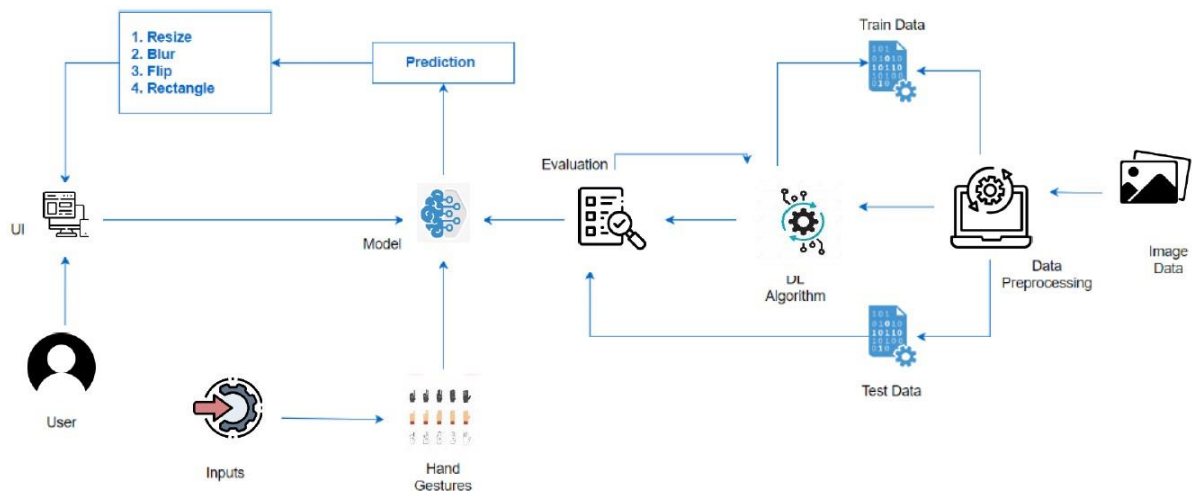


## PROJECT DESIGN PHASE – II

### Technical Architecture:

|               |   |
|---------------|---|
| DATE          | 19 October 2022   |
| TEAM ID       | PNT2022TMID25935  |
| PROJECT NAME  | A Gesture - Based Tool for Sterile Browsing of Radiology Ideations Images |
| MAXIMUM MARKS | 4 Marks   |

### TECHNICAL ARCHITECTURE:



**Table-1: Components & Technologies:**

| S.No | Component           | Description   | Technology   |
|------|---------------------|---|--|
| 1.   | User Interface      | How user interacts with application e.g. Web UI, Mobile App, Chatbot etc.   | HTML, CSS, JavaScript / Angular JS / React JS etc. |
| 2.   | Application Logic-1 | Variety of frameworks, libraries and Supports are required to develop the project   | Java / Python                                      |
| 3.   | Application Logic-2 | Helps to convert the hand signs and hand gestures into the written words to surf on the internet and communicate with computer. | IBM Watson STT service                             |

|     |                                 |   |  |
|-----|---------------------------------|---|--|
| 4.  | Application Logic-3             | Provides fast, consistent and accurate answers after recognizing the human hand gestures and signs.                                     | IBM Watson Assistant   |
| 5.  | Database                        | It can be numerical, categorical or time-series data  | MySQL, NoSQL, etc.   |
| 6.  | Cloud Database                  | Enables the user to use host database without buying the additional hardware  | IBM DB2, IBM Cloudant etc.                                     |
| 7.  | File Storage                    | File storage should be highly flexible, scalable, effective, fast and reliable.   | IBM Block Storage or Other Storage Service or Local Filesystem |
| 8.  | External API-1                  | Used to access the information in the cloud   | IBM Weather API, etc.  |
| 9.  | External API-2                  | Used to access the information for data driven decision making  | Aadhar API, etc.   |
| 10. | Machine Learning Model          | Machine Learning Model deals with various algorithms that are needed for the implementation   | Image Recognition Model, etc.                                  |
| 11. | Infrastructure (Server / Cloud) | Application Deployment on Local System / Cloud<br>Local Server Configuration:<br>Install the windows version and execute the installer. | Local, Cloud Foundry, Kubernetes, etc.                         |

**Table-2: Application Characteristics:**

| S.No | Characteristics          | Description   | Technology  |
|------|--------------------------|---|---|
| 1.   | Open-Source Frameworks   | The frameworks used in the project are  | Tensor flow, Theano, RNN, pytorch, Flask  |
| 2.   | Security Implementations | The security / access controls are implemented using firewalls etc..  | Firewall and other security related software's.   |
| 3.   | Scalable Architecture    | the scalability of architecture (3 – tier, Microservices)   | Data, models, operate at size, speed, consistency and complexity  |
| 4.   | Availability             | the availability of application (e.g., use of load balancers, distributed servers etc.)                               | Image and facial recognition, speech recognition and real time captioning.  |
| 5.   | Performance              | Design aspects for the performance of the application (number of requests per second, use of Cache, use of CDN's) etc | Full and effective participation, equality of opportunity, accessibility, using machine learning for communication. |