Project Planning Phase
Technology Stack (Architecture & Stack)

Date	01 - November - 2023
Team ID	SI-GuidedProject-591292-1697128137
Project Name	Online Payments Fraud Detection Using ML
Maximum Marks	4 M

Technical Architecture

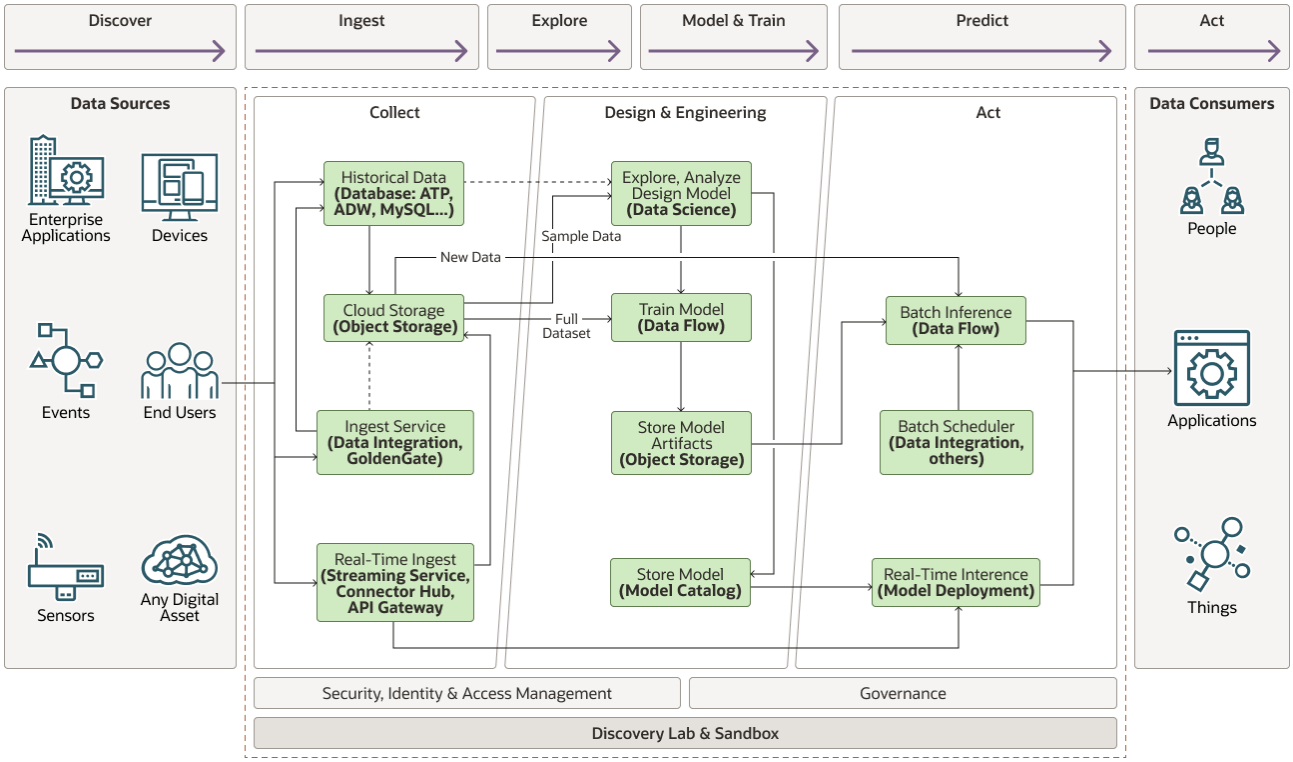

Table 1 : Components & Technologies

S.No	Component	Description	Technology
1	User Interface	Creating a user-friendly and effective user interface (UI) for online payments fraud detection system is crucial for ensuring that users can easily interact with and make sense of the application.	HTML, Flask
2	Application Logic - 1	Application logic manages user interactions, such as input validation, authentication, authorization, and response generation. It determines what actions users are allowed to perform and how they interact with the system.	Python
3	Application Logic - 2	Application logic may maintain the state of the application, including user sessions, context, and data persistence.	Python
4	Database	Database contains Transaction, User information and Logs table. With a range of primary and foreign keys to associate each table with all attributes.	Sql, NO-SQL

5	File Storage	Local System to store all the files required by the model to function properly.	Local System
6	ML Model	The purpose of a machine learning (ML) model is to make predictions or decisions based on data. ML models are designed to automatically learn patterns and relationships within a dataset and use that knowledge to make informed predictions or decisions without being explicitly programmed.	Regression Model

Table 2 : Application Characteristics

S.no	Characteristics	Descriptions	Technology
1	Open-Source Frameworks	open-source machine learning and data science frameworks to streamline your development and model-building process. These frameworks provide a wide range of tools, libraries, and resources to help you work efficiently and effectively.	Python, Pandas, Numpy, XGBoost
2	Security Implementations	When developing an online payments fraud detection system, security is of utmost importance, as you'll be dealing with sensitive financial data.	HTTPS, OAUTH
3	Scalable Architecture	To detect fraud in real-time, our system needs to process transactions rapidly. Scalability ensures low latency and quick response times for real-time decision-making.	Google Cloud, AWS, Flask
4	Availability	Ensuring high availability for your online payments fraud detection application is critical to minimize downtime and maintain a reliable service. Several technologies and practices can be employed to achieve this goal.	AWS Lambda, Google Cloud Autoscaler, GeoDNS
5	Performance	Designing for high performance is crucial for your online payments fraud detection application to handle a large number of requests per second efficiently.	CloudFlare, Query Optimization, Connection Pooling Libraries