

WEEK 1 DOCUMENTATION

Project Name: SentinelStream – Project Overview & Requirements

Project Overview

SentinelStream is a real-time fraud detection system designed to analyze financial transactions and identify suspicious activity instantly. It acts as an intermediary between the payment gateway and the bank's internal systems. The system validates transactions, predicts fraud risk using machine learning, and stores results securely. Its goal is to prevent fraud while maintaining low latency and high reliability.

Functional Requirements

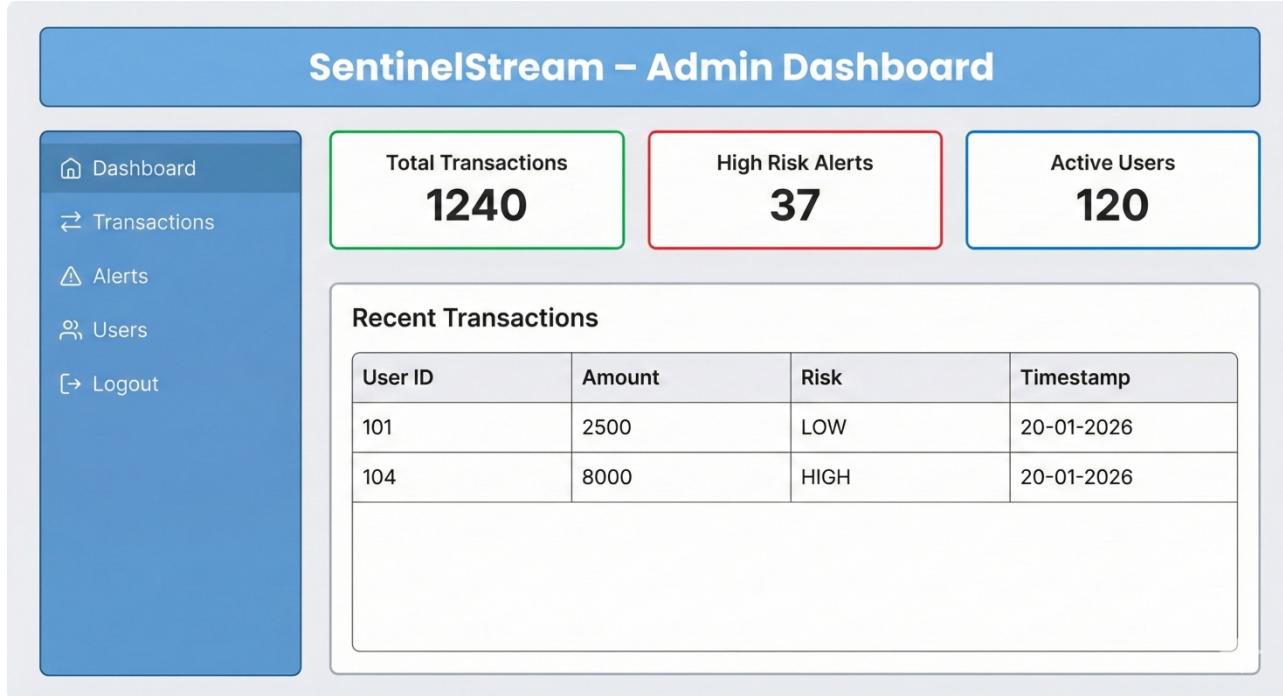
- Accept transaction requests in real time
- Validate incoming transaction data
- Predict fraud risk using an ML model
- Store transaction details and risk scores
- Return approve or decline decision to the gateway

Non-Functional Requirements

- Low latency response (under 200 ms)
- High availability and reliability
- Secure handling of sensitive data
- Scalable to handle high transaction volume

Admin Dashboard Wireframe

This wireframe represents the proposed Admin Dashboard for SentinelStream. It allows administrators to monitor total transactions, high-risk alerts, and active users in real time. The dashboard provides visibility into recent transactions along with risk classification, enabling quick fraud investigation and decision-making.



CI/CD Pipeline Setup

A CI pipeline has been configured using GitHub Actions. On every push to the main branch, the pipeline automatically validates the project structure and ensures code consistency. This enables continuous integration and early error detection.

