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

Date	13 October 2022
Team ID	PNT2022TMID32928
Project Name	Project - Emerging Methods for Early Detection of Forest Fires
Maximum Marks	4 Marks

Technical Architecture:

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

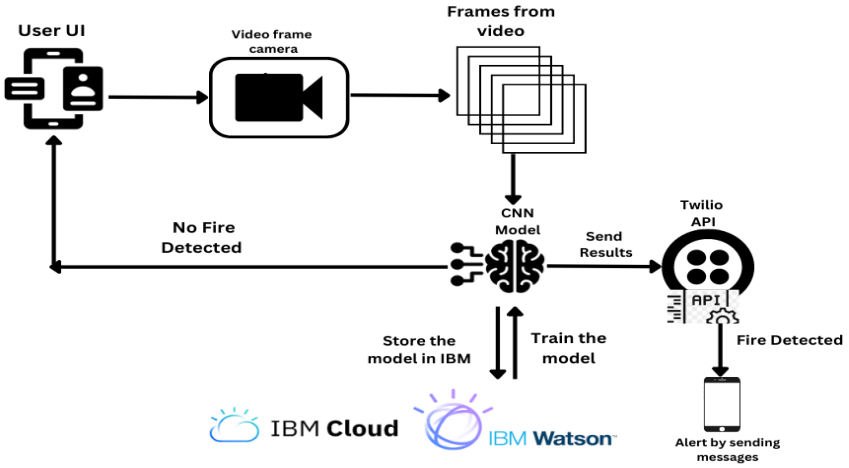

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	The user uses the console to access the interface	HTML, CSS, JavaScript / Angular Js / React Js etc.
2.	Input	Video Feed/Image	Web Camera/Video on a site
3.	Conversion	Video is feeded through model and converted into Frames	IBM Watson service
4.	Feeding the Model	The Frames are sent to the Deep learning model	IBM Watson Assistant
5.	Dataset	Using Test set and train set , train the model	Data set from Cloud Storage , Database Local system
6.	Cloud Database	Database Service on Cloud the model is trained in the cloud more precise with detections more images can be added later on.	IBM Cloudant
7.	File Storage	Cloud / Local system	IBM Block Storage or Other Storage Service or Local Filesystem
8.	Infrastructure (Server / Cloud), API	To run and Build AI models	IBM Watson API
9.	External API	User can send and receive calls and messages for communication	Twilio Services
10.	Neural Network Model	Image and Object Recognition	Convolution Neural network Model
11.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud	Local Server Configuration:OPEN CV ,Anaconda Navigator ,Local. Cloud Server Configuration : IBM Cloudants

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	We can predict a class of the data based on various attribute of the data	Python Flask Open Source framework
2.	Security Implementations	Mandatory Access Control(MAC) and Preventive Security Control is used	e.g. SHA-256, Encryptions, IAM Controls, OWASP etc.
3.	Scalable Architecture	3-tier architecture with High scalability	Web server – HTML ,CSS ,JavaScript Application server – Python , Anaconda Database server –IBM DB2
4.	Availability	To facilitate load balancing, including content-based routing to distribute requests to one or more proxy	IBM load balancer
5.	Performance	Provides site users with faster content load time and speed and data protection to deliver AI insights from IBM Watson	IBM Content Delivery Network