Project Design Phase-II
Data Flow Diagram & User Stories

Date	01-11-2023
Team ID	Team-593025
Project Name	Project - Online Payments Fraud Detection Using ML
Maximum Marks	4 Marks

Data Flow Diagrams:

Data Flow Diagram (DFD) for Online Fraud Detection System Using ML

External Entities:

User: Represents the end-users or external entities interacting with the system.

Credit Card Transaction Database: An external source providing transaction data.

Processes:

Data Preprocessing: Cleans, normalizes, and transforms raw transaction data to prepare it for analysis.

Model Training: Involves training machine learning models using preprocessed data.

Model Testing/Evaluation: Evaluates the performance of the trained models using a separate set of test data.

Data Stores:

Preprocessed Data Store: Temporary storage for cleaned and transformed data before model training.

Trained Model Store: Where trained machine learning models are saved for future use.

Data Flows:

Raw Transaction Data Flow: Shows the flow of raw transaction data from external sources to data preprocessing.

Preprocessed Data to Model Training: Represents the path of preprocessed data to train machine learning models.

Test Data to Model Testing: Illustrates how test data is used to evaluate model performance.

Best Model to Deployment: Indicates the path from selecting the best model for deployment.

Data Flow Annotations:

Data: Identifies the type of data being processed, such as raw transaction data or preprocessed data.

Processes: Specifies the tasks or activities being performed, including data preprocessing, model training, and model testing.

Stores: Shows where data is stored, like the preprocessed data store and trained model store.
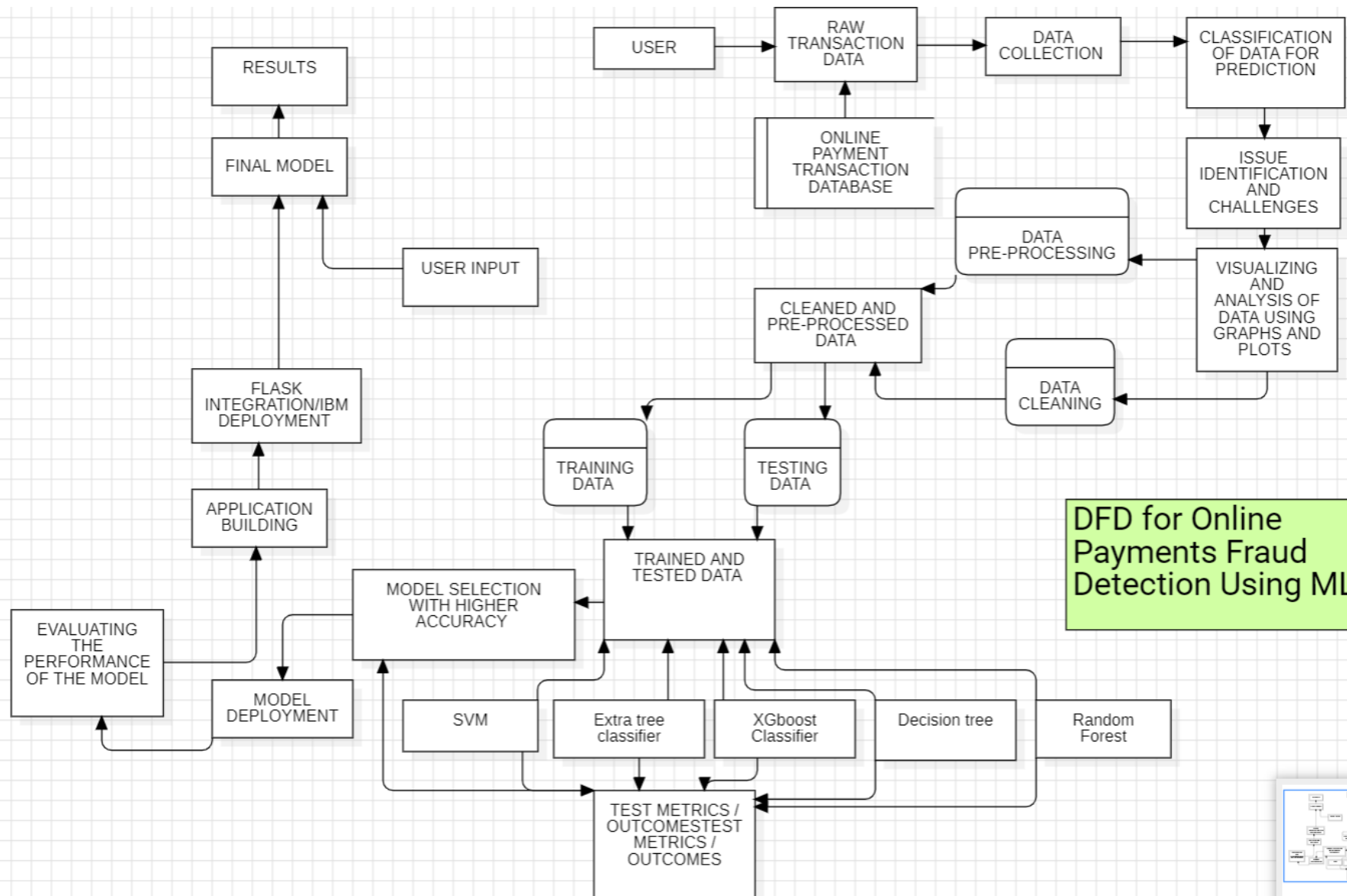
DFD for Online Payments Fraud Detection Using ML
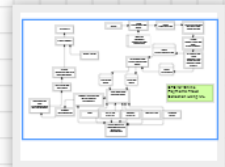
User Stories

