

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

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| Date | 15 October 2022 |
| Team ID | PNT2022TMID37532 |
| Project Name | Project – EXPLORATORY ANALYSIS OF RAINFALL DATA IN INDIA FOR AGRICULTURE. |
| Maximum Marks | 4 Marks |

Technical Architecture:

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

Technology architecture associates application components from application architecture with technology components representing software and hardware components.

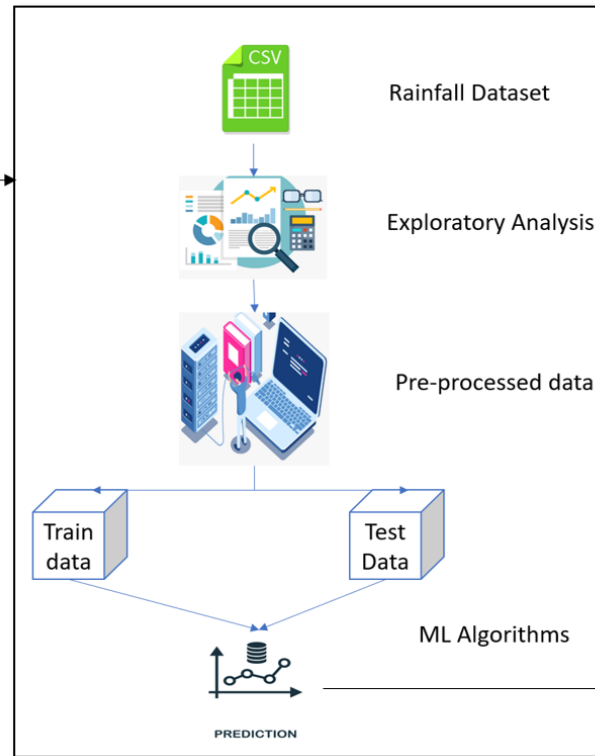
Its components are generally acquired in the marketplace and can be assembled and configured to constitute the enterprise's technological infrastructure.

USER



Rainfall Data

SYSTEM



ADMIN



Web UI



PREDICTION

Prediction and
Forecasting

Table-1 : Components & Technologies:

| S.No | Component | Description | Technology |
|------|---------------------|---|--|
| 1. | User Interface | How user interacts with application e.g. Web UI, Mobile App, Chatbot etc. | HTML, CSS, JavaScript / Angular Js / React Js etc. |
| 2. | Application Logic-1 | Logic for a process in the application | Java / Python |
| 3. | Application Logic-2 | Logic for a process in the application | IBM Watson STT service |
| 4. | Application Logic-3 | Logic for a process in the application | IBM Watson Assistant |
| 5. | Database | Data Type, Configurations etc. | MySQL, NoSQL, etc. |
| 6. | Cloud Database | Database Service on Cloud | IBM DB2, IBM Cloudant etc. |

Table-2: Application Characteristics:

| S.No | Characteristics | Description | Technology |
|------|--------------------------|---|--------------------------------------|
| 1. | Open-Source Frameworks | Backend framework, CSS styling framework, relational database | PyJWT, Flask, IBM cloud DB |
| 2. | Security Implementations | Request authentication using JWT tokens | HS-256, Encryptions , SSL certs |
| 3. | Scalable Architecture | Support for multiple sample prediction using Excel file | Pandas , Numpy |
| 4. | Availability | Availability is increased by distributed servers in cloud VPS | IBM cloud hosting |
| 5. | Performance | The application is expected to handle multiple predictions per second | Load balancers , distributed servers |