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

Date	16-10-2022
Team ID	PNT2022TMID15853
Project Name	AI-powered Nutrition Analyzer for Fitness Enthusiasts
Maximum Marks	4 Marks

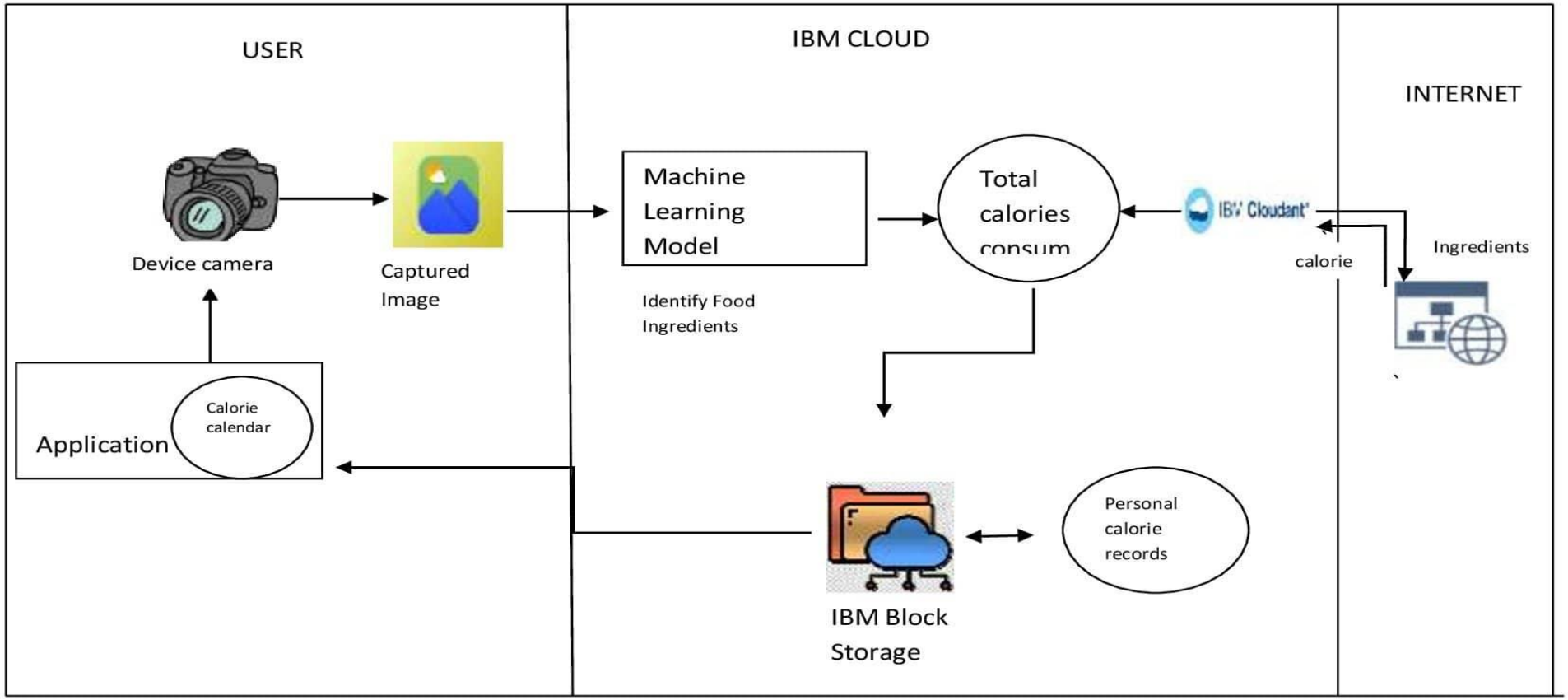

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	An application that allows users to create a profile, take photos of the ingredients they use in their food, and access a personalised nutrition calendar.	HTML, CSS, JavaScript
2.	Image Capture	Users must photograph the ingredients they consume.	IBM Maximo Image Inspection
3.	Ingredient Detection Model	The ingredients must be identified from the captured image.	Machine Learning & Image Processing using Python
4.	Calorie Consumption Monitoring	The application keeps track of the calories consumed by the user throughout the day and alerts the user when there is an over-consumption.	IBM Push Notifications
5.	Database	The data of ingredients and their corresponding caloriesare stored	MySQL
6.	Cloud Database	The application's data is backed up here, and monthly calendars are saved as consolidated reports.	IBM Cloudant
7.	File Storage	A file system is used to keep track of per-day calorie consumption as well as items consumed. This is also used to generate a personal calorie calendar.	IBM Block Storage
8.	Calorie Value Consolidation	web-scraping API is employed to find the calorie values of ingredients which are stored in the database	Beautiful Soup
9.	Machine Learning Model	To identify ingredients, captured images are processed using machine learning models.	Object Recognition Model, etc.
10.	Infrastructure (Server / Cloud)	The application is deployment on cloud for use Cloud Server Configuration	Cloud Foundry

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Google Colab, VS Code, Online Websites	Python, HTML, CSS, JavaScript
2.	Security Implementations	E-mail based authentication for data access and encryption of text before storing in files	SMTP, Encryption Algorithms
3.	Scalable Architecture	Application is revised based on user experience and feedback including updates, bug fixes, and inclusion of new features	Customer feedback, reviews, and ratings
4.	Availability	Users should be able to access the cloud-hosted application at all times and should not experience any issues such as application crashes.	IBM Cloud
5.	Performance	The application should be able to handle a large number of requests while maintaining high quality and speed.	Testing - Black, White, and Beta Revise application in spiral model