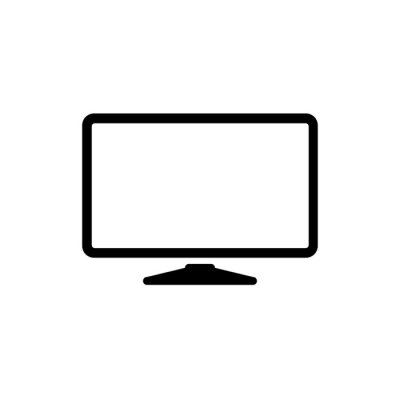
Project Design Phase-II

Technology Stack (Architecture & Stack)

|  |  |
| --- | --- |
| Date | 22 October 2022 |
| Team ID | PNT2022TMID50802 |
| Project Name | Project –Emerging methods for early detection of forest fire |
| Maximum Marks | 4 Marks |

Technical Architecture:

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SENSORS

ALERT

MESSAGE

****

THERMAL CAMERAS

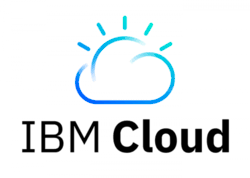


Table-1 : Components & Technologies:

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No** | **Component** | **Description** | **Technology** |
| 1. | User Interface | Using Web UI and Mobile App user can communicate | HTML, CSS, JavaScript etc. |
| 2. | Application Logic-1 | Logic for a process in the application | Python |
| 3. | Camera | Data processing | Thermal Camera |
| 4. | Database | Trained and tested dataset | API |
| 5. | Cloud Database | Database Service on Cloud | IBM DB2, IBM Cloudant etc. |
| 6. | File Storage | File storage requirements | IBM Block Storage or Other Storage Service or Local Filesystem |
| 7. | External API-1 | Purpose of External API used in the application | IBM Weather API, etc. |
| 8. | Machine Learning Model | Purpose of Machine Learning Model | Object Recognition Model, etc. |
| 9. | Infrastructure (Server / Cloud) | Application Deployment on Local System / Cloud Local Server Configuration:  Cloud Server Configuration : | Local,IBM Cloud, Kubernetes, etc. |

Table-2: Application Characteristics:

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No** | **Characteristics** | **Description** | **Technology** |
| 1. | Open-Source Frameworks | The open-source frameworks are libraries from python | Technology of Opensource framework |
| 2. | Security Implementations | To secure our data ,we use the following technologies | SHA-256, Encryption |
| 3. | Scalable Architecture | Deployed WSN should essentially be scalable(adding new sensor nodes and thermal cameras) | CNN(Convolution Neural Networks) |

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No** | **Characteristics** | **Description** | **Technology** |
| 4. | Availability | Server should be available always,so to balance network traffic if any distributed servers are used | **CORBA, .NET Web Services** |
| 5. | Performance | |  | | --- | | with high accuracy compare to other machine / deep learning algorithm The cnn algorithm is detect the fire | | |  | | --- | | CNN(convolutional nueral network),image processing. | |