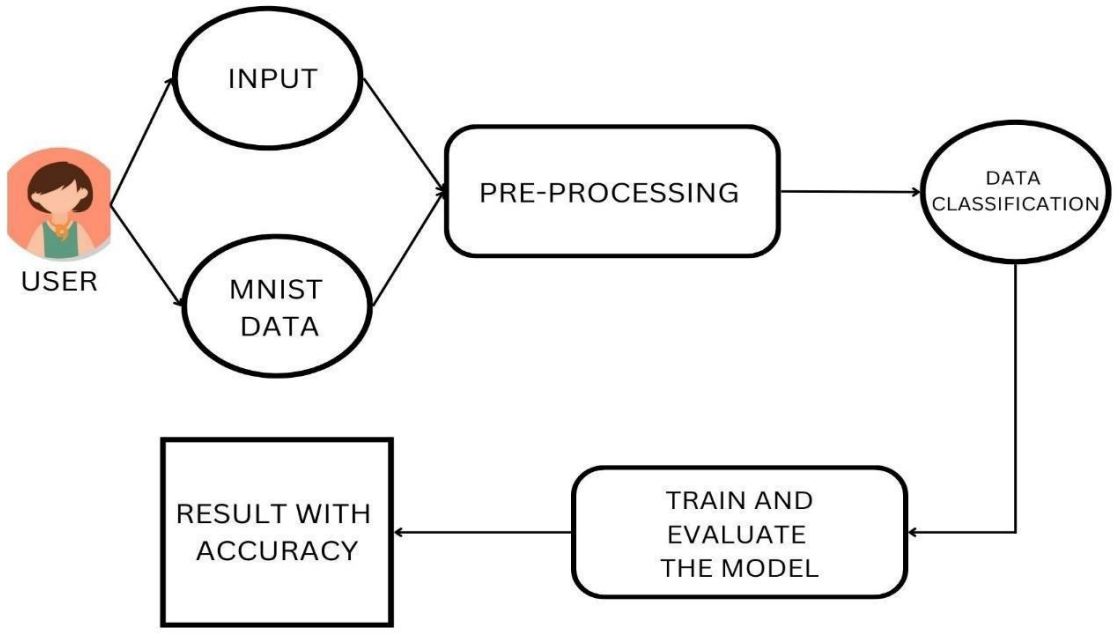

Table -1: Components & Technologies :

S.NO	Component	Description	Technology
1.	User Interface	Allows the user to enter the input and recognise the input using GUI.	HTML,CSS, JavaScript
2.	Digit Prediction	Here the digit given as a input is predicted.	Keras,CNN.
3.	Representation	Skeleton, counters, pixels or others	Java / Python
4.	Segmentation	Task of clustering parts of an image together that belong to the same object class.	Convolutional neural networks & super pixels.
5.	Machine Learning Model	Purpose of Machine Learning Model is to train and test the data and predict the user input.	Classification.
6.	Infrastructure	Application deployment on local system Local server Configuration: Intel core i5/i3 10th Generation.	HTML, CSS
7.	Neural network	Automatically infer rules for recognizing handwritten digits	Convolutional neural network

Table – 2: Application Characteristics:

S.NO	Characteristics	Description	Technology
1.	Pre-processing	Data pre-processing is a process of preparing the raw data and making it suitable for a machine learning model.	Real time online handwritten character recognition system, based on an ensemble of neural networks.
2.	Open-Source Frameworks	Enables developers to develop complex code and web application quickly.	Open source-Jupyter, anaconda navigator, flask framework.
3.	Dataset	It Contains 60,000 training images.	MNIST

4.	Security Implementations	After predicting the data, we don't store any data so we can't manipulate it in future.	Encryption
5.	Performance	Neural networks achieve an accuracy of ~(98–99) percent in correctly classifying the handwritten digits.	Convolutional Neural Networks.