Project Design Phase-II

Technology Stack (Architecture & Stack)

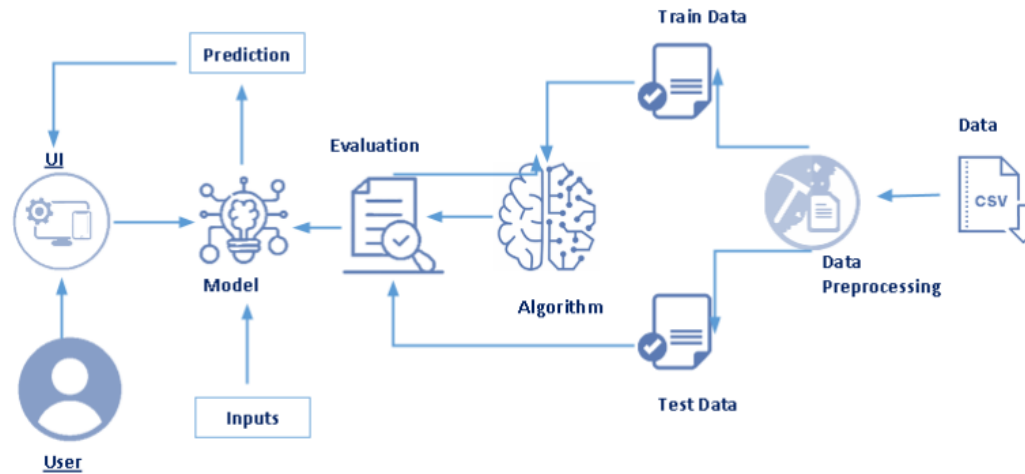| Date	18 October 2022
Team ID	PNT2022TMID13001
Project Name	Project - DemandEst - AI powered Food Demand Forecaster
Maximum Marks	4 Marks

Technical Architecture:

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Web UI	HTML, CSS, JavaScript and Python.
2.	Application Logic-1	Input	GPS, UI
3.	Application Logic-2	Feeding the model	Model
4.	Application Logic-3	Data Preprocessing	Python(numpy and pandas)
5.	Dataset	Using Test set and train set , train the model	Data set from Database
6.	Cloud Database	Database Service on Cloud	IBM DB2, IBM Cloudant
7.	File Storage	File storage requirements	IBM Block Storage or Other Storage Service or Local Filesystem
8.	External API - 1	Purpose of External API used in the application	User authentication
9.	Machine Learning model	Which predicts demand of raw materials	XGBoost
10	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: Cloud Server Configuration :	HTML, CSS, JavaScript, Python, flask

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Python Flask framework.	Technology of Opensource framework
2.	Security Implementations	Mandatory Access Control (MAC) and Preventative Security Control is used	e.g. SHA-256, Encryptions, IAM Controls, OWASP etc.
3.	Scalable Architecture	High scalability with 3-tier architecture	Web server – HTML ,CSS ,JavaScript, Flask Application server – Python Database server –IBM DB2
4.	Availability	Use of load balancing to distribute traffic across servers	IBM load balancer
5.	Performance	Enhance the performance by using IBM CDN	IBM Content Delivery Network