Project Design Phase-II
Technology Architecture & Functional Requirements

Date	03 October 2022
Team ID	PNT2022TMID13815
Project Name	Emerging Methods for Early Detection of Forest Fires
Maximum Marks	4 Marks

Technical Architecture:

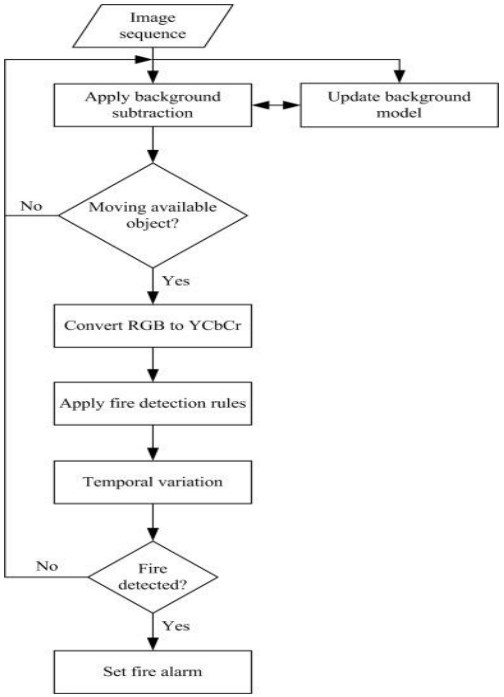

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	Data Collection	Collecting and Analysing the raw Image Data.	Jupyter Notebook / python
2.	Image Preprocessing	Converting and correcting the image to make image quality and resolution high by rotation images in all possible directions and gaining knowledge.	Jupyter Notebook / python
3.	Trainset and Testset Image Data generation	Converting and correcting the image to make image quality and resolution high by rotation images in all possible directions and gaining knowledge for both trainset as well as testset data images.	Jupyter Notebook / python
4.	Model Building	Logic for Model by some Algorithms /Activation Functions.	Jupyter Notebook / python
5.	Saving the Model	Data Type, Configurations etc.	Python.
6.	Predictions	Make prediction of the trained model by checking its accuracy for the predictions.	DeepLearning / python
7.	Video Analysis	File storage requirements	IBM Block Storage or Other Storage Service or Local Filesystem
8.	Twilio Message service	Purpose of External API used in the application	IBM Weather API, etc.
9.	Alert Sound and Message	Sending Alert text message using registered twilio account and produce output sound alert alarm .	Twilio / PlaySound(Python)
10.	IBM Cloud	Create a IBM Cloud account to deploy the CNN model in cloud	Object Recognition Model / Deployment
11.	Train Model on Cloud	Application Deployment on Local System / Cloud Local Server Configuration: Cloud Server Configuration : and to train the deep learning model in IBM Cloud.	Local, IBM Cloud Account

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Jupyter Notebook,Twilio, Anaconda 3	Python
2.	Security Implementations	IBM Cloud	Bash /Python
3.	Scalable Architecture	Scalable for every Situation	Technology used was Java /Python
4.	Availability	Available on every windows versions.	Technology used - Python
5.	Performance	Detection Accuracy of 92%	Python