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

Date	26 October 2022
Team ID	PNT2022TMID04910
Project Name	Project - Nutrition Assistant Application
Maximum Marks	4 Marks

Technical Architecture:

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

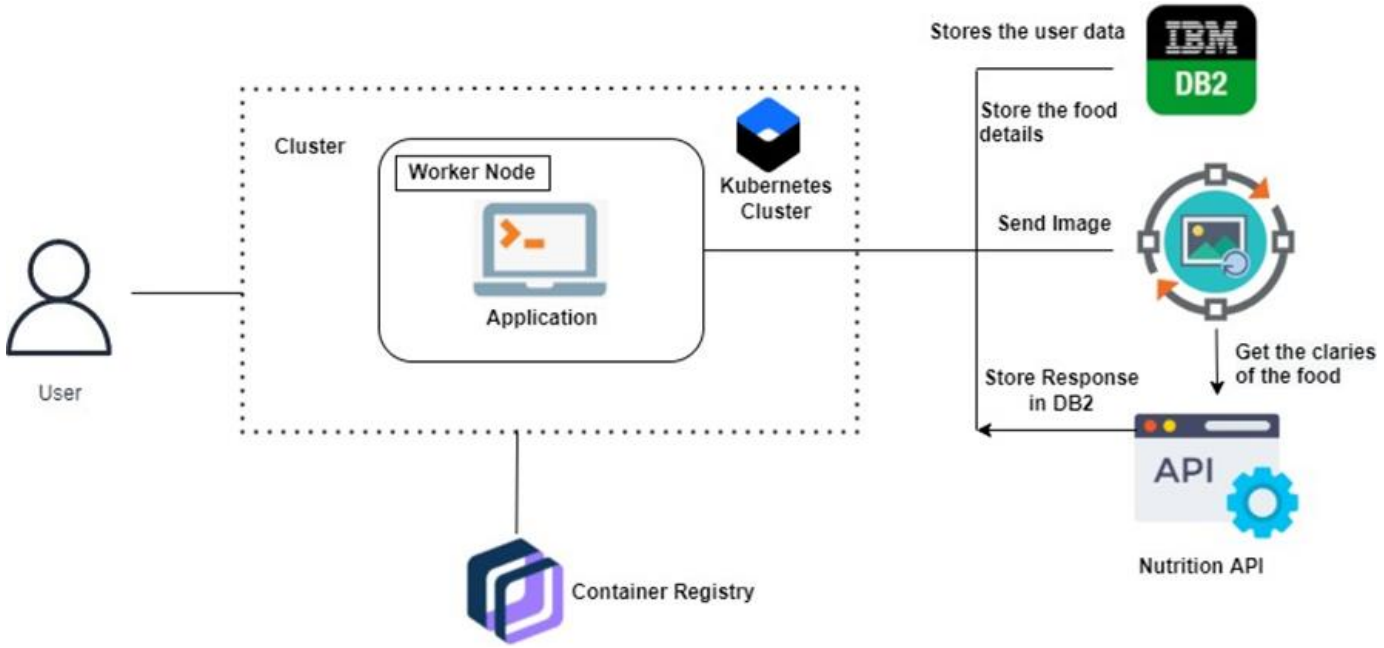

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	The user interacts with Web UI	HTML, CSS, JavaScript
2.	Application Logic-1	Connect with Database and external APIs	Python flask
3.	Application Logic-2	Calculate the BMI value for the user	BMI algorithm
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.	File Storage	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-1	This API is used to find the recipe and Nutritional value present inside the food	Nutrition API
8.	External API-2	Application Deployment to provide good performance and scalability	Kubernetes
9.	Machine Learning Model	To API is used to find connections with the calculation of BMI	Container
10.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: Local IP address Cloud Cloud Server Configuration: Cloud CLI	Local, Cloud Foundry, Kubernetes

Table 2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Usage of the flask to connect database and external API	Python flask
2.	Security Implementations	Provision of secured access to the database	SSH
3.	Scalable Architecture	Presentation tier: User Interface to login and upload food images Application tier: Clarifai API , Nutrition 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 the Kubernetes cluster.	Kubernetes
5.	Performance	By using cache and adding master nodes we can improve the performance of the application	Kubernetes