

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

Date	18 October 2022
Team ID	PNT2022TMID23290
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	System design	<ul style="list-style-type: none"> Faster recognition and response is needed Robustness of the system.
FR-2	User Confirmation	<ul style="list-style-type: none"> Confirmation via password Confirmation via face detection
FR-3	Background selection	<ul style="list-style-type: none"> Colour of background must be different as possible from skin colour. The floor colour should offer minimum self-shadowing problem.
FR-4	Camera orientation and distance	<ul style="list-style-type: none"> Point the camera towards wall or floor with high lighting. The distance of the camera from the hand should cover the entire gesture mainly.
FR-5	Webcam system	<ul style="list-style-type: none"> The web cam should work by continually capturing the frames. Grayscale picture can be done for extra amount of processing required for dealing coloured images.
FR-6	Reduction in variability of hand gestures	<ul style="list-style-type: none"> Single coloured camera mounted above a neutral coloured desk. User will interact by gesturing in the view of the camera. Training is must.

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	Usability	In operation rooms, surgeons use touchless interaction system for direct interaction of digital devices.
NFR-2	Security	Authentication set up for only authorized people use.
NFR-3	Reliability	Real time hand gesture recognition with the help of a web camera, which took pictures of hand on a prescribed background and then applied

		the classification algorithm for recognition.
NFR-4	Performance	This system detects various types of human gestures with high sensitivity, high durability, and fast response.
NFR-5	Availability	The system based on wearable devices is considered to be limited by high costs. Therefore, low-cost wearable devices are strongly required.
NFR-6	Scalability	It can predict gesture of any size, angle etc.

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