

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

Date	15 October 2022
Team ID	PNT2022TMID24576
Project Name	AI-powered Nutrition Analyzer for Fitness Enthusiasts
Maximum Marks	4 Marks

Technical Architecture:

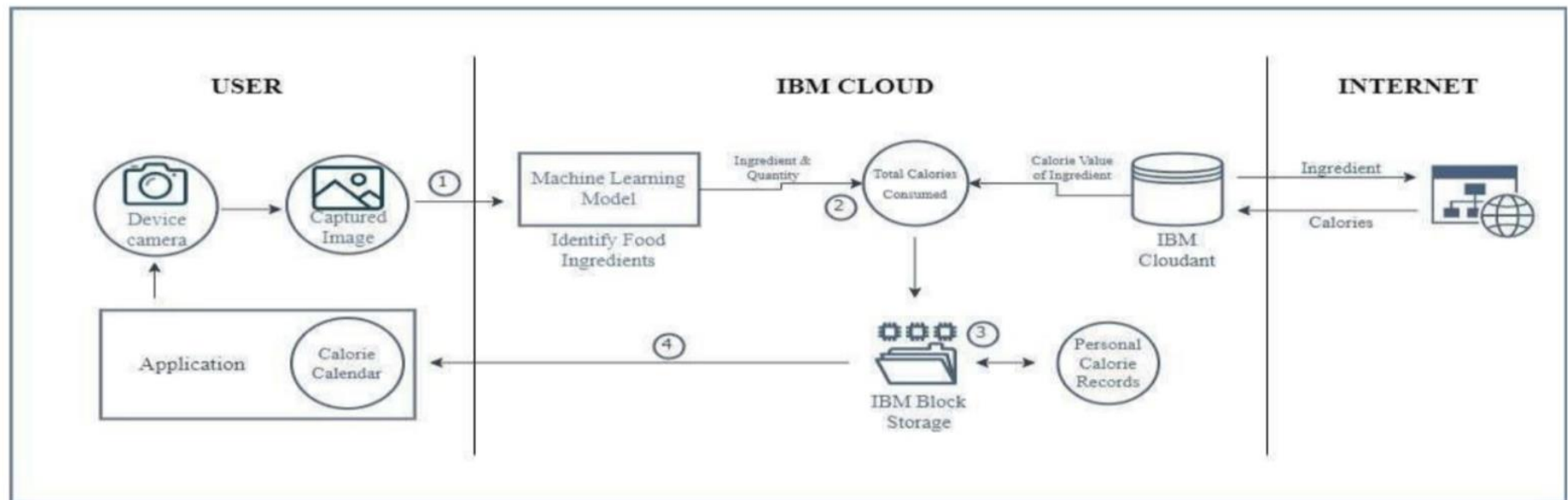


Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	An app that lets users make profiles, upload photos of the components they use in their food, and obtain a personalized nutrition calendar.	HTML, CSS, JavaScript / Flutter
2.	Registration	User registers with the application and verification of user details is carried out.	HTML , CSS ,JavaScript, Python
3.	Image Capture	Users are required to take a photo of the ingredient(s) for which they want to know the detail about	IBM Maximo Image Inspection, Device Camera
4.	Machine Learning Model	The Image is classified, and the label is returned	Machine Learning & Deep Learning, Object Recognition Model to Label Ingredients
5.	Ingredient Detection Model	The ingredient used must be identified from the image class.	Machin Learning And Image processing using python
6.	Calorie Consumption Monitoring	The software monitors the user's daily calorie intake and alerts them when there is an excess intake.	IBM Push Notifications
7.	Database of Ingredients	Data Type, Configurations etc. Ingredient Information and the relevant calories are kept on database.	MySQL, NoSQL, etc.
8.	Cloud Database for Back-up	Database Service on Cloud. Backup copies of the application's data and consolidated reports are also stored.	IBM DB2, IBM Clouding etc.
9.	File Storage	A File system is used to keep track of the products consumed each day as well as the daily caloric intake. Additionally, a customized calorie calendar.	IMB Block Storage
10.	Calorie Value Consolidation	To determine the calorie counts of components that are saved in the database, a web-scraping API is used.	Beautiful Soup
11.	Infrastructure (Server / Cloud)	The program is deployed to the cloud for use. Configuration of the cloud.	Local, Cloud Foundry, etc.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Google Colab , VS code , online Websites	Python, HTML, CSS, Java Script
2.	Security Implementations	Email-based data access authentication and text encryption before file storage	SMTP, Encryption Algorithms
3.	Scalable Architecture	Application are updated, bugs are fixed, and new features are added in response to user experience and input.	Customer feedback, reviews, and Ratings.
4.	Availability	Users should always be able to access the cloud – hosted application, and they shouldn't any problems like application crashes.	IBM Cloud
5.	Performance	The application should be able to process many requests without sacrificing the speed or quality of the results.	Testing – Black, White and Beta Revise application in spiral model