Project Design Phase-I
Proposed Solution

Date	24 September 2022
Team ID	PNT2022TMID34850
Project Name	A gesture-based tool for sterile browsing of radiology images
Maximum Marks	2 Marks

Proposed Solution :

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Interaction between doctor-computer inside the operation room. Keyboard and pointing devices such as mouse are today's method of human-computer interaction. However, the use of computer keyboard and mouse by doctors and nurses in intensive care units is a common method of spreading infections.
2.	Idea / Solution description	In this project, we use hand gestures as an alternative to existing interface techniques, offering the major advantage of sterility.
3.	Novelty / Uniqueness	We are using Convolutional Neural Network to first train the model on the images of different hand gestures, like showing numbers with fingers as 0,1,2,3,4,5. Then we made a web portal using Flask where user can input any image on which one wants to perform the operations. After uploading the image, our portal uses the integrated webcam to capture the video frame using OpenCV. The gesture captured in the video frame is compared with the Pre-trained model and the gesture is identified. If the prediction is 0 - then images is converted into rectangle, 1 - image is Resized into (200,200), 2 - image is rotated by -45□, 3 - image is blurred , 4 - image is Resized into (400,400) , 5 - image is converted into gray scale.
4.	Social Impact / Customer Satisfaction	Contributing the corporate social responsibility by providing better solutions to the healthcare and to patients.
5.	Business Model (Revenue Model)	Can collaborate with diagnosis centers and hospitals. It can also collaborate with government health awareness camps.
6.	Scalability of the Solution	The use of doctor-computer interaction devices in the operation room supports medical imaging manipulation while allowing doctors' hands to remain sterile, supporting their focus of attention, and providing fast response times.