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

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PROJECT TITLE	**AI BASED DISCOURSE FOR BANKING**
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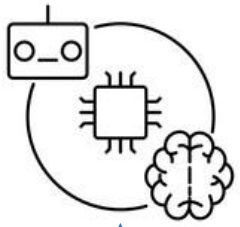
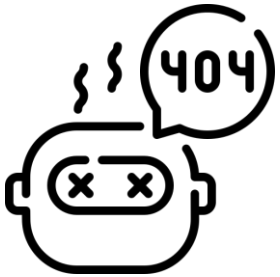
Technical Architecture Steps:

1. User Queries to the Chat Bot
2. Bot previews the queries
3. Query is transferred to Watson Assistant
4. Natural Processing Language is used to understand the query
5. Watson Assistant sends the query
6. Watson Assistant to finds the relevant response from cloud database
7. Queries and responses (Sent and Received) is stored in cloud database
8. All queries and related information is sent to the bank for improvement

Watson Natural
Language Understanding

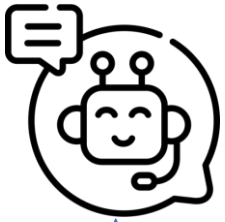


Watson
Assistant



Cloud DB

Bot - Preview

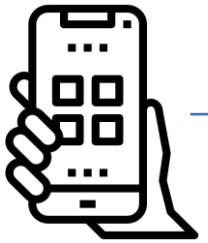


Watson
Discovery

USER

EXTERNAL

User



Application

CLOUD

Bank Services

Table – 1 : Components & Technologies :

S.NO	COMPONENTS	DESCRIPTION	TECHNOLOGY
1.	BOT Preview	A simple page is presented to the user with a chat layout that has an input box field available to get user queries and present options are presented for the user to select.	HTML, CSS, JavaScript
2.	Application Logic - 1	An input bar is provided that enables the user to type queries.	Java / Python
3.	Application Logic - 2	Regularly asked queries or options are presented to the user.	IBM Watson STT service
4.	Application Logic - 3	Processes responses to custom queries and displays a relevant response.	IBM Watson Assistant
5.	Cloud Database	Queries and answers to queries are stored in the cloud and are accessed whenever a query is asked.	IBM Cloudant DB
6.	External API - 1	It provides an interface between the application and the cloud to send the query from the application to the cloud.	Watson Assistant v2 API
7.	External API - 2	A cloud based API that supports several cloud based applications and operations	IBM Cloud API
8.	Deep Learning Model	It is trained with several queries and uses that knowledge to provide relevant responses to queries with a good enough accuracy.	Deep Learning
9.	Infrastructure (Server/ Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: Flask Application Cloud Server Configuration: IBM Cloud	Python Flask, IBM Cloud

Table – 2 : Application Characteristics :

S.NO	CHARACTERISTICS	DESCRIPTION	TECHNOLOGY
1.	Open-Source Frameworks	List the open-source frameworks used	Python Flask, CSS Frameworks
2.	Security Implementations	General access control and the built-in security features of IBM Cloud are present.	IBM Watson Assistant, IBM Cloudant DB
3.	Scalable Architecture	The architecture consists of three tiers, the client side, the web server and the cloud server. Each of these can be scaled as per requirements.	Client Side: Flask (Python) Web Server: IBM Watson Assistant Cloud Server: IBM Cloud
4.	Availability	The chatbot is available 24/7 on almost all devices that support an internet browser.	IBM Cloud, Flask (Python)
5.	Performance	Responds to several thousands of queries at the same time.	IBM Load Balancer, IBM Cloud