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

| Date | 03 October 2022 |
|---|---|
| Team ID | PNT2022TMID53404 |
| Project Name | Estimate the Crop Yield Using Data Analytics |
| Maximum Marks | 4 Marks |

**Technical Architecture:**

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2
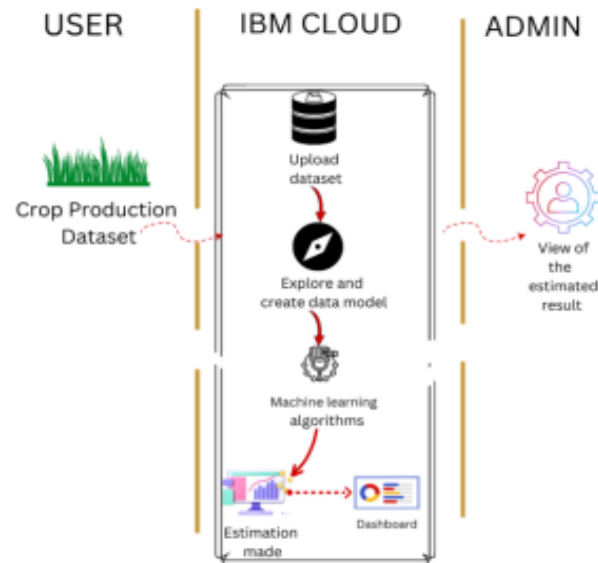
**Table-1 : Components & Technologies:**

| 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 | The data prepared to estimate the Crop Yield | Python |
| 3. | Application Logic-2 | Data prepared to predict the weather during Crop Yield | IBM Watson STT service |
| 4. | Application Logic-3 | Data set used to estimate the sample Crop Production | IBM Watson Assistant |
| 5. | Database | Data analytics platform and to create a database | IBM Assistant, Python |
| 6. | Cloud Database | Database Service on Cloud | IBM DB2, IBM Cloudant etc. |
| 7. | File Storage | Storage of data | IBM Block Storage, Local Filesystem, IBM DB2 |
| 8. | External API-1 | Purpose of External API used in the application | Object Recognition Model, Weather API |
| 9. | External API-2 | The External Data API used to upload external data files to CRM analytics | Tableau CRM external data API |
| 10. | Machine Learning Model | To choose the right crop to the area and climatic condition | IBM Assistant, Python |
| 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 | It empowers the farmers and to increase the productivity there is need to provide the best dissemination tool for their farming activities | Cognos Analytics |
| 2. | Security Implementations | List all the security / access controls implemented, use of firewalls etc. | e.g. SHA-256, Encryptions |
| 3. | Scalable Architecture | The estimate of crop yield is based on soil, meterological, environmental, and crop parameters | Python – Machine Learning |
| 4. | Availability | Both website and mobile application interfae and developed in local language and the content is available in localized languages | Python – Anaconda |
| 5. | Performance | Multiple technologies and services that will improve the usability in agricultural activities | Python and Other languages |