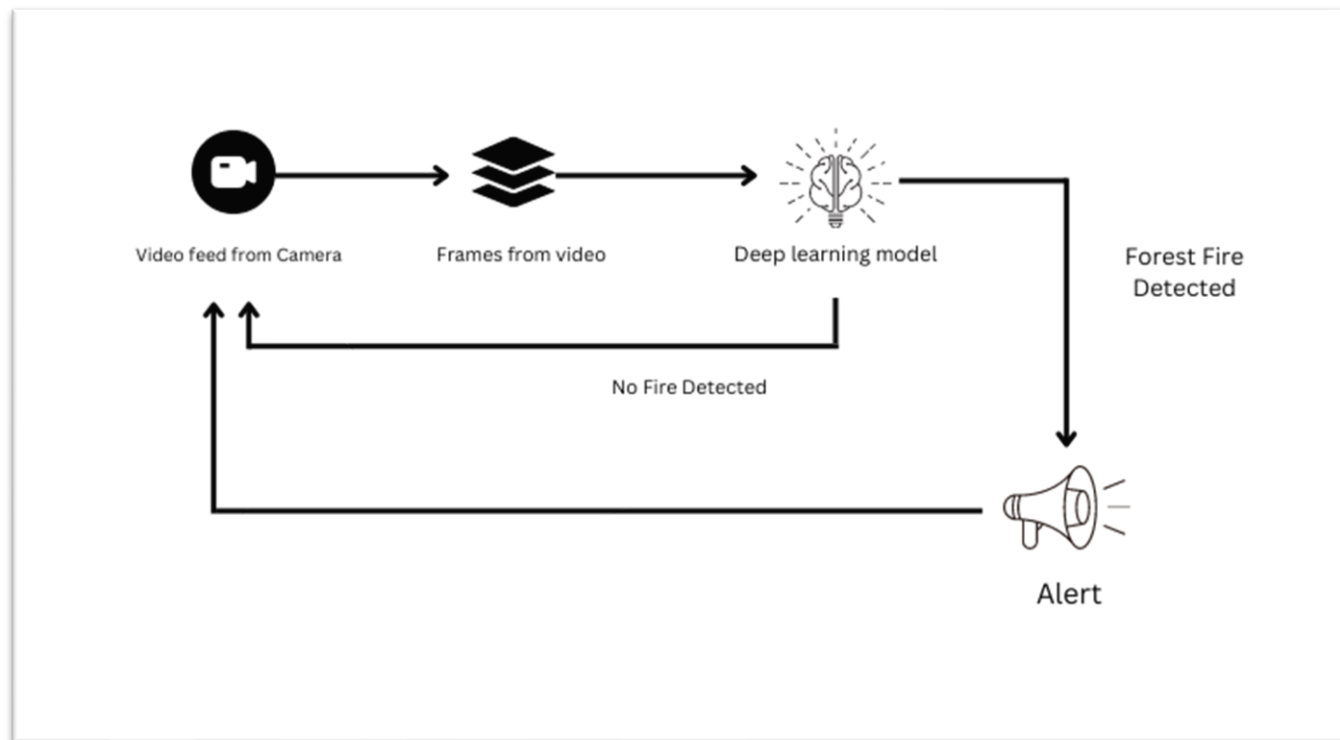


**Project Design Phase-II**  
**Technology Stack (Architecture & Stack)**

Date	14 October 2022
Team ID	PNT2022TMID30303
Project Name	Project – Emerging Methods for Early Detection of Forest Fires
Maximum Marks	4 Marks

**Technical Architecture:**



**Table-1: Components & Technologies:**

S. No	Component	Description	Technology
1.	User Interface	Website or Web app	HTML, CSS, JavaScript / React Js.
2.	Application Logic-1	Model building and training	Python
3.	Application Logic-2	Getting image or video data from user from prediction	IBM Watson STT service
4.	Application Logic-3	Fetch the relevant data from the database and display them to user	IBM Watson Assistant
5.	Database	Image and video data captured at the forest	MySQL, NoSQL
6.	Cloud Database	Fetch data from database and feed them to model for prediction	IBM DB2, IBM Cloudant etc.
7.	File Storage	Video data, Image data, Login credentials and API keys	IBM Block Storage
8.	External API-1	To get data from the database when user give the video input	IBM Storage API
9.	External API-2	To get the username and password of the specific user	Authentication API
10.	Machine Learning Model	To predict the cause of the forest fire and its exact location	Image Recognition Model
11.	Infrastructure (Server / Cloud)	To deploy application in cloud server	Cloud Foundry

**Table-2: Application Characteristics:**

<b>S. No</b>	<b>Characteristics</b>	<b>Description</b>	<b>Technology</b>
1.	Open-Source Frameworks	Application is built by using flask	WSGI framework (Web Server Gateway Interface)
2.	Security Implementations	For authenticating the user data and protecting the data about causes of fire at the forest in the database	SHA-256 / Encryption / OWASP / IAM Controls
3.	Scalable Architecture	To scale our application in server side by supporting users including web browsers, mobile browsers etc.,	IBM Auto Scaling
4.	Availability	To make application available both online and offline and 24/7 service	IBM Cloud load balancer
5.	Performance	Designing an application which provides accuracy in prediction	IBM instance