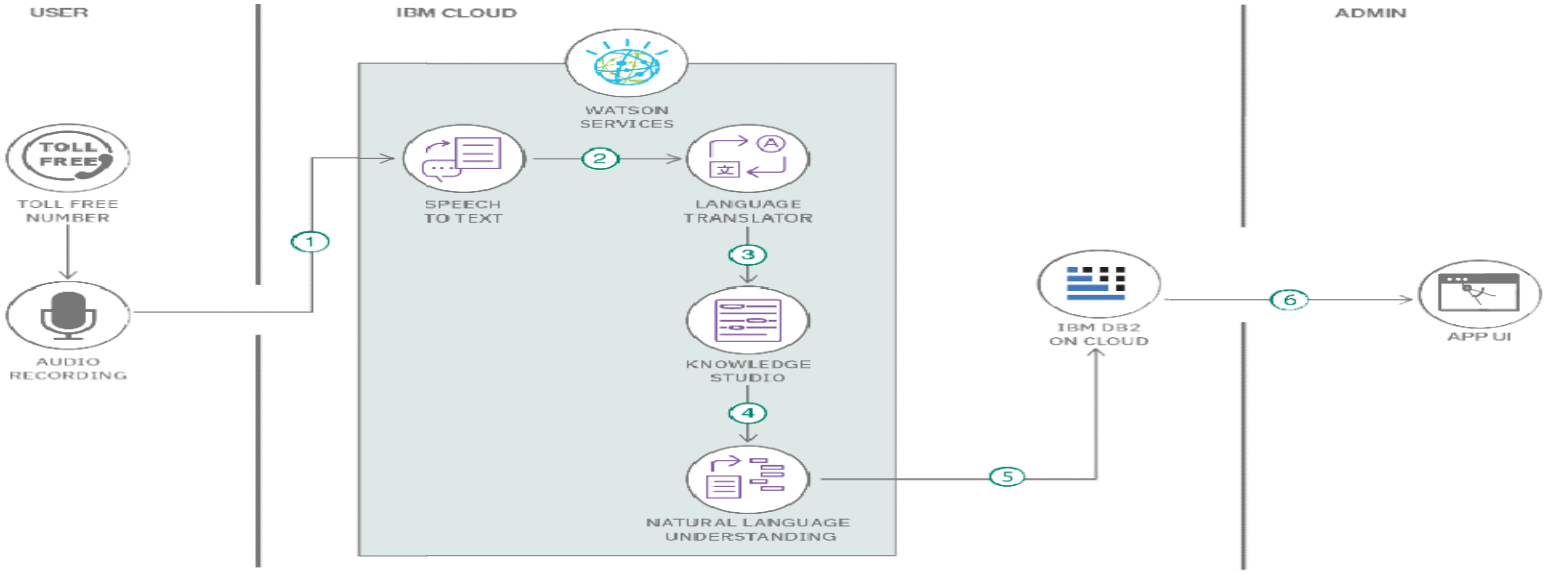
Project Design Phase-II
Technology Stack (Architecture & Stack)

Date	17 October 2022
Team ID	PNT2022TMID30858
Project Name	Car Resale Value Prediction
Maximum Marks	4 Marks

Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2

Example: Order processing during pandemics for offline mode



Reference: https://developer.ibm.com/patterns/ai-powered-backend-system-for-order-processing-during-pandemics/

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	The application interacts with Web UI	HTML, CSS.
2.	Application Logic-1 **Data Pre-processing**	Clean the dataset in order to remove the duplicate values, fill the missing values and replace the German words with English words.	Python
3.	Application Logic-2 **Build Python Flask**	Load the model and initialize Flask app. To fetch the parameter values from the UI, and return the prediction.	Python
4.	Application Logic-3 **Build an HTML Page**	To take the values from the user in a form and upon clicking on the button for submission it has to redirect to URL for **"y_predict"** which returns the predicted resale value	HTML, CSS.
5.	Cloud Database	Database Service on Cloud	IBM Cloudant
6.	File Storage	File storage requirements	IBM Block Storage or Other Storage Service or Local Filesystem
7.	External API-1	External API used in the application	IBM Weather API, etc.
8.	Machine Learning Model	To improve the predictive accuracy and control over-fitting.	Random Forest Regressor Python
9.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: Cloud Server Configuration :	Heroku Platform

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	To establish an connection between the flask and an HTML page.	Python Flask
2.	Security Implementations	To Protect the user information as well as their car details.	SHA-256, Encryptions
3.	Scalable Architecture	The model can be viewed and accessed in both computer as well as mobile phone.	Web UI, Mobile Android app
4.	Availability	The model can be available anywhere at any time.	IBM Cloud
5.	Performance	The model performance has high accuracy and with portable from one machine to another machine.	HTML,CSS

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