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

Date	8 November 2022
Team ID	PNT2022TMID03921
Project Name	VirtualEye - LifeGuard for Swimming Pools 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 & table 2

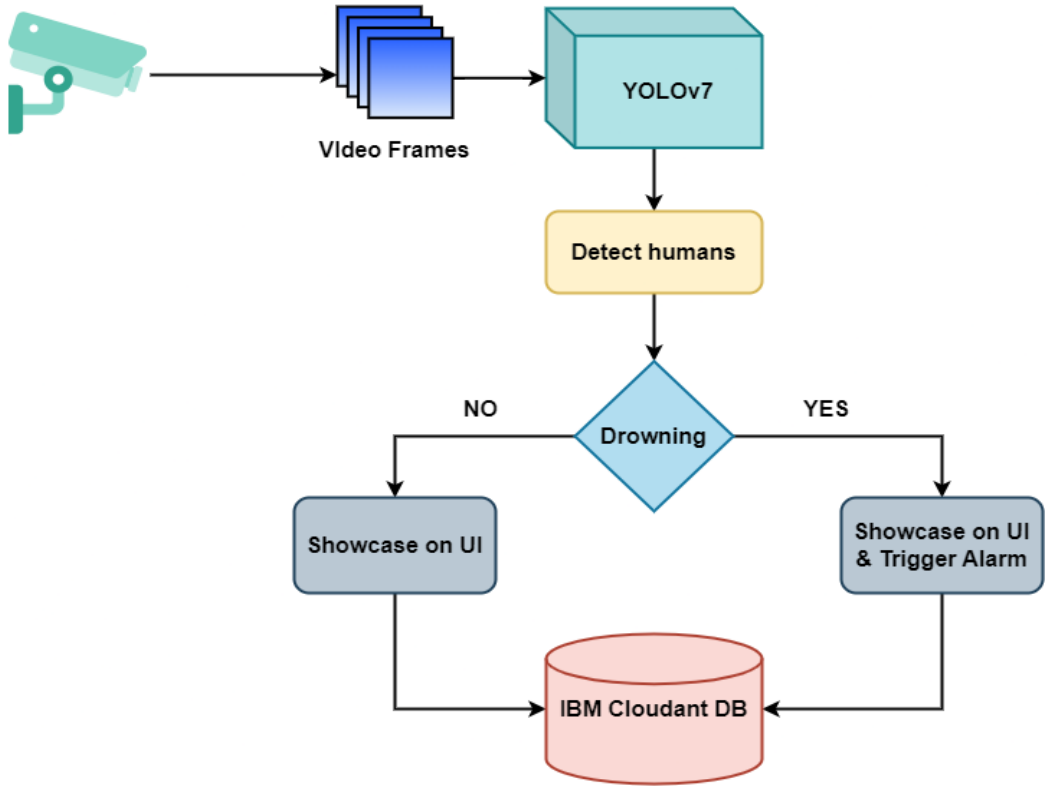

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	How user interact with the application	HTML, JavaScript, CSS
2.	Application Logic-1	Extracting frames from live video feed	Python
3.	Application Logic-2	Person Detection	Python
4.	Application Logic-3	Detect drowning	Python
5.	Database	Data Type, Configurations etc.	MySQL, NoSQL, etc.
6.	Cloud Database	Database Service on Cloud	IBM Cloudant DB
7.	File Storage	File storage requirements	IBM Block Storage or Other Storage Service or Local Filesystem
8.	Machine Learning Model	Detect humans	Object Detection Model (YOLOv7)
9.	Infrastructure (Server / Cloud)	Application Deployment on Cloud	Cloud Foundry, Docker.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Anaconda Navigator, PyTorch, Flask,	Technology of Open-source framework
2.	Security Implementations	Security / access controls	IAM Controls
3.	Scalable Architecture	Whether demand increases gradually or abruptly, scalable web architecture can accommodate any load without compromising the application's integrity.	Microservies, Progressive Web Apps (PWA)
4.	Availability	Availability of applications like load balancers, distributed servers etc.	IBM Cloud

S.No	Characteristics	Description	Technology
5.	Performance	Designing the system software that can monitor a wide range of swimming pool at a time without any delay and to provide accurate predictions	IBM instance