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

Date	26 October 2023
Team ID	Team-592465
Project Name	Project – Online shopper's intentions using machine learning and artificial intelligence
Maximum Marks	4 Marks

Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2

Topic: Online shopper's intentions using machine learning and artificial intelligence
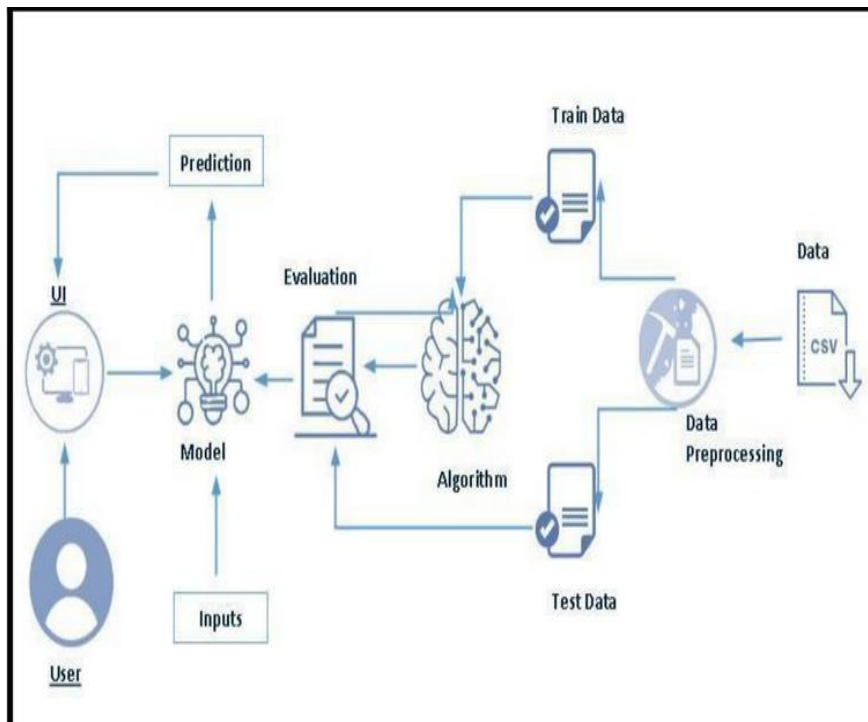
Guidelines:

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

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Front-end interface for user interaction	HTML, CSS, JavaScript, React.js
2.	Application Logic-1	Handles user registration and authentication	Java/Python, Flask,
3.	Application Logic-2	Manages product catalog and recommendations	Python, Django
4.	Application Logic-3	Processes user behavior and intent data	Python, Node.js
5.	Database	Stores user profiles and shopping history	PostgreSQL, MySQL, MongoDB
6.	Cloud Database	Scalable and reliable cloud-based data storage	Amazon RDS, Google Cloud SQL
7.	File Storage	Stores images, user reviews, and multimedia	Amazon S3, Google Cloud Storage
8.	Machine Learning Model	Predicts user intentions and preferences	Python, Scikit-Learn, TensorFlow, PyTorch

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Utilizes open-source frameworks for development	flask, Django, React.js, Node.js
2.	Security Implementations	Implements security measures to protect user data	JWT (JSON Web Tokens), HTTPS, OAuth 2.
3.	Scalable Architecture	Designed for horizontal scalability and growth	Kubernetes, Docker, Load Balancers

S.No	Characteristics	Description	Technology
4.	Availability	Ensures high availability for uninterrupted services	AWS Auto Scaling, Google Cloud Load Balancing
5.	Performance	Designed to provide quick responses and optimal performance.	Caching (Redis), Content Delivery Networks (CDN)

References:

https://c4model.com/

https://developer.ibm.com/patterns/online-order-processing-system-during-pandemic/

https://www.ibm.com/cloud/architecture

https://aws.amazon.com/architecture

https://medium.com/the-internal-startup/how-to-draw-useful-technical-architecture-diagrams-2d20c9fda90d