Project Design Phase-II
Technology Stack (Architecture & Stack)

Date	15 October 2022
Team ID	PNT2022TMID18501
Project Name	Virtual Eye-LifeGuard for Swimming pool to detect active drowning
Maximum Marks	4 Marks

Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & tab

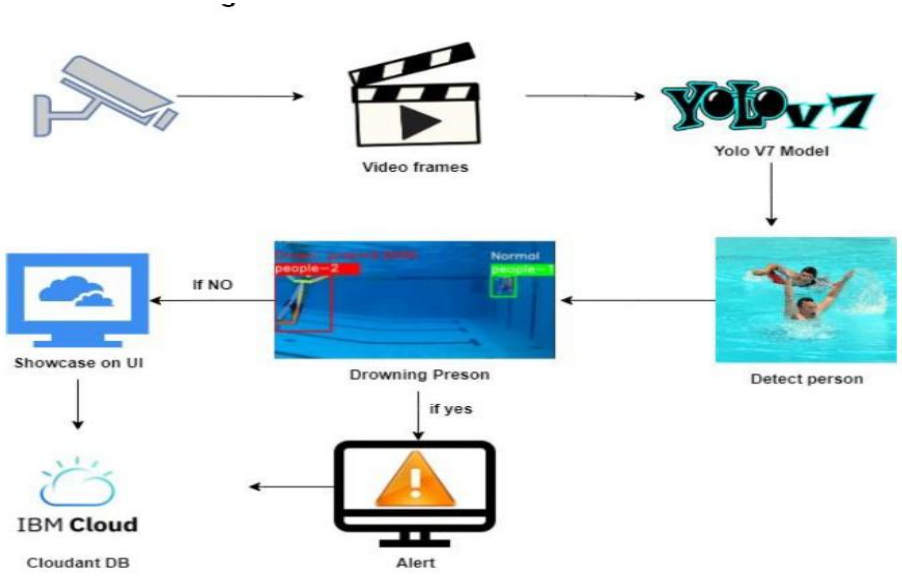

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	How user interacts with application e.g. FLASK	HTML, CSS, JavaScript , Flask
2.	Application Logic-1	It deals with variety of frameworks, libraries and supports required to develop the project	Python flask.
3.	Application Logic-2	Drowning Detection	Tensor flow, Keras , cv2, YOLO
4.	Cloud Database	Enables the user to use host database without buying the additional hardware	IBM Cloudant etc.
5.	External API-1	It helps to play the alert sound when the person is drowning.	Playsound
6.	Machine Learning Model	Machine Learning Model deals with various algorithms that are needed for the implementation	YOLO based CNN Model.
7.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: Install the windows version and execute the installer	Local, Cloud Database.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	The frameworks used are:	Flask, Tensor flow , OpenCV
2.	Security Implementations	the security / access controls implemented	
3.	Scalable Architecture	the scalability of architecture (3 – tier, Micro-services)	Data , models, operate at size, speed and complexity
4.	Availability	the availability of application (e.g. use of load balancers, distributed servers etc.)	Video Frames Detection , Movement detection
5.	Performance	Design consideration for the performance of the application (number of requests per sec, use of Cache, use of CDN's) etc.	Full and effective participation , equality of opportunity, accessibility