Project Design Phase-II
Solution Requirements (Functional & Non-functional)

Date	16 October 2022
Team ID	PNT2022TMID33174
Project Name	Project – A Gesture based tool for sterile browsing of radiology images
Maximum Marks	4 Marks

Functional Requirements:

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	NAME: Enter Name EMAIL: Enter Mail PASSWORD: Enter Password PHONE: Enter Phone
FR-2	User Confirmation	Thanks for your email We've received your support request, and someone from our team will be in touch soon. In the meantime, one of these articles from our Help centre might help get you an instant answer to your question.
FR-3	Product Features	• It provides real- time data to a computer to make it fulfill the user's commands.

		• various wearable devices have been developed and inertial sensors, gyro sensors, electromyography, force-sensitive resistots and others types of sensors have been used to identify gestures.
FR-4	Authentication	• A new method of authentication which will identify a person's hand gestures or fingers making a motion in the air to authenticate their identity • The system is also low on error rate because the gestures or finger motions in the air won't be exactly the same each time and with machine learning it can spot fraud. • The possible applications of the authentication system include VR applications, or operating theatre with touchless interface for doctors.
FR-5	External Interface	• The mouse and keyboard remain the most utilized user interfaces for radiologists. • Touchscreen, holographic, kinetic sensors and eye tracking offer new possibilities for interaction.
FR-6	Report	• The sum of a radiologist's highest level of synthesis and insight into a patient's condition and is the most important way that radiologists contribute to patient care. In most instances, it is the only communication with referrers.

Non-functional Requirements:

Following are the non-functional requirements of the proposed solution.

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	• Movement usually of the body or limbs that expresses or emphasizes an idea,

		sentiment or attitude raised his hand overhead in a gesture of truimph. • The use of motions of the limbs or body as a means of expression. • •Within an operating room, surgeons need to interact with a large amount of patients medical information and data. In order to avoid misunderstanding among the staff and protecting the patient safety, the medical staff may use a touchless interaction system that allows the surgeons to directly interact with digital devices that visualize digital images.
NFR-2	**Security**	• Controlling devices using facial expression identification and recognition for assisting physically disabled
NFR-3	**Reliability**	• Ideally, gesture recognition should be based on a photo of a still hand showing only a single gesture against a clear background in well-lit conditions. But real-life conditions are hardly ever like that. We don't always get the comfort to use solid, clear backgrounds when presenting gestures. • The role of machine learning in gesture recognition is, in part, to overcome some of the main technical issues associated with proper identification of gesture images.
NFR-4	**Performance**	• the statistical representation used to identify specific gestures of motion involving the hands, head, face, and/or body. The paper addresses Hand Gesture Recognition (HGR) using novel machine learning and deep learning approaches. Machine learning algorithms viz. Artificial Neural Network (ANN) and Support Vector Machine (SVM) was implemented using spatial features comprising of geometrical features and Fourier descriptors. The experimental results revealed that ANN is better compared with SVM results.
NFR-5	**Availability**	• Talking to computer.

		• Medical Operation. • Gesture-based Gaming control. • Hand gesture to control the home appliances like MP3 player, TV etc. • Gesture control car Driving. Communication
NFR-6	**Scalability**	• The consumer market is open for new experiences in HMI and hand recognition technology is a natural evolution from touchscreens. • • Demand for smoother and more hygienic means of interaction with devices as well as concern for driver safety are pushing the adoption of HGR in industries from healthcare to automotive and robotics.