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

Date	03 October 2022
Team ID	PNT2022TMID36007
Project Name	Virtual Eye - Drowning Detection
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	The swimming pool authorities incharge of the application create accounts for them. They can create an account using their email id and a custom password.
FR-2	User Confirmation	The account creation is confirmed by sending an email to the registered email address and the user is expected to click on the confirmation link for successful account creation.
FR-3	VIdeo capture start and stop	Options Start capturing the swimming pool when people come and stop when the swimming pool is not in use. This is to avoid capturing unnecessary data when there is no one using the swimming pool. These options can be accessed only by the authorized people.
FR-4	Drowning Detection	When a person is captured struggling to breathe or unable to balance and show signs of drowning, the swimmer is flagged as drowning and the information is sent to the alert system for further processing.
FR-5	Alert System	Once the Alert system has detected a drowning person, the system alert goes off to intimate the life guards about the person in danger. The alarm can also be turned on by the monitoring person manually. After the situation is handled the authorized person must be able to switch off the alert and continue monitoring the swimming pool.
FR-6	Location marker	When a person is detected drowning, it is necessary to know exactly where the person is in a pool with a lot of people swimming. This is to make the lifeguards and the help team arrive at the right time. The camera number that captured the person and the direction of the swimmer will be provided in the alert message.
FR-7	Store data	To maintain the data of the swimming pool user activities the videos captured will be stored in the cloud DB for future training of the model.

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	The user of the application should be able to use it without an instruction manual or any other person's help. It must be user friendly and self explanatory.
NFR-2	**Security**	The access to the application of a particular swimming pool must be given to only authorized persons. This is to ensure the footage of the swimmers practicing isn't misused and unwanted false alarms.
NFR-3	**Reliability**	The application should be able to detect and alert correctly when a person is drowning. Since it involves people's lives, the reliability of the application is of major concern.
NFR-4	**Performance**	The application should be built with a high performance model that predicts a swimmer drowning accurately. The time taken to alert must be optimal to make the help arrive on time.
NFR-5	**Availability**	The application must be available to its users at all times and should not suffer crashes. It must be able to work well even when it is running for a long period of time.
NFR-6	**Scalability**	The application must be built in such a way that it can have its features updated and add new features after deployment. Listen to the customer review and work on the addition and removal of features to provide good user experience.