

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

Date	30 October 2022
Team ID	PNT2022TMID54220
Project Name	Virtual Eye- Lifeguard for Swimming Pools to detect Active drowning
Maximum Marks	4 Marks

Technical Architecture:

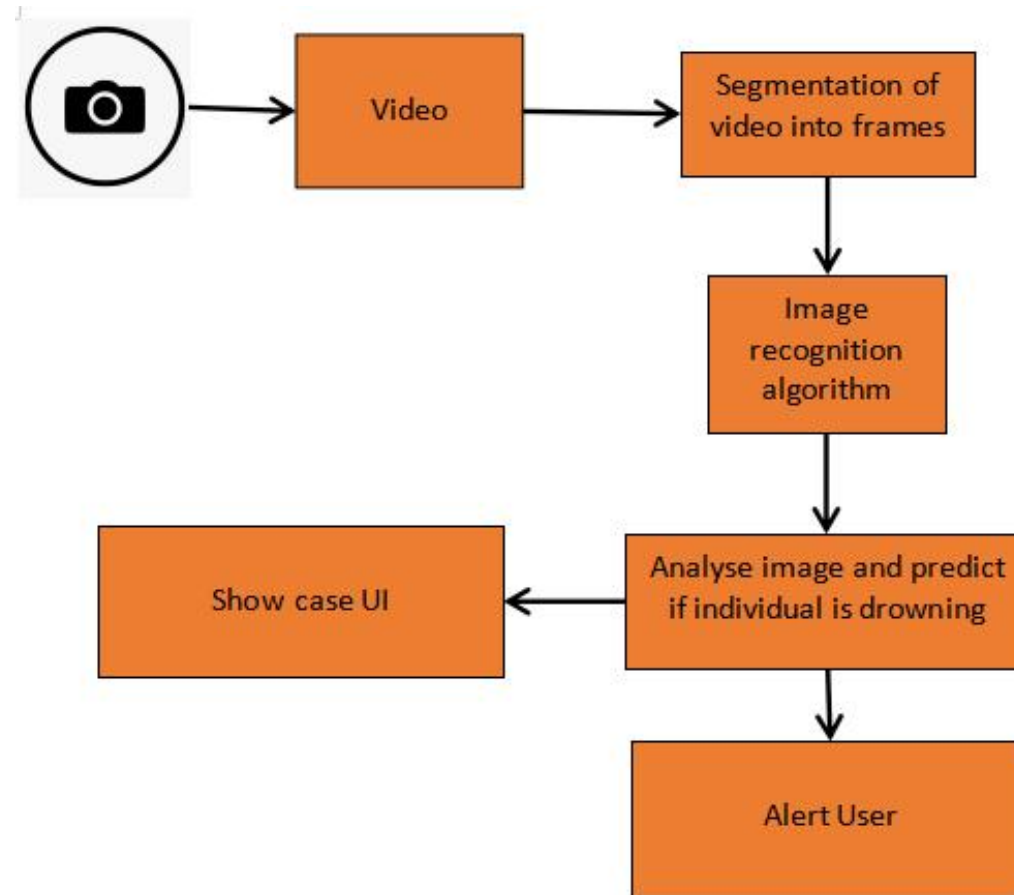


Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Website	HTML, CSS, JavaScript
2.	Application Logic-1	Training machine learning model	Python
3.	Application Logic-2	Fetching video footage for processing	IBM Watson STT service
4.	Application Logic-3	Predicting drowning people	IBM Watson Assistant
5.	Database	User credentials, video footage	NoSQL
6.	Cloud Database	Fetch uploaded video footage	IBM Cloudant
7.	File Storage	Images,video	IBM Block Storage
8.	External API-1	Fetch data from database to server	IBM Weather API, etc.
9.	External API-2	Validate user credential	Authentication API
10.	Machine Learning Model	To predict if the individual is drowning	Image recognition model
11.	Infrastructure (Server / Cloud)	Application Deployment on Cloud	Cloud Foundry

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Online Framework to train machine learning model	Google Colab
2.	Security Implementations	User validation and sign in(Password hashing)	SHA-256, Encryptions
3.	Scalable Architecture	Scale the application using horizontal scaling	IBM Autoscaling
4.	Availability	Distributed servers and load balancers to handle request without overload	IBM Cloud Load balancer
5.	Performance	High speed processing system and capacity to handle large number of requests per second	IBM Instance