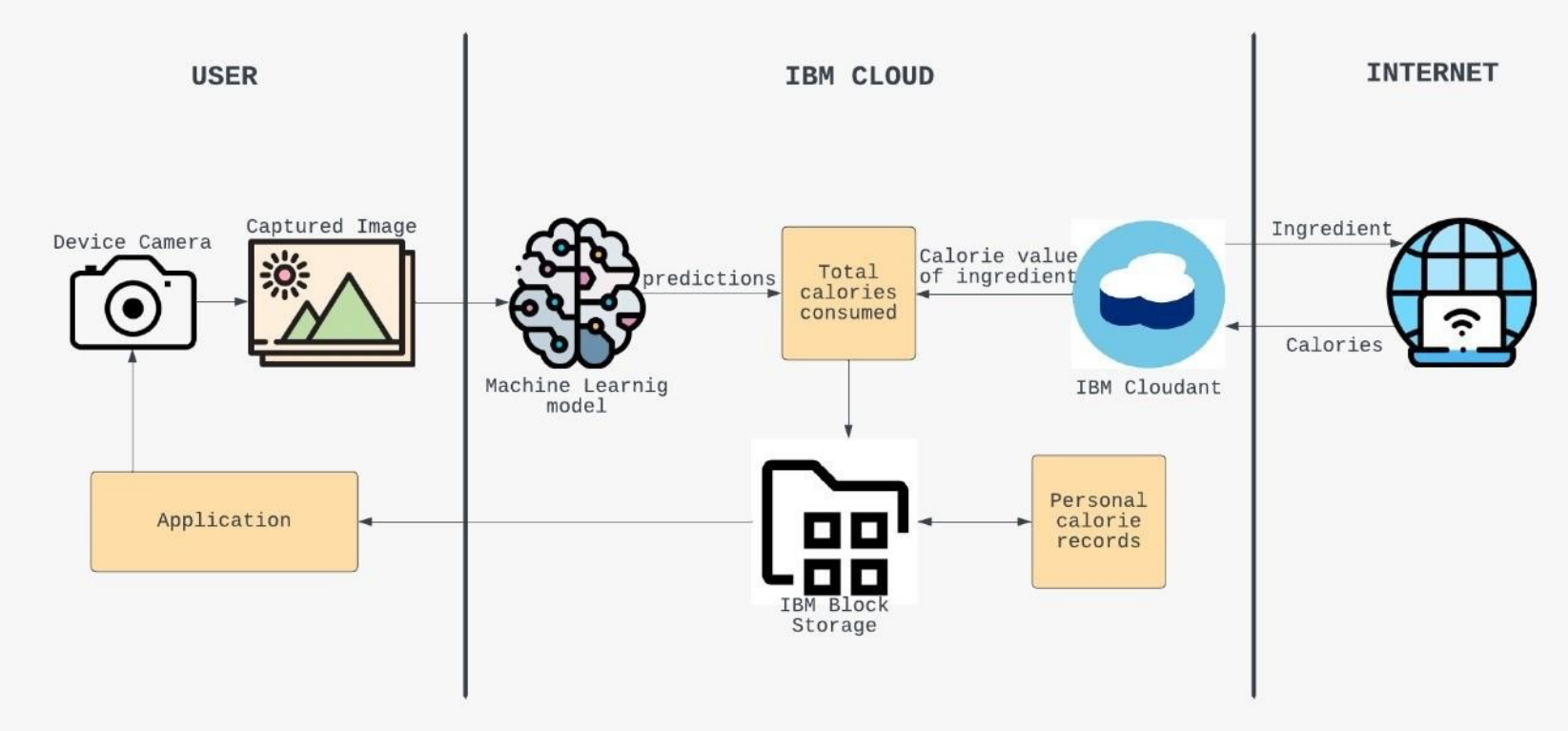
Project Design Phase-II Technology Stack (Architecture &Stack)

Date	25 October 2022
Team ID	PNT2022TMID26372
Project Name	Project - AI-powered Nutrition Analyzer for Fitness Enthusiasts
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


USER
IBM CLOUD
INTERNET
Device Camera
Captured Image
Machine Learnig model
predictions
Total calories consumed
Calorie value of ingredient
IBM Cloudant
Ingredient
Calories
Application
IBM Block Storage
Personal calorie records

Guidelines:

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

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	How user interacts with application e.g. Web UI, Mobile App, Chatbot etc.	HTML, CSS, JavaScript / Angular Js / React Js etc.
2.	Application Logic-1	Convolution layers are used to process images	Python
3.	Application Logic-2	Developing a size analysis and tech stack for the backend	Python, HTML
4.	Application Logic-3	Analyzing texture and colour based on input	IBM Assistant
5.	Database	Various datasets and configurations	MySQL, NoSQL, etc.

6.	Cloud Database	Database Service on Cloud	IBM DB2, IBM Cloudant, etc.
7.	File Storage	Data Storage On Cloud	IBM Block Storage or Other Storage Service or Local Filesystem
8.	External API-1	Developing a model on IBM and integrating it with a flask application	CNN IBM Deployment
9.	External API-2	A Flask application receives input parameters from an HTML page	Python Flask, HTMl
10.	Deep Learning Model	By using deep learning and artificial intelligence in nutrition analysis, superior performance can be achieved for predicting and demonstrating the feasibility of using these technologies	Image Recognition Model, etc.
11.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: Cloud Server Configuration :	Local, Cloud Foundry, Kubernetes, etc.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Pycharm, Python,Anaconda Navigator, Flask,HTML	Deep Learning
2.	Security Implementations	Strong passwords and two-factor authentication	Encryptions
3.	Scalable Architecture	Provides support for higher workloads without sacrificing performance	Python
4.	Availability	Inputs, for example: datasets	Kaggle

5.	Performance	Adding layers to the convolution network to increase its capacity inputs	Artificial Neural Network