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

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|---|---|
| Date | 02 November 2022 |
| Team ID | PNT2022TMID44045 |
| Project Name | Project – Emerging Method for Early Detection of Forest Fire |
| Maximum Marks | 4 Marks |

**Technical Architecture:**

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

**Example: Order processing during pandemics for offline mode**

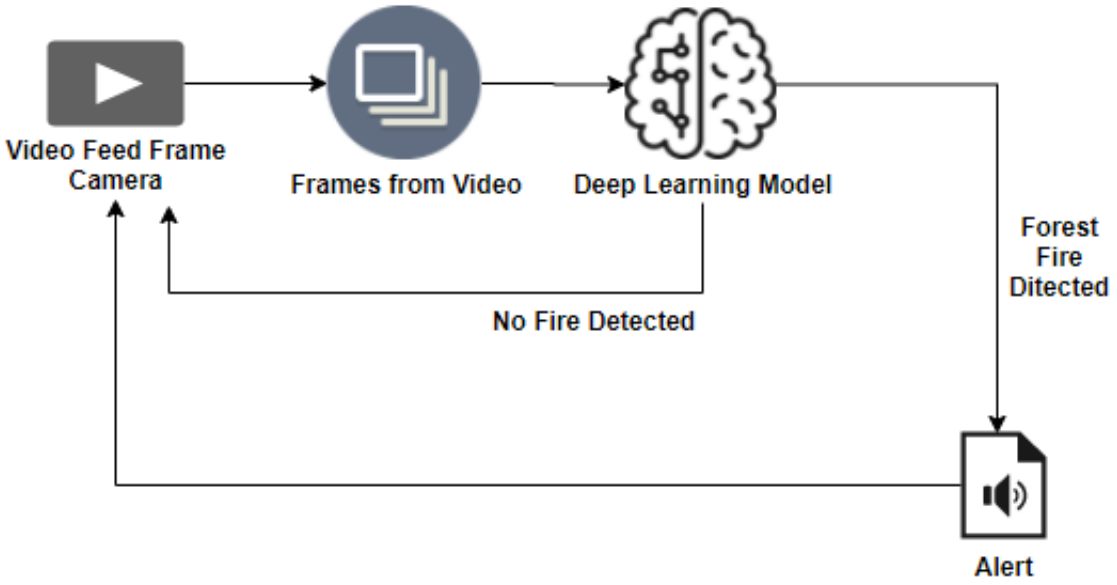

**Table-1 : Components & Technologies:**

| S.No | Component | Description | Technology |
|---|---|---|---|
| 1. | User Interface | How user interacts with application e.g.<br>Web UI, Mobile App, Chatbot etc. | HTML, CSS, JavaScript . |
| 2. | Application Logic-1 | Checking the forest condition in online for 24 hours. | Java / Python |
| 3. | Application Logic-2 | To detect the forest fire with the help of alarm through devices like mobile phone or physical device. | IBM Watson STT service |
| 4. | Application Logic-3 | To show the number of attempts are successfully detected or not( we have to show the detection details if detection is success it will recorded success with green mark, if not it will recorded failure with the red mark. | IBM Watson Assistant |
| 5. | Database | Wireless sensors network, it will store the data for temperature, position, humidity, pressure | MySQL, NoSQL. |
| 6. | Cloud Database | Database Service on Cloud | IBM DB2, |
| 7. | File Storage | We also store the details in File storage. | IBM Block Storage or Other Storage Service or Local Filesystem |
| 8. | External API-1 | Air quality, weather, soil, Co2 | getambee |
| 9. | External API-2 | Active forest fire | getambee |
| 10. | Machine Learning Model | Purpose of Machine Learning Model | Convolutional Neural Network |
| 11. | Infrastructure (Server / Cloud) | Application Deployment on Local System / Cloud<br>Local Server Configuration: Wireless Sensor network<br>Cloud Server Configuration : IoT | Local, Cloud Foundry, Kubernetes, etc. |

**Table-2: Application Characteristics:**

| S.No | Characteristics | Description | Technology |
|---|---|---|---|
| 1. | Open-Source Frameworks | Python flask framework | Technology of Opensource framework |
| 2. | Security Implementations | Mandatory Access Control | e.g. SHA-256, Encryptions, IAM Controls. |
| 3. | Scalable Architecture | Huge number of scalability (3 – tier) | Cloud and Iot services |
| 4. | Availability | Load balancing to distribute traffic across servers | IBM load balancer |
| 5. | Performance | IBM CDN | IBM content delivery network |