

Project Design Phase-II

Data Flow Diagram & User Stories

Date	
Team ID	LTVIP2026TMIDS40243
Project Name	<i>Online Payment Fraud Detection</i>
Maximum Marks	4 Marks

Data Flow Diagram (DFD):

- A Data Flow Diagram (DFD) represents how transaction data flows through our **Online Payments Fraud Detection System**. It visually explains how user transaction details (such as amount, type, balances) enter the system, how they are processed by the machine learning model, and how the final fraud prediction result is generated.
- In our project, the DFD shows how transaction data is collected from the user interface, passed to the Flask backend, processed by the trained Decision Tree model, and finally classified as “**Fraud**” or “**Not Fraud**.” It also represents how the dataset was used during training and how the saved model file is integrated into the system.
- This structured representation helps in clearly understanding the system architecture, data processing flow, model interaction, and final output generation in a real-time fraud detection environment.

Example: (Simplified) Flow

```

graph LR
    User((User)) --> Flask[Flask App]
    Flask -- "Payment Details" --> Model1[ML Fraud Detection Model]
    Model1 -- "Fraud Result" --> Model2[ML Fraud Detection Model]
  
```

Example: DFD Level 0 (Industry Standard)

```

graph LR
    User((User)) -- "Transaction Details" --> OPFD[2. Online Payment Fraud Detection]
    subgraph OPFD [2. Online Payment Fraud Detection]
        direction TB
        PD[2. Preprocess Data] --> MFD[2.2 ML Fraud Detection Model]
        MFD --> DR[2.3 Display Results]
    end
    OPFD -- "Fraud Result" --> Database[Database]
  
```

Example: DFD Level 0 (Industry Standard)

User Type	Functional Requirement	User Story Number	Acceptance criteria	Priority
Customer (User)	Initiate Transaction	As a customer, I can initiate a transaction by entering payment details	I can see a confirmation message	High Sprint-1
Customer (User)	Complete Fraud Check	As a customer, my transaction is analyzed for fraud using an ML model	Fraudulent transactions are correctly identified	High Sprint-1
Customer (User)	Receive Notification	As a customer, I receive a fraud alert notification if my transaction is flagged as suspicious	I receive an SMS or email alert	High Sprint-1
Customer (Web)	View Transaction History	As a customer, I can view my past transactions in the app	I can check my payment history in one place	Medium Sprint-2

User Stories

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Priority	Release
Customer (User)	Initiate Transaction	USN-1	As a customer, I can initiate a transaction by entering payment details	High	Sprint-1
Customer (User)	Complete Fraud Check	USN-2	As a customer, my transaction is analyzed for fraud using an ML model	High	Sprint-1
Customer (User)	Receive Notification	USN-3	As a customer, I receive a fraud alert notification if my transaction is flagged as suspicious	High	Sprint-1
Customer (Web)	View Transaction History	USN-4	I receive an SMS or email alert	High	Sprint-1
Customer (Web)	View Transaction History	USN-2	I can check my payment history in one place	Medium	Sprint-2