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

Date	03 October 2022
Team ID	PNT2022TMID48602
Project Name	Project- A novel method for Handwritten digit recognition
Maximum Marks	4 Marks

Technical Architecture:

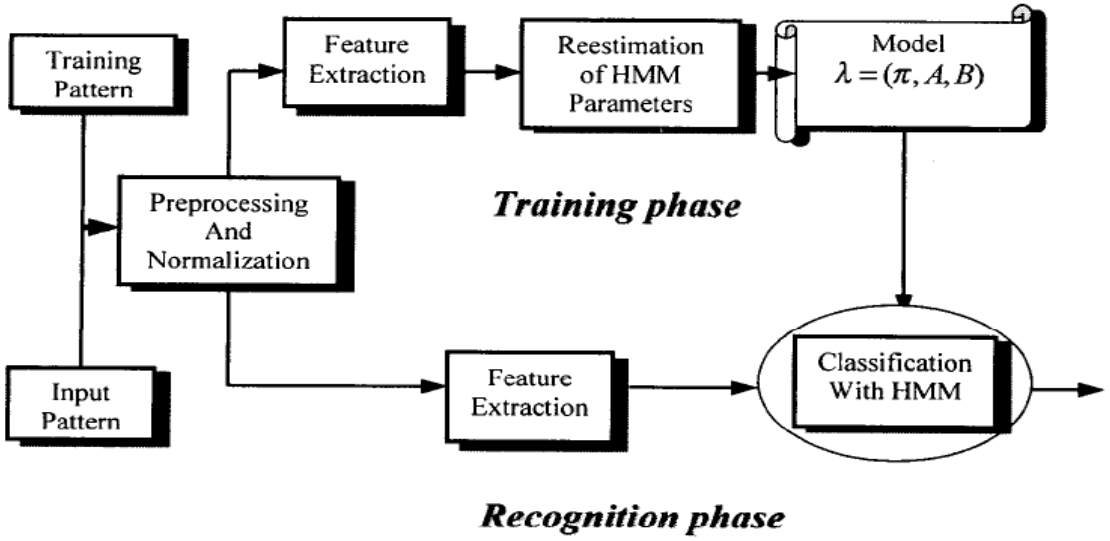

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	**MobileNet and ShuffleNet**. **Microsoft's OneNote**	AI/Python
2.	Application Logic-1	They are based on a streamlined architecture that **uses depth wise separable convolutions to build lightweight deep neural networks that can have low latency for mobile and embedded devices**	Python
3.	Application Logic-2	Hyper-parameters allow the model builder to choose the right sized model for their application based on the constraints of the problem.	java/python
4.	Application Logic-3	MobileNet uses deep convolution layer as the basic layer network, which optimizes the delay while considering the size of the model, but for target detection, the accuracy is still low.	java/python
5.	Database	Convolutional neural network	AI
6.	Cloud Database	Database Service on Cloud	Python
7.	File Storage	Cloud Storage: local processing is viable in many cases, collecting data from multiple sources and processing them in a server results to optimum parameters estimation	Cloud storage

		for achieving the best possible performance in terms of accuracy.	
8.	External API-1	Django API: Python-based web framework that follows the Model-View-Template (MVT) architectural pattern.	Python

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Security Implementations	The system not only produces a classification of digit but also rich description of instantiation parameter	Python
2.	Scalable Architecture	Scalability is one of the hallmarks of the cloud and the primary driver of its exploding popularity with businesses.	Python
3.	Availability	Makes your product ,services and tools available to your customers and employees.	Python
4.	Performance	Neural networks achieve an **accuracy of ~(98–99) percent** in correctly classifying the handwritten digits.	Python