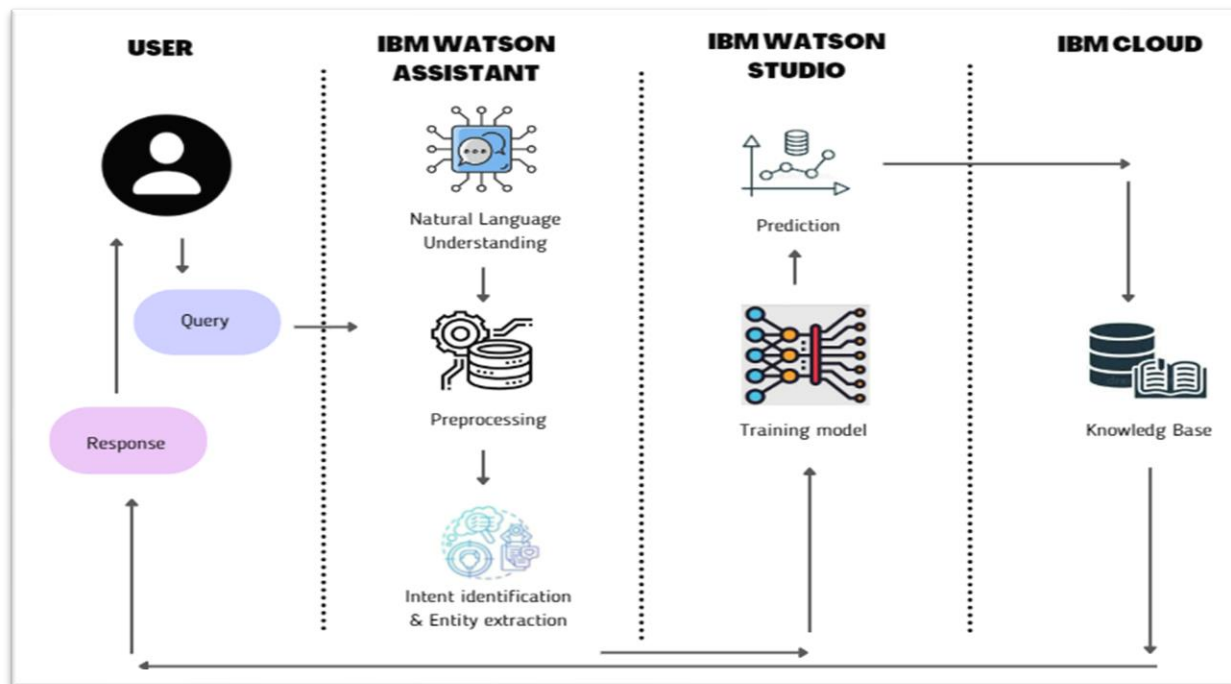


PROJECT DESIGN PHASE-II

TECHNOLOGY STACK (ARCHITECTURE & STACK)

Date	14 October 2022
Team ID	PNT2022TMID23608
Project Name	Project – AI BASED DISCOURSE FOR BANKING INDUSTRY
Maximum Marks	4 Marks

Technical Architecture:



Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Chatbot	HTML, CSS, JavaScript / Angular Js / React Js etc.
2.	Application Logic-1	Query processing	NLP and NLU
3.	Application Logic-2	Dealing with Dataset	IBM Watson STT service
4.	Application Logic-3	Training and Building Deep Learning Model	IBM Watson Studio
5.	Application Logic-4	Matching intent / Entities	IBM Watson Assistant ,IBM Watson Studio, Knowledge Base/Studio
6.	Application Logic-5	Deployment	Python Flask
7.	Database	Data Type –Dialog, Intent etc. Configurations done using small integration Code snippets such as Javascript , SQL and can also be done using Watson APIs.	MySQL or NoSQL or IBM DB2
8.	Cloud Database	Database Service on Cloud	IBM DB2, IBM Cloudant etc.
9.	File Storage	We store dataset	IBM Block Storage or Other Storage Service or Local Filesystem, IBM cloud, IBM Watson studio
10.	External API-1	To incorporate conversation, language and advanced text analytics into chatbot	IBM Watson Assistant API,v2 runtime API, etc.

11.	External API-2	Banking API –Data transfer between two systems and data accessibility.	Banking API, etc.
12.	Machine Learning Model	Intent detection model and other deep learning models	Object Recognition Model, Intent detection model, IBM Watson studio etc.
13.	Infrastructure (Server / Cloud)	On cloud server we will be deploying the chatbot using flask in the web page	Python Flask etc.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Open-source frameworks used is IBM Watson	Technology of Opensource framework- IBM Watson
2.	Security Implementations	IBM Cloud	Watson assistant has certifications such as ISO,SOC2,US HIPAA, European Union GDPR,PCI DSS. We use security systems such as TCS/SSL,IPSEC ,Third party CAs, HTTPS, Encrypted file systems, Encrypted storage systems, Key management systems, AES -256 bit.
3.	Scalable Architecture	Chatbot architecture consist of four pillars. They are intents, entities ,data flow, scripts (3 – tier architecture –presentation tier, application tier, data tier and Micro-services architecture)	Technology used –IBM Watson Assistant
4.	Availability	The Bot is made available using load balancers, distributed servers etc.	Technology used –IBM Watson Assistant
5.	Performance	IBM Watson –automate processes, The deep learning model is trained using IBM Watson studio for better performance, Cache, CDN's, etc.	Technology used –IBM Watson

