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

Date	03 October 2022
Team ID	593070
Project Name	Project - Image Caption Generation
Maximum Marks	4 Marks

Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2
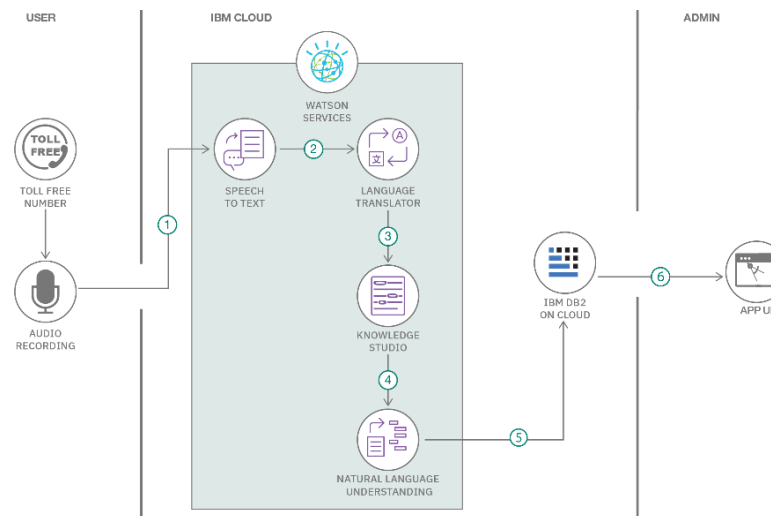
Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	How user interacts with application e.g. Web UI, Mobile App, Chatbot etc.	HTML, CSS, JavaScript
2.	Application Logic-1	Combination of pre-trained CNN and LSTM models to extract features and generate caption	Python
3.	Application Logic-2	Analyze and interpret user-provided data	IBM Watson STT service
4.	Application Logic-3	Flask routes for handling requests, data processing and to return appropriate responses	Flask
5.	Database	Data Type, Configurations etc.	MySQL, NoSQL, etc.
6.	Cloud Database	Database Service on Cloud	IBM DB2, IBM Cloudant
10.	Machine Learning Model	Purpose of Machine Learning Model	CNN, LSTM
11.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration	Local, Cloud Foundry

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	These open-source frameworks used for a dynamic feel	Flask, Bootstrap, Scikit-Learn
2.	Scalable Architecture	Growing demands without compromise on performance	Docker for containerization and consistency across environments
3.	Availability	Ensures high availability through load balancers implementation	Deploying on distributed servers using serverless architecture

S.No	Characteristics	Description	Technology
4.	Performance	Consideration for performance of the application	Caching mechanisms to store frequently accessed data

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