**Project Design Phase-II**

**Technology Stack (Architecture & Stack)**

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| Date | 24 March 2025 |
| Team ID | PNT2025TMID06677 |
| Project Name | **Global Food Production Trends and Analysis A Comprehensive Study from 1961 to 2023 Using Power BI** |
| Maximum Marks | 4 Marks |

**Table 1: Application Components**

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| --- | --- | --- | --- |
| **S.No** | **Component** | **Description** | **Technology** |
| 1 | User Interface | User interfaces like Web UI or Mobile Apps to interact with the Power BI dashboards | HTML, CSS, JavaScript, ReactJS |
| 2 | Application Logic-1 | Data ingestion logic to extract environmental and management data from various sources | Python |
| 3 | Application Logic-2 | Speech-to-text logic for audio input (e.g., voice commands for querying plant growth stages) | IBM Watson STT service |
| 4 | Application Logic-3 | Virtual assistant to answer user queries related to plant growth predictions | IBM Watson Assistant |
| 5 | Database | Stores raw and transformed data, including historical plant growth and environmental factors | MySQL, NoSQL |
| 6 | Cloud Database | Centralized storage of large-scale data for scalability | IBM Cloudant |
| 7 | File Storage | Storage for large environmental datasets and model output | IBM Block Storage or Cloud-based storage |
| 8 | External API-1 | Provides real-time environmental data (e.g., weather conditions) | IBM Weather API |
| 9 | External API-2 | Identity verification for restricted access (if required) | Aadhar API |