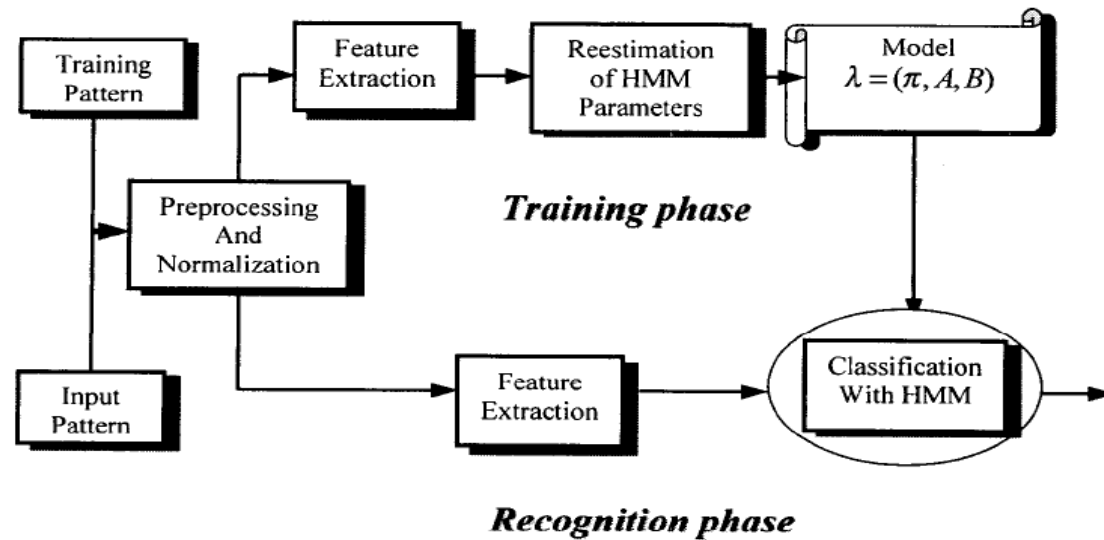


**Project Design Phase-II**  
**Technology Stack (Architecture & Stack)**

|               |   |
|---------------|---|
| Date          | 03 October 2022   |
| Team ID       | PNT2022TMID48537  |
| 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      | <b>MobileNet and ShuffleNet.</b><br><b>Microsoft's OneNote</b>  | AI/Python     |
| 2.   | Application Logic-1 | They are based on a streamlined architecture that <b>uses depth wise separable convolutions to build lightweight deep neural networks that can have low latency for mobile and embedded devices</b> | 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 <b>accuracy of ~(98–99) percent</b> in correctly classifying the handwritten digits.      | Python     |