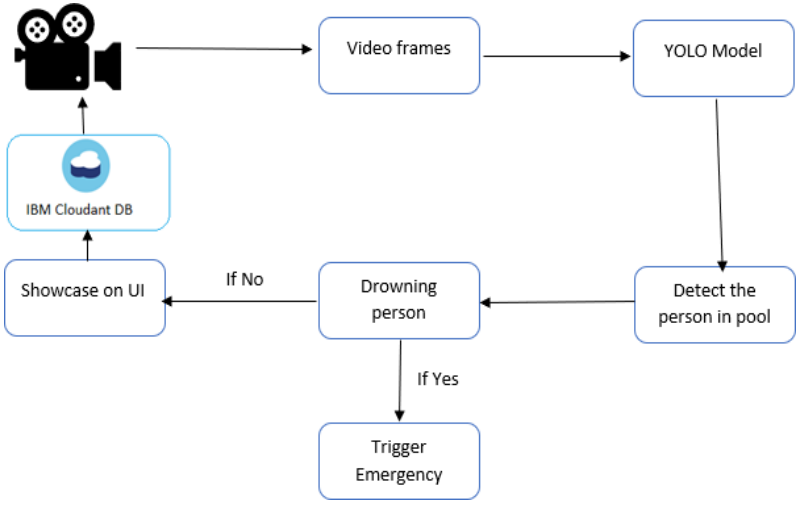
Project Design Phase-II
Technology Stack (Architecture & Stack)

Date	03 October 2022
Team ID	PNT2022TMID37261
Project Name	Project - AI-based localization and classification of skin disease with erythema
Maximum Marks	4 Marks

Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2

Reference: https://www.nature.com/articles/s41598-021-84593-z



Guidelines:

1. Include all the processes (As an application logic / Technology Block)
2. Provide infrastructural demarcation (Local / Cloud)
3. Indicate external interfaces
4. Indicate Data Storage components / services
5. Indicate interface to deep learning model

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Online Application	Python
2.	Application Logic-1	Object Detection	Microsoft's Visual Object Tagging Tool (VoTT)
3.	Application Logic-2	Image Detection	YOLO Model
4.	Database	Data Type, Configurations etc.	MySQL, NoSQL
5.	Cloud Database	Database Service on Cloud	IBM Cloudant DB, IBM Watson Studio
6.	File Storage	File storage requirements	IBM Block Storage or Other Storage Service or Local Filesystem
7.	Computer Vision	Microsoft's Visual Object Tagging Tool (VoTT)	Object Recognition Model
8.	Deep Learning Model	To perform skin Diagnosis	YOLO Model
9.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud	Local, Cloud Foundry, Kubernetes, etc.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	List of the open-source frameworks used	Microsoft's Visual Object Tagging Tool (VoTT)
2.	Security Implementations	List of the security / access controls implemented, use of firewalls	SHA-256, Encryptions, IAM Controls, OWASP
3.	Scalable Architecture	Cloud Solution Architects	IBM Cloudant DB

S.No	Characteristics	Description	Technology
4.	Availability	Online Application	YOLO Model, MySQL, IBM Watson Studio
5.	Performance	Design consideration for the performance of the application (number of requests per sec, use of Cache, use of CDN's)	YOLO Model

References:

https://www.ibm.com/cloud/architecture

https://learn.microsoft.com/en-us/dotnet/machine-learning/how-to-guides/label-images-for-object-detection-using-vott

https://towardsdatascience.com/yolo-object-detection-with-opencv-and-python-21e50ac599e9

https://aws.amazon.com/architecture

https://medium.com/the-internal-startup/how-to-draw-useful-technical-architecture-diagrams-2d20c9fda90d