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Fraud Analyst	Detecting Fraud Patterns	US001	As a fraud analyst, I want to view a list of potentially fraudulent transactions.	-The system displays a list of transactions flagged as potentially fraudulent. -Transactions are ranked based on their risk score. - I can filter the list by date and transaction type.	High	1.0
End User	Real-time Fraud Alerts	US002	As an end user, I want to receive immediate notifications when suspicious activity is detected on my account.	-The system sends an alert to my registered email or mobile app for unusual transactions. - The alert includes details of the transaction, location, and a recommended action.	High	1.0
System Administrator	User Management	US003	As a system administrator, I want to manage user accounts and their access permissions.	- I can create, update, or delete user accounts. - I can assign specific roles and access rights to each user. - User actions are	High	1.1

					audited for security purposes.		
Fraud Analyst	Custom Rule Configuration	US004	As a fraud analyst, I want to define custom fraud detection rules based on our business requirements.	-I can create custom rules specifying conditions, triggers, and actions. - Rules can be tested before deployment. - Alerts are generated when custom rules are triggered.	High	1.1
End User	Transaction History	US005	As an end user, I want to access my transaction history and review past transactions.	- I can view a list of my recent transactions. - Transactions are categorized and include details like date, merchant, and amount. - The history can be exported for my records.	Medium	1.2
Fraud Analyst	Reporting and Analytics	US006	As a fraud analyst, I want to generate reports and analyze historical data to identify fraud patterns.	- I can create customizable reports with charts and graphs. - Reports can be based on various criteria, such as transaction type or location. - The system provides insights into trends and anomalies.	High	1.2
End User	Secure Account Recovery	US007	As an end user, I want a secure and user-friendly account recovery process in case	- I can reset my password or unlock my account via a	Medium	1.3

			of false positives or account lockout.	secure verification process. - The process guides me through identity verification steps.		
Fraud Analyst	Model Performance Tracking	US008	As a fraud analyst, I want to monitor the performance of machine learning models used in fraud detection.	- I can view model performance metrics (accuracy, precision, recall). - Model performance changes trigger alerts. - Model updates are scheduled based on performance.	High	1.3
System Administrator	Data Retention Policy	US009	As a system administrator, I want to set data retention policies to comply with regulatory requirements.	- I can configure how long transaction data and logs are retained. - Automatic data purging and archiving are implemented based on policies.	Medium	1.4
End User	Multifactor Authentication	US010	As an end user, I want to enable multifactor authentication for added security.	-I can enable two-factor authentication (2FA) for my account. - The system supports authentication through OTPs, biometrics, or authenticator apps.	Medium	1.4