

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

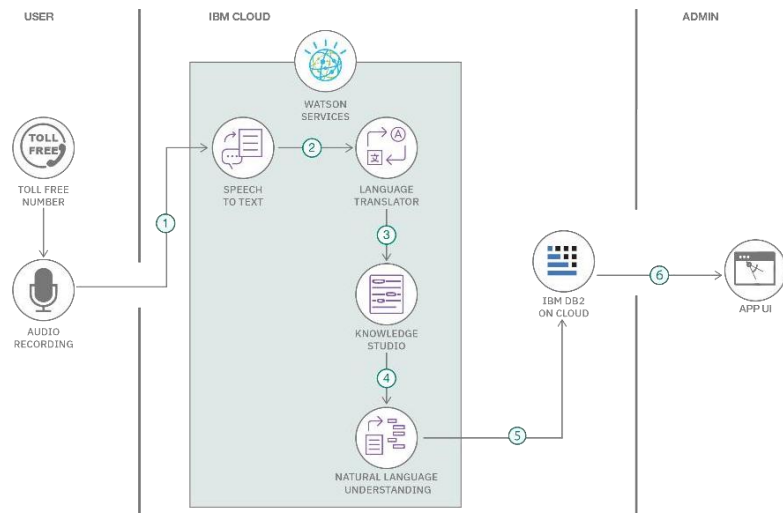
Date	05 November 2022
Team ID	PNT2022TMID29071
Project Name	Estimate the Crop Yield using Data Analytics
Maximum Marks	4 Marks

Technical Architecture:

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

Example: Order processing during pandemics for offline mode

Reference: <https://developer.ibm.com/patterns/ai-powered-backend-system-for-order-processing-during-pandemics/>



Guidelines:

1. Include all the processes (As an application logic / Technology Block)
2. Provide infrastructural demarcation (Local / Cloud)
3. Indicate external interfaces (third party API's etc.)
4. Indicate Data Storage components / services
5. Indicate interface to machine learning models (if applicable)

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Web UI	HTML, CSS, JavaScript / React Js
2.	Application Logic-1	Analyse crop yield pattern, weather pattern and suggest suitable conditions and predict crop yield	Java / Python
3.	Application Logic-2	Cognos Analytics for data cleaning and visualization	IBM Watson Assistant
4.	Database	Data Type, Configurations etc.	MySQL, NoSQL, etc.
5.	Cloud Database	Database Service on Cloud	IBM DB2, IBM Cloudant etc.
6.	File Storage	4GB RAM, Hard disk 1TB (Minimum)	IBM Block Storage or Other Storage Service or Local Filesystem
7.	External API-1	To analyse weather patterns and conditions	IBM Weather API, etc.
8.	Machine Learning Model	To predict crop yield based on given data set	Random forest algorithm, K Nearest Neighbour, etc.
9.	Infrastructure (Cloud)	Application Deployment on Cloud	IBM Cloud.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	List the open-source frameworks used	Node.js, React Js
2.	Security Implementations	List all the security / access controls implemented, use of firewalls etc.	SHA-256, Encryptions
3.	Scalable Architecture	Micro-services	IBM Cloud
4.	Availability	Use of cloud platform	IBM Cloud
5.	Performance	Use a Content Delivery Network (CDN), Use website caching, Reduce the number of plugins	Technology used

