

## Project Design Phase-II

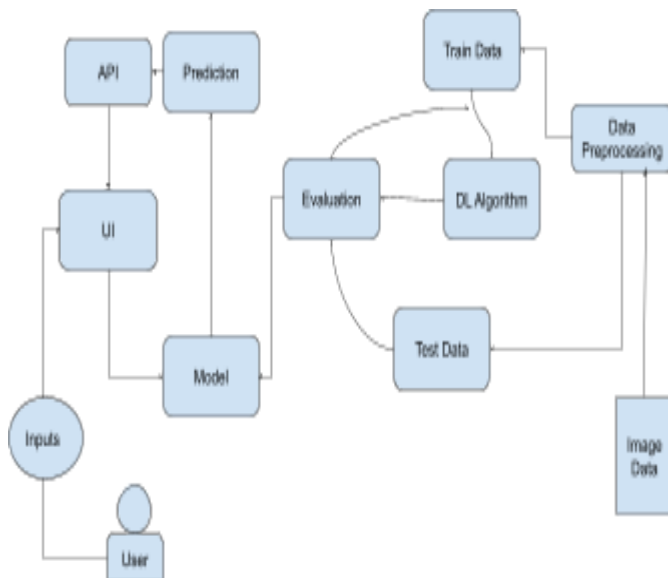
### Technology Stack (Architecture & Stack)

Date	03 October 2022
Team ID	PNT2022TMID53113
Project Name	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



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.	Next JS
2.	Camera Input or file upload	Image taken through camera or uploaded image file is sent to the backend application running on the cloud	Next JS and Fetch API
3.	Pre-processing	Received image is pre-processed by applying various techniques	Flask (Python) on IBM Cloud
4.	Classification	Deep Learning Model classifies image and returns matching label	Flask (Python) on IBM Cloud
5.	Calling API	Returned label from model is sent to external API	Flask (Python) and Requests module
6.	Displaying result	Response from API received in backend and sent to frontend for display in UI	Flask (Python) and Requests module
7.	External API - CalorieNinjas	Extract nutrition data based on the given text	CalorieNinjas API - Rapid API
8.	Deep Learning Model	Model which classifies fruits into one of five predefined classes	Tensorflow

9.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: Cloud Server Configuration :	Local, Cloud Foundry, Kubernetes, etc.
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**Table-2: Application Characteristics:**

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	List of open-source frameworks used	Tensorflow, Keras, Flask (Python), Next JS, Requests module
2.	Security Implementations	No security protocols implemented as there is no sensitive information involved. If accounts feature is added, then account info and passwords will be encrypted.	-
3.	Scalable Architecture	As the application will be deployed on IBM Cloud, it will be able to handle a lot of requests.	Flask
4.	Availability	As the application will be deployed on IBM Cloud, it will have 24/7 availability. If IBM Cloud becomes unavailable, the application can be deployed on IPFS.	IBM Cloud
5.	Performance	The image would be hashed using a hashing algorithm and sent as a string to the backend application which will convert it back into an image	ImageHash or similar library