Project Design Phase-II

Technology Architecture

Technical Architecture:

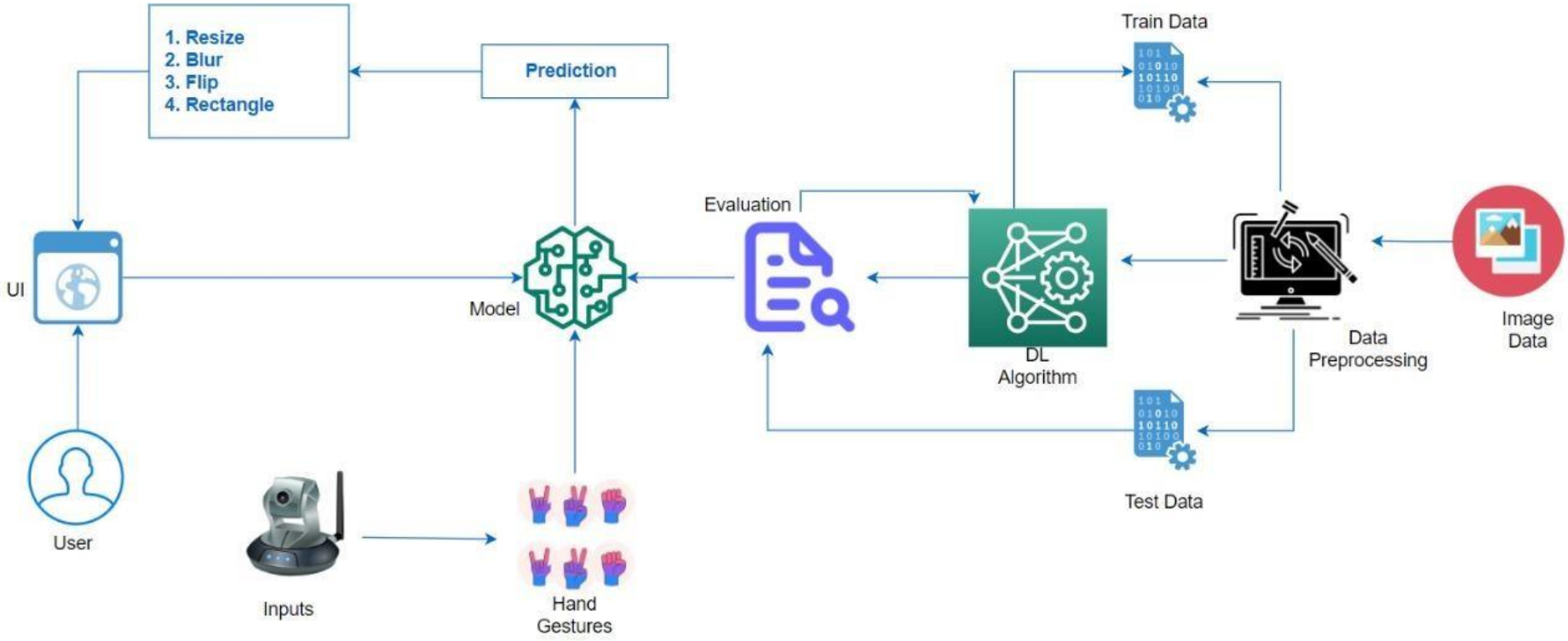

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Web UI	HTML, CSS, JavaScript.
2.	Application Logic-1 Image Pre-processing	Input image is pre-processed with the help of library files	Python, TensorFlow
3.	Application Logic-2 Building Model	Building CNN model to recognize the gesture.	Python, Keras
4.	Application Logic-3 Creation of app	App is built to obtain gesture as input and to provide as output.	HTML, CSS, JavaScript
5.	Dataset	Hand gesture data set.	From IBM
6.	Cloud Database	User input image is stored in cloud.	IBM Cloud
7.	File Storage	File storage contains dataset and source code.	Server and Local Filesystem
8.	Machine Learning Model	CNN Model was used to recognize the preprocessed image by image capturing or by video segmenting.	CNN Model by Python, Keras

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	For development of code, package manager, for building model	Visual Studio Code, Conda, TensorFlow
2.	Resilient	Gestures can be captured in different environments (variable brightness and distance).	OpenCV, TensorFlow
3.	Availability	Deploy on highly available server	IBM Cloud
4.	Performance	CNN model is used to predict the input gesture in a shorter span of time.	TensorFlow, Keras
5.	Diverse Dataset	Data augmentation to generate more data from limited set of images.	Keras