**Project PLanning Phase**

**Technology Stack (Architecture & Stack)**

| | |
|---|---|
| Date | 08 November 2023 |
| Team ID | Team - 592124 |
| Project Name | Online shoppers Intentions using ML |
| Maximum Marks | 4 Marks |

**Technical Architecture:**

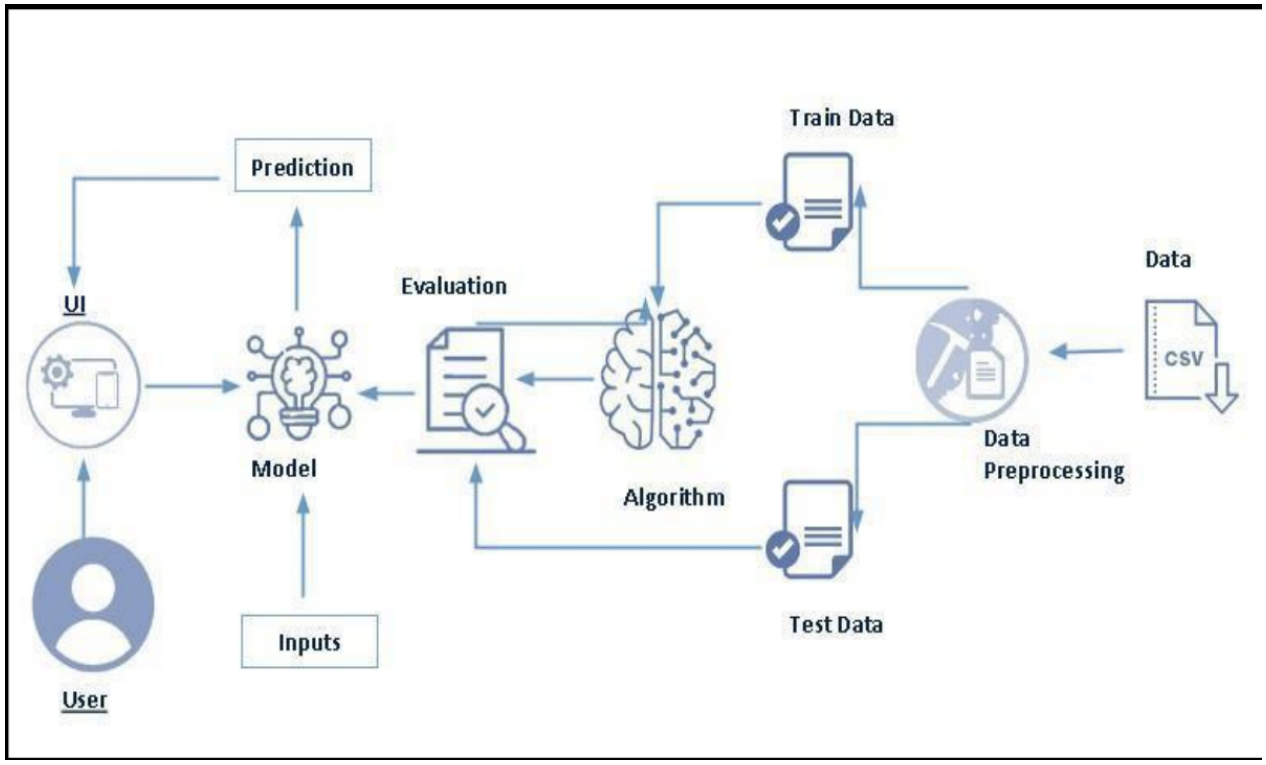

**Table-1 : Components & Technologies:**

| S.No | Component | Description | Technology |
|---|---|---|---|
| 1. | User Interface | Online shopping UI | HTML, CSS, JavaScript |
| 2. | Application Logic-1 | Logic for processing online shopping data | Python |
| 3. | Application Logic-2 | Logic for a process in the application | Clustering Algorithm (e.g., K-Means) |
| 4. | Application Logic-3 | Logic for a process in the application | Classification Algorithms (e.g., Logistic Regression, Random Forest) |
| 5. | Database | Data storage and retrieval | MySQL, NoSQL databases |
| 6. | Cloud Database | Cloud-based database service | IBM DB2, IBM Cloudant or Amazon S3 |
| 7. | File Storage | File storage for application data | IBM Block Storage,Local Filesystem |
| 8. | HTML templates | Web page templates | HTML,CSS |
| 9. | Python (Flask) | Backend server for the web application | Python, Flask framework |
| 10. | Machine Learning Model | Predicting customer behavior | Logistic Regression, Random Forest, K-Means Clustering |
| 11. | Infrastructure (Server / Cloud) | Deployment and hosting | Local System, Cloud-based services (Cloud Foundry, Kubernetes) |

**Table-2: Application Characteristics:**

| S.No | Characteristics | Description | Technology |
|---|---|---|---|
| 1. | Open-Source Frameworks | Utilization of open-source frameworks for development | Pandas, NumPy, Scikit-Learn, Flask |
| 2. | Security Implementations | Implementation of security measures and access controls. | HTTPS,JWT(J-son web tokens) |
| 3. | Scalable Architecture | Architectural choices that support scalability (e.g., 3-tier, microservices) | Three-Tier Architecture,<br>Load Balancing with Nginx or HAProxy. |
| 4. | Availability | Ensuring high availability of the application through redundancy and failover. | Use of Load Balancers,<br>Redundancy and Failover Mechanisms |
| 5. | Performance | Design considerations for optimizing application performance, including caching and CDNs. | Caching Mechanisms (Redis or Memcached)<br>Utilizing a CDN: |