

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

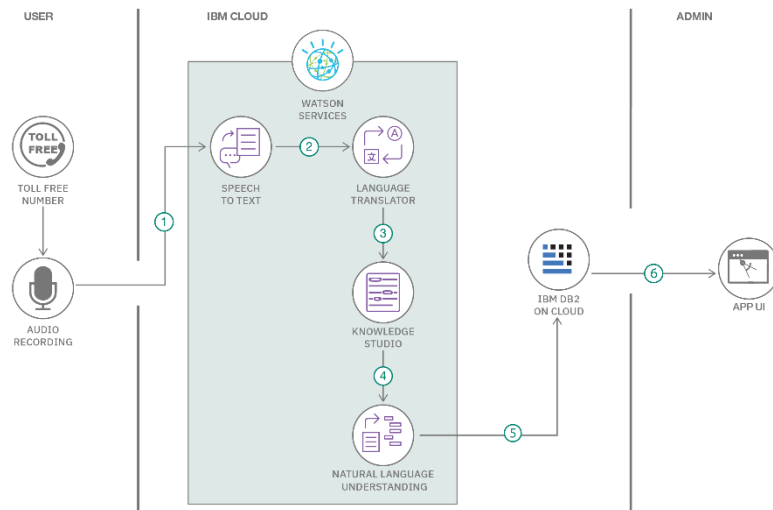
Date	31 January 3035
Team ID	
Project Name	
Maximum Marks	4 Marks

### 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:

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

S.No	Component	Description	Technology
1.	User Interface	Visualization and interaction via dashboards/reports	Power BI, DAX, Power Query
2.	Data Storage	Storing raw and processed data	SQL Server, Azure Data Lake,Excel
3.	Data Processing	Cleaning and transforming data for analysis	Power Query
4.	Environmental Data	Weather soil moisture,temperature, humidity	APIs(Open Weather, IoT Sensors)
5.	Management Data	Fertilization, irrigation, and other farm practices	SQL, CSV Files,APIs
6.	External API-1	Weather and climate data integration	OpenWeather API,NOAA
7.	External API-2	Soil health and moisture data	IoT APIs,Agriculture APIs
8.	Visualization & Reporting	Interactive dashboards for plant growth analysis	Power BI Reports,Dashboards ,AI Insights
9.			
10.			.
11.			

**Table-2: Application Characteristics:**

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	List the open-source frameworks used for data analysis and visualization	Power BI
2.	Security Implementations	List all the security / access controls implemented, including data protection	e.g. SHA-256, Encryptions, IAM Controls, OWASP etc.
3.	Scalable Architecture	Justify the scalability of architecture for handling latge datasets.	Cloud-baseds solutions(Power BI)

S.No	Characteristics	Description	Technology
4.	Availability	Justify the availability of application (e.g. data refresh dashboards)	Power BIO Gateway,Scheduled Data Refresh,Load Balancer.
5.	Performance	Design consideration for the performance of the application (number of requests per sec, use of Cache, use of CDN's) etc.	

#### References:

<https://c4model.com/>

<https://developer.ibm.com/patterns/online-order-processing-system-during-pandemic/>

<https://www.ibm.com/cloud/architecture>

<https://aws.amazon.com/architecture>

<https://medium.com/the-internal-startup/how-to-draw-useful-technical-architecture-diagrams-2d20c9fda90d>