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

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| Date | 24 March 2025 |
| Team ID | PNT2025TMID06665 |
| Project Name | **Prediction plant growth stages with environment and management data 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 |