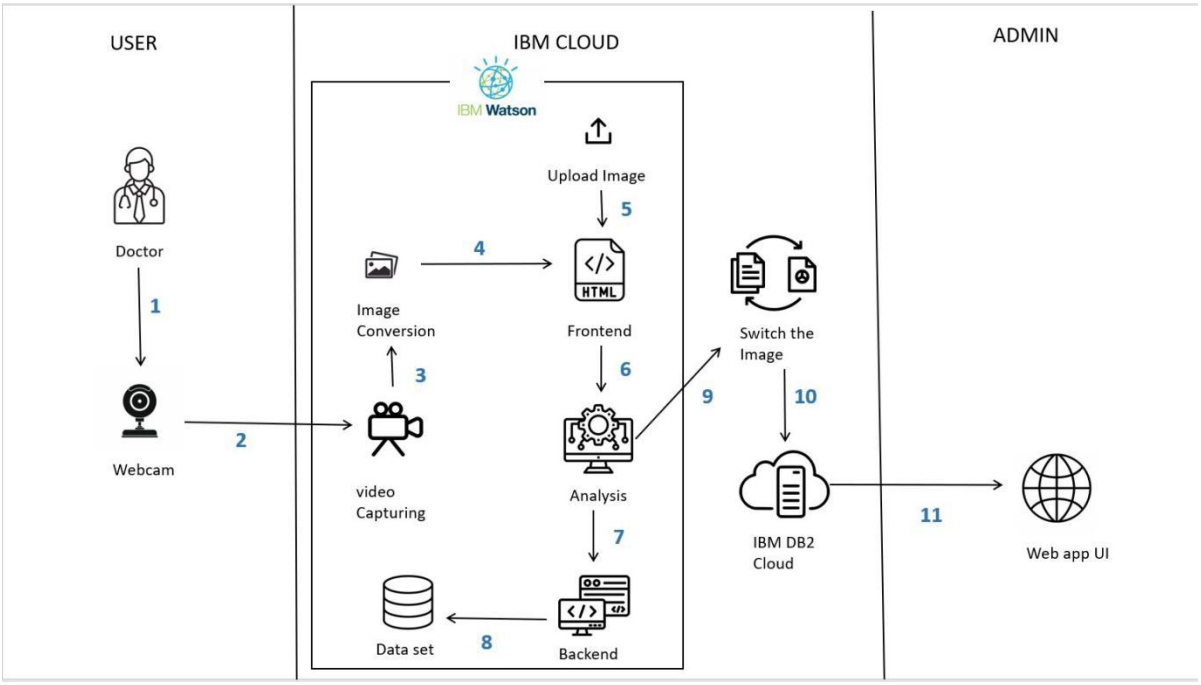
Project Design Phase II

Technology Stack (Architecture & Stack)

Date	03 October 2022
Team Id	PNT2022TMID52615
Project name	A Gesture-Based Tool for SterileBrowsing of Radiology Images
Maximum Marks	4 Marks

Technical Architecture:

The Deliverable Shall include the architectural diagram as below and the information as per the table 1 &table 2.



Guidelines:

1.The webcam scans the hand gestures of the Doctor.

2.The video is recorded by the webcam.

3.The captured video is converted into image in pixels.

4.The image pixel is displayed in the frontend.

5.The uploaded image which is to be processed is also displaced in the frontend.

6.The submitted image and hand gestures are analysed using the algorithm.

7,8. After analysing, the algorithm invokes the backend services and data set.

9.The algorithm switches the image in accordance with the hand gesture.

10.The switched image is stored in IBM DB2 cloud.

11.The switched image is displayed in the web app UI.

Table 1: Components &Technologies:

S. No	Component	Description	Technology
1.	User Interface	The user interacts with the model using Web UI.	HTML, CSS, JavaScript
2.	Application Logic-1	The model Captures the Hand Gesture of Doctor.	CNN, NLP
3.	Application Logic-2	The Captured videos is converted into image pixels.	CNN, NLP
4.	Application Logic-3	The model Analyzes the Hand Gesture Image & the uploaded image.	CNN, NLP
5.	Database	Images, Videos	Python, Flask
6.	Cloud Database	Uploaded image by the user.	IBM DB2, IBM Cloudant etc..
7.	File Storage	Storage of images &Videos	IBMBlock Storage,Excel
8.	External API-1	It is used to Store the image uploaded by the user.	IBM Cloud API etc..
9	Machine Learning Model	It processes the image and alters it according to the Hand Gestures	Image recognition Model , etc…
10.	Infrastructure (Server/Cloud)	Cloud ServerConfiguration : IBM Cloud	IBMCloud, Kubernetes.

Table 2 : Application Characteristics:

S. No	Characteristics	Description	Technology
1.	Open-Source Framework	TensorFlow, Numpy.	CNN, NLP
2.	Security Implementations	Integrity check, Password Hashing.	Eg: SHA-256, IAM
3.	Scalable Architecture	The Models are highly Scalable.	CNN, Tensorflow
4.	Availability	The Services all available through internet connection.	Internet
5	Performance	The model Perform effectively and efficiently	DeepLearning ,Neural Networks