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

Date	1 November 2022
Team ID	PNT2022TMID42581
Project Name	Emerging Methods for Early Detection of Forest Fires
Maximum Marks	4 Marks

Technical Architecture:

Title: Emerging Methods for Early Detection of Forest Fire

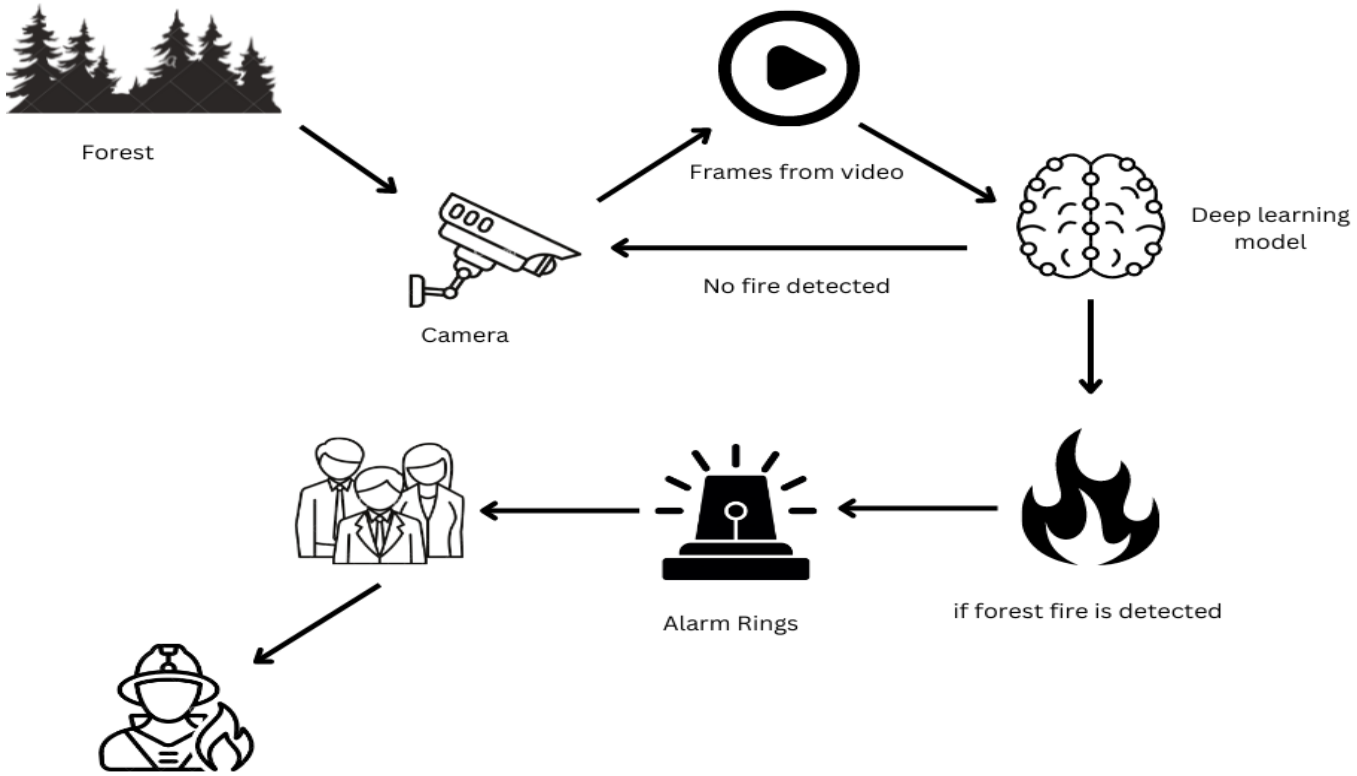

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	User interacts using real time camera	Image processing
2.	Application Logic	Logic for a process in the application	Python
3.	Video Feed	Extract video by the camera	360 degree Surveillance Camera
4.	Image Pre-Processing	To classify millions of feeds which have been extracted	Keras, Numpy
5.	Database	Training and testing dataset	Labelled data from kaggle
6.	Cloud Database	Database Service on Cloud	IBM Cloud Watson
7.	Training & Testing the Model	Training the model continuously to detect the fire occurred	CNN
8.	Infrastructure	Deployment	Local and IBM server

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Python open-source frameworks and library/modules	Technology of Opensource framework
2.	Security Implementations	We are using real time camera for monitoring and detecting the fire	Open CV, Python
3.	Scalable Architecture	Justify the scalability of model	Python, Anaconda IBM DB CNN
4.	Availability	Justify the availability of model	CCTV camera, image/video processing technique - CNN
5.	Performance	The CNN algorithm is used to detect the fire in a high accuracy as early as possible compared to other technologies	CNN – Convolutional Neural Network, Image processing