

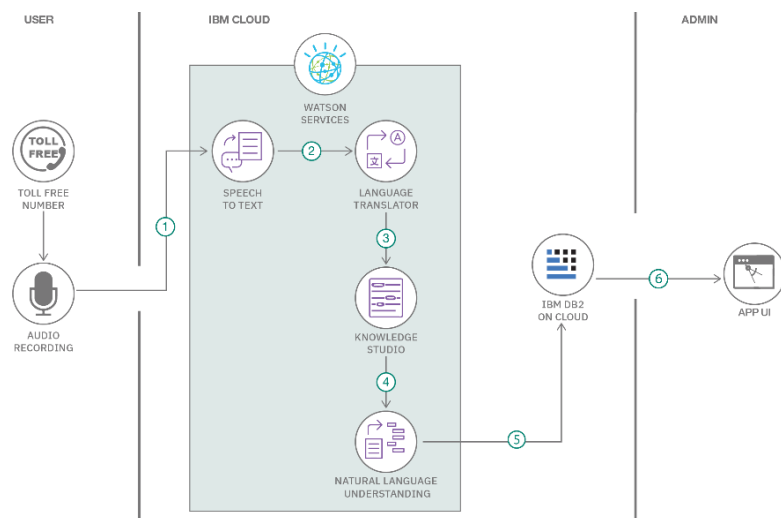
Project Design Phase-II Technology Stack (Architecture & Stack)

Date	09 October 2022
Team ID	PNT2022TMID01231
Project Name	Project - Real-Time Communication System Powered by AI for Specially Abled
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



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	Deaf and dumb people willing to communicate efficiently, without any hassle with others in their surrounding environment	HTML, CSS
2.	Application Logic-1	Logic for a process in the application	Python
3.	Application Logic-2	Logic for a process in the application	IBM Watson STT service
4.	Application Logic-3	Logic for a process in the application	IBM Watson Assistant
5.	Database	Data Type, Configurations etc.	MySQL
6.	Cloud Database	Database Service on Cloud	IBM DB2
7.	File Storage	File storage requirements	IBM Block Storage or Other Storage Service or Local Filesystem
8.	External API-1	Purpose of External API used in the application	IBM Weather API.
9.	External API-2	Purpose of External API used in the application	Aadhar API
10.	Machine Learning Model	ML algorithms like SVM (Support Vector Machine	Object Recognition Model
11.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: Cloud Server Configuration :	Local, Cloud Foundry

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	List the open-source frameworks used	Python flask

S.No	Characteristics	Description	Technology
2.	Security Implementations	List all the security / access controls implemented, use of firewalls etc.	Encryptions
3.	Scalable Architecture	We implement a modular 3-tier client-server application architecture that improves scalability, availability, and performance. Individual tiers are containerized	Presentation layer, Application layer and Data Layer modularity, Docker
4.	Availability	The application has an extremely low downtime and load balancers forward request to other available machines in case of failures	Key performance indicators (KPI)
5.	Performance	The application performs efficiently under a heavy load of translation requests without any significant reduction in the conversion accuracy	Number of requests per minute, accuracy of translation (sign-language to speech & text to sign-language)

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>