

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

Date	22 October 2022
Team ID	PNT2022TMID41278
Project Name	Project - Emerging Methods For Early Detection Of Forest Fires
Maximum Marks	4 Marks

Technical Architecture:

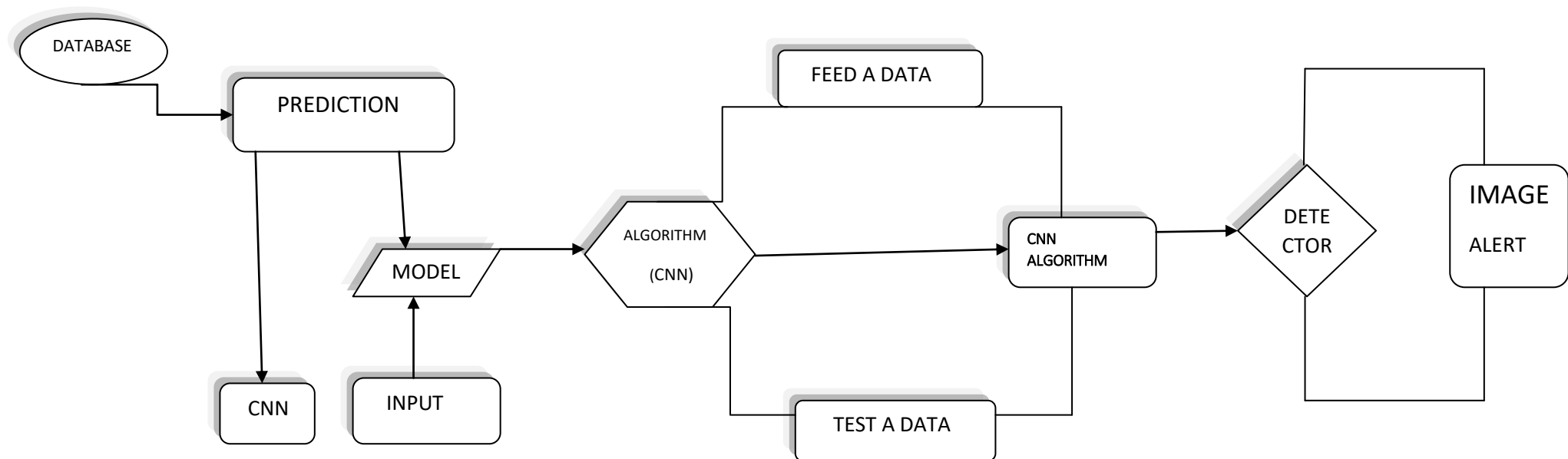


Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	The user interface must be a better support and usage of forest officials	HTML, CSS, JavaScript / Angular Js / python ,React Js etc.
2.	Application Logic-1	So the logic governing is about the detection of pattern of forest fire	Java / Python (cnn)
3.	Application Logic-2	Convention of live streaming videos into frames	IBM OPEN CV
4.	Application Logic-3	Computer program that contains the information (in the form of business rules) that defines or constrains how IT operates .	IBM Watson Assistant

5.	Database	Comparing the obtained frames with pre stored patterns in data base	MySQL, NoSQL, NLP etc.
6.	Cloud Database	Plenty of datasets based on all various types of forest fire pattern must be stored in the cloud.	IBM DB2, IBM Cloudant etc.
7.	File Storage	The datasets are stored in the cloud in the form of database the may be used at UI session.	IBM Block Storage or Other Storage Service or Local Filesystem
8.	External API-1	To build machines & algorithms that will initiate alert system in terms of any forest fire pattern detection on the algorithm or else the entire system must be looped and monitoring progress must be carried out	Natural language programming, etc.
9.	External API-2	Neural networks reflect the behavior of the human brain, allowing computer programs to recognize patterns and solve common problems in the fields of AI, machine learning, and deep learning.	CNN , etc.

10.	Machine Learning Model	Those models are used for the image pre processing purpose.	Xception v3 , Inception,Resnet etc.
11.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: Cloud Server Configuration :	Local, Cloud Foundry, Kubernetes, etc.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Python compiler , Ploting the graphs , image processing etc	Numpy , pandas, seaborn, matplotlib,tensorflow and keras etc
2.	Security Implementations	User interface collecting informations about the user comes under the web development process.	HTM, CSS, JAVAScript,SQLetc
3.	Scalable Architecture	The number datasets stored an be scaled upto an end of the progress , it can be timely updated.	IBM cloud
4.	Availability	To build your own branded live chatbot into any device, application, or channel.	IBM watson
5.	Performance	Neural networks reflect the behavior of the human brain, allowing computer programs to recognize patterns and solve common problems in the fields of AI, machine learning, and deep learning.	Natural language program