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

Date	29 October 2022
Team ID	PNT2022TMID04164
Project Name	Project - AI based discourse for Banking Industry
Maximum Marks	4 Marks

TECHNOLOGY ARCHITECTURE

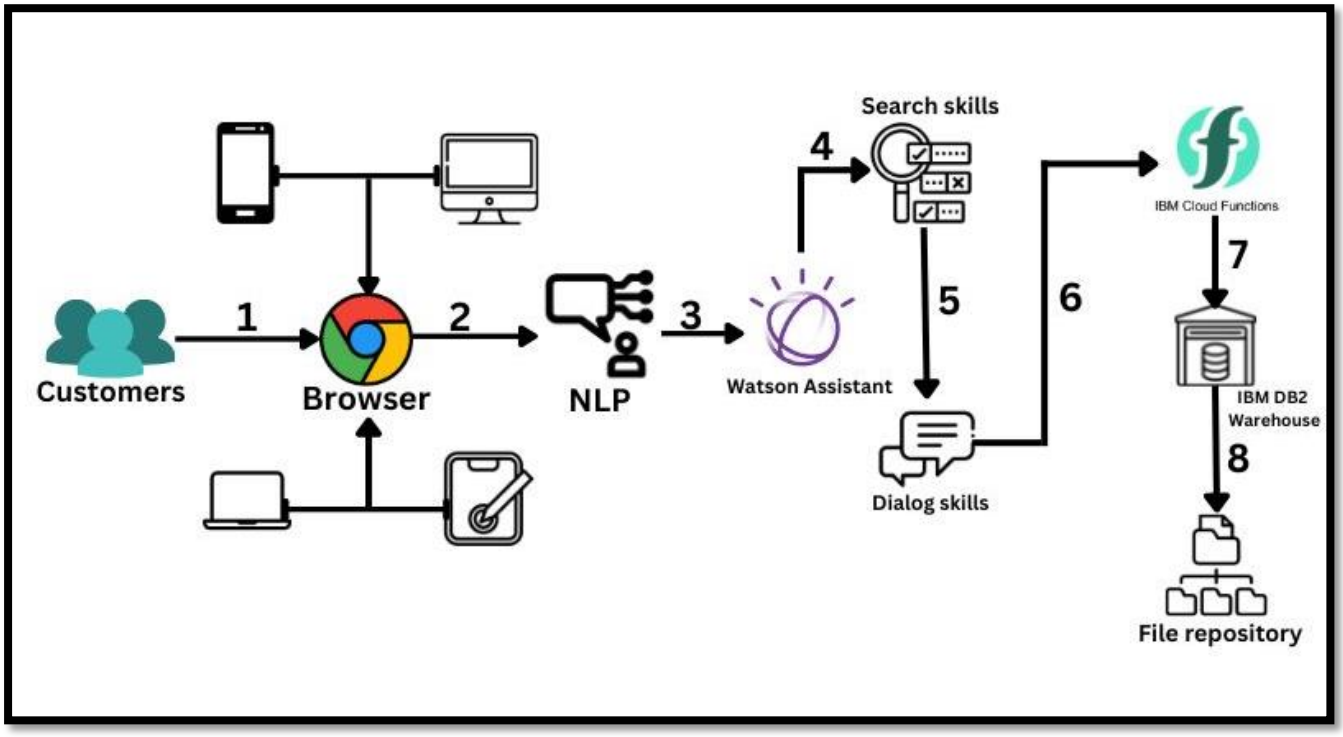

Table-1: Components & Technologies

S.no	Component	Description	Technology
1	User Interface	A Customer interacts with the application in the bank website.	Python, HTML5, CSS, JavaScript / Angular Js / React Js etc.
2	Application Logic-1	Customer's message and query analysing.	Natural Language Processing , Natural Language Understanding
3	Application Logic-2	Identifying intents and entities.	IBM Watson Assistant
4	Application Logic-3 Application Logic-4	Building and training the models. Deployment	IBM Watson Studio Python Flask
5	Database	Data Type Dialog, Intent etc. The customer's query statistics and trained model data are stored and configured.	MySQL, NOSQL
6	Cloud Database	Database Service on Cloud.	IBM DB2, IBM Cloudnet etc.
7	File Storage	The datasets are saved.	IBM Block Storage or Other Storage Service or Local Files stem
8	External API-1	Begin the conversation. Implement language and advanced text analytics into chatbot.	IBM Watson Assistant API
9	External API-2	Banking API -Data transfer between two systems and data accessibility.	Banking API
10	Machine Learning Model	Models of deep learning for intent detection and other tasks.	Object Recognition Model

11	Infrastructure (Server/Cloud)	Publishing the software application on the local systems.	Python Flask, Cloud Foundry, Kubernetes,

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1	Open-Source Frameworks	Open source model is used as a decentralized software development to support open collaboration.	Python Flask
2	Security Implementations	Isolation of customer data, End-to-end encryption of data, Vulnerability scanning and intrusion detection, Antivirus and anti-malware protection, Security for user devices, Application of securit atches.	SHA-256 Encryptions, IAM Controls, IBM Watson Assistant
3	Scalable Architecture	Intents, entities, data flow, scripts (3 tier architecture-presentation tier, application tier, data tier and Microservices architecture).	IBM Watson Assistant
4	Availability	The Bot is made available using load balancers, IBM Watson distributed servers.	IBM Watson Assistant
5	Performance	IBM Watson-automate processes, The deep learning model is trained	IBM Watson Assistant

		using IBM Watson Assistant studio for better performance.	