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

Date	03 October 2022
Team ID	PNT2022TMID03463
Project Name	AI based discourse for Banking Industry
Maximum Marks	4 Marks

Technical Architecture Steps:

1. The user uses the toll free number to call / chat to raise a query

2. While the user talking over the phone the call is recorded and it is exported to the next step

3. In this step the speech is converted into the text and the text is translated to the natural language understanding using Watson services

4. After the conversion it is stored in the IBM cloud

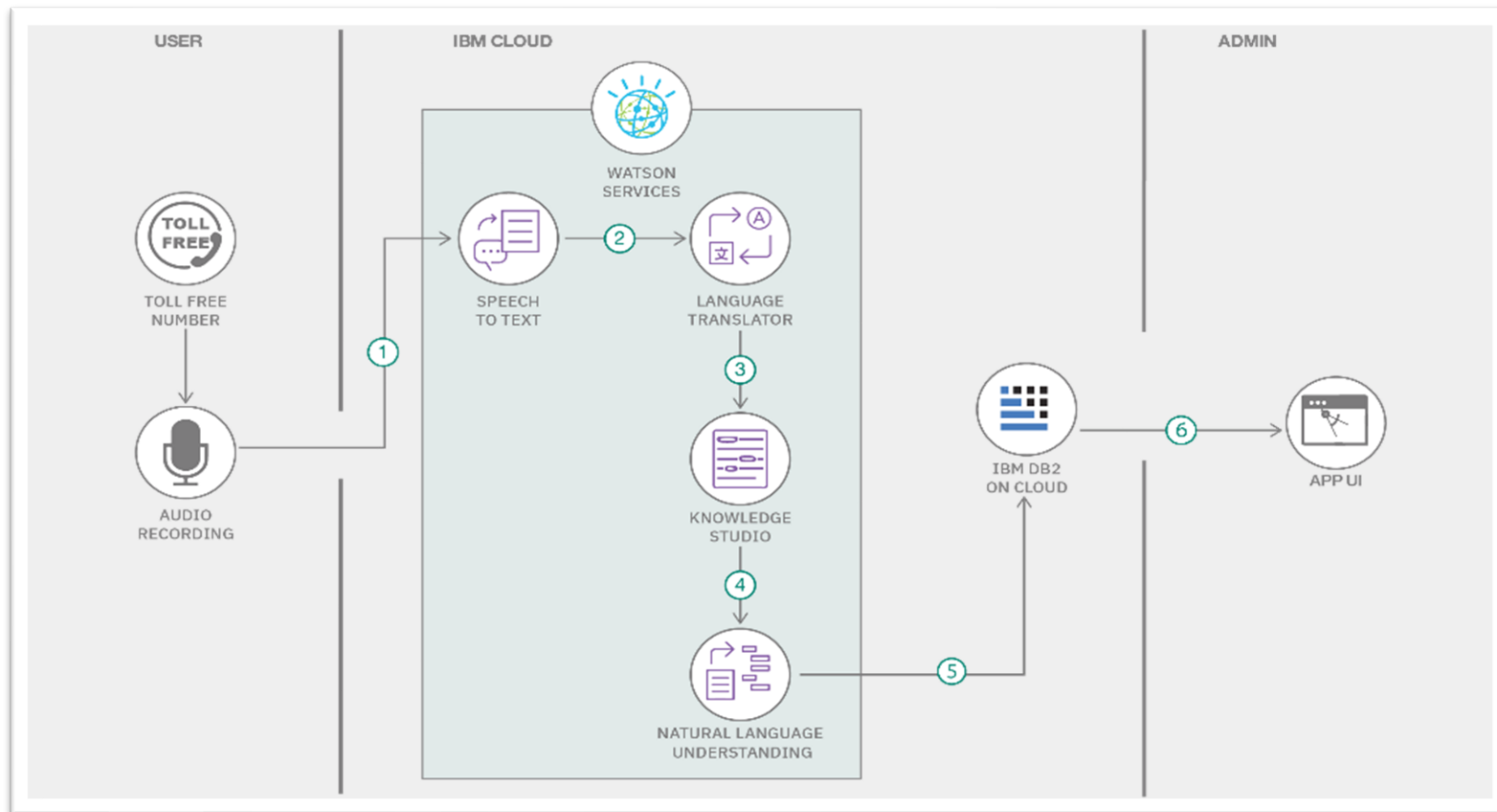5. From IBM cloud it goes to the APP UI

USER

IBM CLOUD

ADMIN

WATSON
SERVICES

TOLL FREE
NUMBER

SPEECH
TO TEXT

LANGUAGE
TRANSLATOR

1

2

3

AUDIO
RECORDING

KNOWLEDGE
STUDIO

IBM DB2
ON CLOUD

APP UI

4

6

5

NATURAL LANGUAGE
UNDERSTANDING

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Chatbot integrated in website or mobile app.	HTML, CSS, JavaScript / Angular Js / React Js etc.
2.	Application Logic-1	User can able to type their queries in chatbox in the site.	Python
3.	Application Logic-2	Regularly asked queries or options are presented to the user in basis of menu	IBM Watson STT service
4.	Application Logic-3	User can raise their query based on the numbers provided in the menu	IBM Watson Assistant
5.	Database	All the basic queries and answers for queries are stored in IBM cloud	MySQL, NoSQL, etc.
6.	Cloud Database	Database Service are saved on IBM Cloud	IBM DB2, IBM Cloudant etc.
7.	File Storage	File storage requirements	IBM Block Storage or Other Storage Service or Local Filesystem
8.	External API-1	It provides an interface between the application and the cloud to send the query from the application to the cloud.	IBM Weather API, etc.
9.	External API-2	A cloud based API that supports several cloud based applications and operations.	Aadhar API, etc.
10.	Machine Learning Model	The regular or basic queries related to banking are trained using the machine learning model	Object Recognition Model, etc.
11.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: Cloud Server Configuration :	Local, Cloud Foundry, Kubernetes, etc.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	List the open-source frameworks used	Technology of Opensource framework
2.	Security Implementations	List all the security / access controls implemented, use of firewalls etc.	e.g. SHA-256, Encryptions, IAM Controls, OWASP etc.
3.	Scalable Architecture	Justify the scalability of architecture (3 – tier, Micro-services)	Technology used
4.	Availability	The chatbot is available 24/7 on almost all devices that support an internet browser as it is an automated AI chat bot	Technology used
5.	Performance	Design consideration for the performance of the application (number of requests per sec, use of Cache, use of CDN's) etc.	Technology used