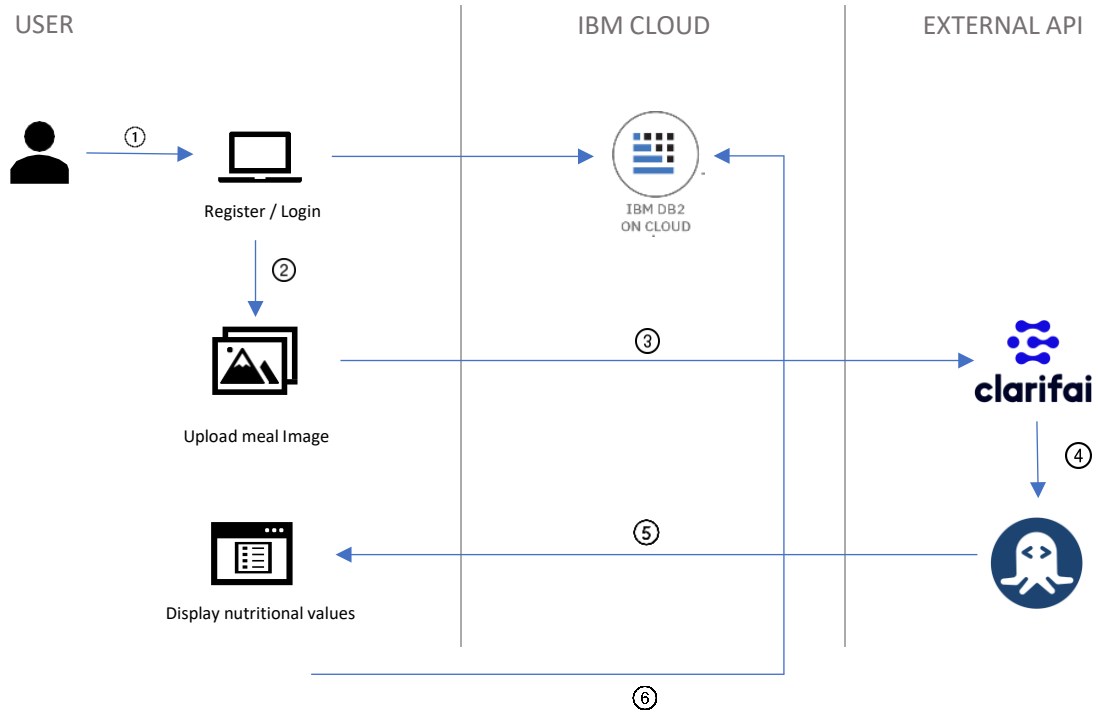
Project Design Phase-II
Technology Stack (Architecture & Stack)

Date	13 October 2022
Team ID	PNT2022TMID00941
Project Name	Project – Nutrition Assistant Application
Maximum Marks	4 Marks

Technical Architecture:



Guidelines:

1. To use the app the user must register / login.
2. After successful registration/login, the user can upload the meal image.
3. Using Clarifai AI- Driven API the name of the meal will be identified.
4. The identified name will be sent to Nutrition API using Flask.
5. Using Nutrition API, the nutritional value of the meal will be obtained and displayed in the UI using Flask.
6. The diet history will be added to the database to track their daily calorie intake.

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	User interacts with application Web UI	HTML, CSS, JavaScript
2.	Application Logic-1	Connection with Database and external API's	Python Flask
3.	Application Logic-2	Integration of chatbot with application	IBM Watson Assistant
4.	Database	Data Type, Configurations etc.	MySQL
5.	Cloud Database	Database Service on Cloud – used to store user details for registration and login, and track diet history	IBM DB2
6.	External API-1	This API is used to find the name of the food, for which the image has been uploaded	Clarifai AI-Driven API
7.	External API-2	This API is used to find the recipe and Nutritional value present inside the food	Nutrition API (Rapid API)
8.	Infrastructure	Application Deployment to provide good performance and scalability	Kubernetes

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Flask is used for connecting database and external API's.	Python flask
2.	Security Implementations	Security is provided for accessing the database.	SSH
3.	Scalable Architecture	Presentation tier: User Interface to login and upload meal image Application tier: Nutrition API, Clarifai API Database tier: IBM cloud DB2	HTML, CSS, JavaScript, Flask, Kubernetes, IBM DB2
4.	Availability	Clustering improves availability. This can be achieved with the help of Kubernetes cluster.	Kubernetes
5.	Performance	By using cache and adding master nodes we can improve performance of the application	Kubernetes