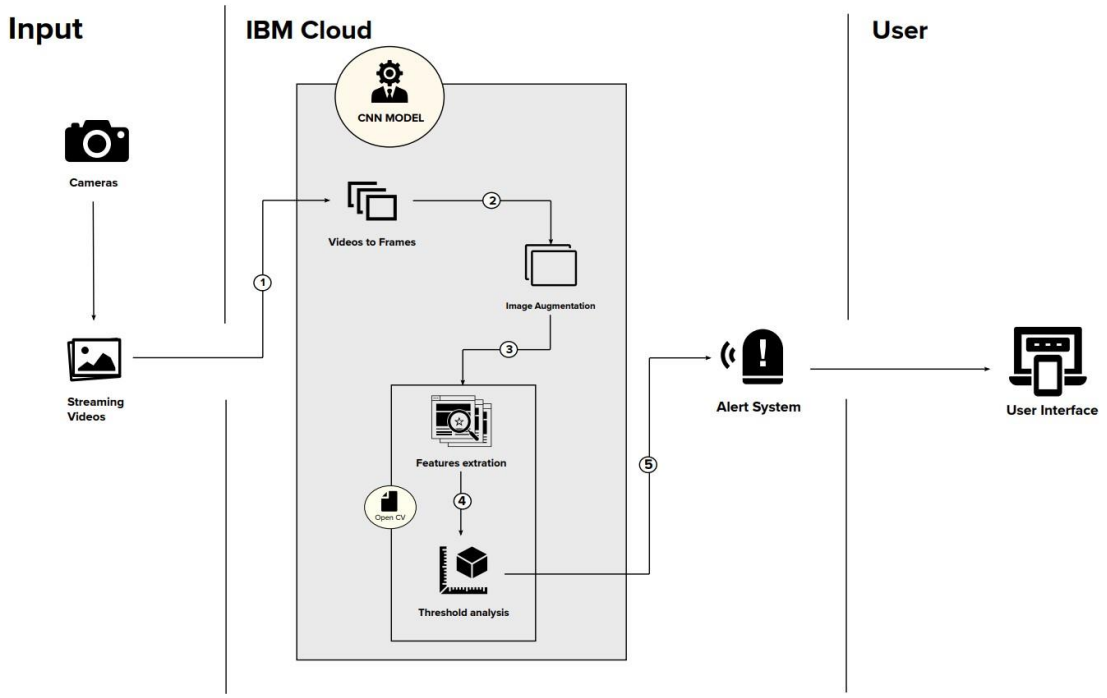
Project Design Phase-II
Technology Stack (Architecture & Stack)

Date	16 October 2022
Team ID	PNT2022TMID06664
Project Name	Emerging methods for early detection of forest fires.

Technical Architecture:

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



Guidelines:

- Include all the processes (As an application logic / Technology Block)
- Provide infrastructural demarcation (Local / Cloud)
- Indicate external interfaces (third party API's etc.)
- Indicate Data Storage components / services
- Indicate interface to machine learning models (if applicable)

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	How user interacts with application e.g. Web UI, Mobile App, Chatbot etc.	Mobile application.
2.	Input Source	Videos and images	Surveillance cameras.
3.	Preprocessing	Converting videos to frames,performing image augmentation.	Python
4.	Model Creation	Performing feature extraction and threshold analysis.	Python,OpenCV.
5.	Database	Data Type, Configurations etc.	MySQL.
6.	Cloud Database	Database Service on Cloud	IBM DB2,AWS etc.
7.	File Storage	File storage requirements	IBM Block Storage.
8.	External API-1	Purpose of External API used in the application	IBM Weather API, etc.
9.	Deep Learning Model	Purpose of deep Learning Model	Convolution neural network model.
10.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud	Local, Cloud Foundry.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	List the open-source frameworks used	Google Colab,Tensorflow,Fire-Net.
2.	Security Implementations	List all the security / access controls implemented, use of firewalls etc.	e.g. SHA-256, Encryptions, IAM Controls, OWASP etc.
3.	Scalable Architecture	Justify the scalability of architecture	Python,Anaconda
4.	Availability	Justify the availability of application	IBM load balancer
5.	Performance	Design consideration for the performance of the application	We use CDN for fast processing of videos .