

**Project Design Phase-I**  
**Proposed Solution**

Team ID	PNT2022TMID50752
Project Name	VIRTUAL EYE LIFEGUARD FOR SWIMMING POOL TO DETECT ACTIVE DROWNING SYSTEM
Maximum Marks	2 Marks

**Proposed Solution Template:**

S.No.	Parameter	Description
•	Problem Statement (Problem to be solved)	This project describes the drowning detection system for the prevention of drowning incidents in swimming pools. The problem boundary clearly distinguishes between the positive samples which are inside the boundary to those that are less relevant and outside the boundary. It works like an “extra lifeguard” under the water of swimming pools. For instance, If it happens to someone to drown inside the swimming pool, it makes them take an excess amount of water content which affects the internal organs and sometimes it may be the cause of death. This detection system tracks the movements of everything inside the water bodies and will help to guard the lives by finding them easily.
•	Idea / Solution description	In order to detect the Victim we are converting video into image.Yolo Model Algorithm employs Convolutional Neural Network to detect the drowning person in the swimming pool.This module used to alert the lifeguard by using the triggered alarm. If any person not drowning in the pool not use the alarm to notify to the safeguard.
•	Novelty / Uniqueness	Availability of better dataset, modern methodologies, and technologies with high computational power accompanied by high-quality surveillance cameras, will help to improve the accuracy of drowning detection & even can be used in adverse conditions.
•	Social Impact / Customer Satisfaction	In case of an incident it is possible to extract and store not only the video but also pulse rate of a victim so it will be useful to identify the

		reason behind his/her drownness.
•	Business Model (Revenue Model)	After the implementation of all these essentials, this system also can be used on sea beaches for drowning detection.
•	Scalability of the Solution	Using Image processing technique in achieving expected results. Peak Signal to Noise Ratio (PSNR), Mean Square Error(MSE) and Correlation Index(CI) its depends upon achieve result.