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

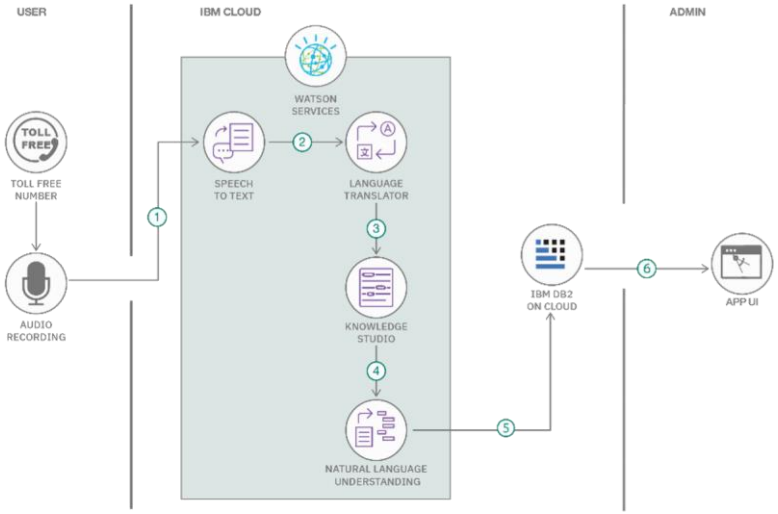
Date	27 October 2023
Team ID	Team-592485
Project Name	Project – Greenclassify: Deep Learning-Based Approach For Vegetable Image Classification
Maximum Marks	4 Marks

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/



Guidelines:

1. Include all the processes (As an application logic / Technology Block)
2. Provide infrastructural demarcation (Local / Cloud)
3. Indicate external interfaces (third party API's etc.)
4. Indicate Data Storage components / services
5. Indicate interface to machine learning models (if applicable)

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Users can upload the image of the vegetable that they need to classify on the website and the model will classify the vegetable	HTML, CSS, JavaScript
2.	Application Logic-1	Deep Learning Model: Responsible for classifying vegetable images.	Python
3.	Application Logic-2	This service allows you to train and deploy custom machine learning models for image classification and object detection	IBM Watson Visual Recognition
4.	Database	Stores labelled image data for training, test and validation.	MySQL, NoSQL, etc.
5.	Machine Learning Model	Using the CNN model for deep learning, which is the best model to train the images and predict the image classification. Its advantages are Feature Learning, Translation Invariance, Hierarchy of Features, Parameter Sharing, Pooling Layers, Convolutional Layers, Parallelization, Robust, and Scalability.	Image classification model using CNN model.
6.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: Initially, the model is deployed in the local server using the local store but once the users increases the model will be shifted to cloud. Cloud Server Configuration : The system is deployed on a cloud infrastructure, allowing easy scalability, load balancing, and redundancy	Local, IBM Cloud Object Storage

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	List the open-source frameworks used	Technology of Opensource framework
2.	Security Implementations	Data security measures include access control, encryption, and regular backups.	Encryptions
3.	Scalable Architecture	Once the user's increases then we need to increase the scalability of the model.	Python
S.No	**Characteristics**	**Description**	**Technology**
4.	Availability	The model will be available on the website and the users can use anytime they need.	Python, HTML, CSS, Javascript
5.	Performance	High performance, low latency	Technology used