Code

.github / workflows /

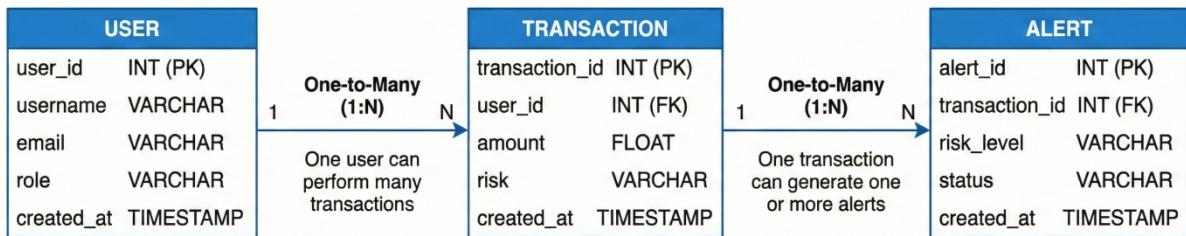
prashanth4201 Add CI pipeline configuration in ci.yml

ci.yml

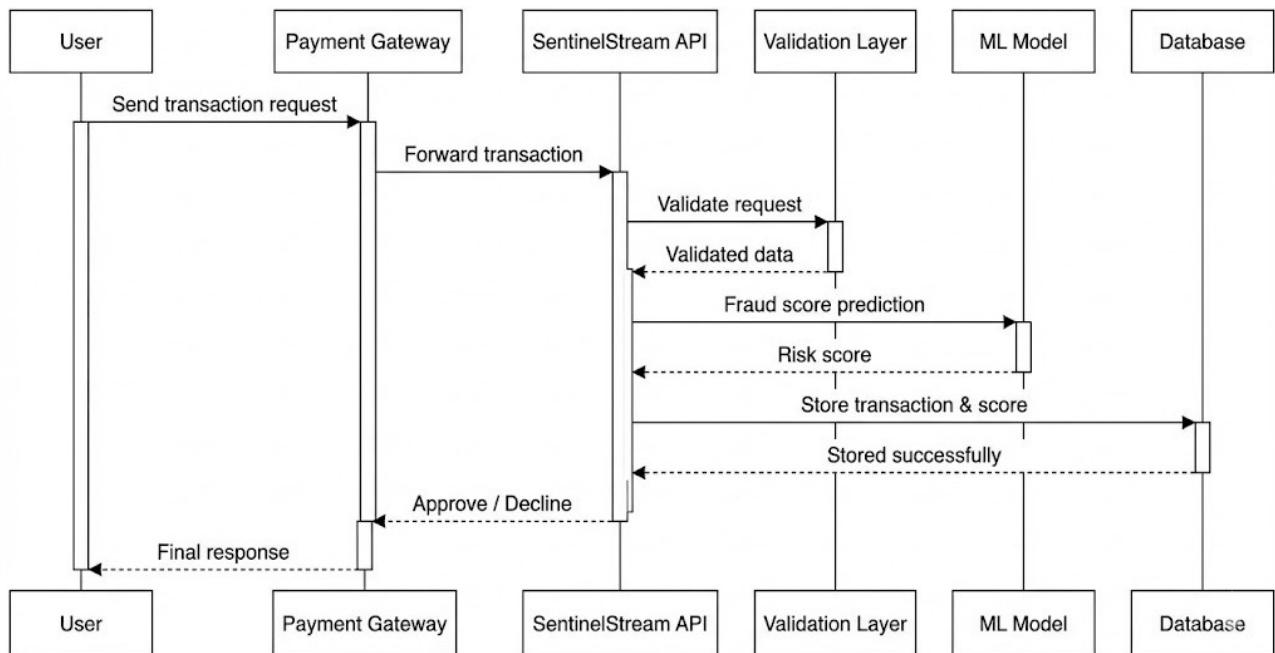
Database Normalization

The SentinelStream database schema follows Third Normal Form (3NF). Each entity (User, Transaction, Alert) is separated to eliminate data redundancy and ensure data integrity, scalability, and efficient querying.

Database Schema Design (ER Diagram)



Sequence Diagram



Commands Used(Planning, GitHub & CI/CD)

```
git clone https://github.com/sentinelstream.git
```

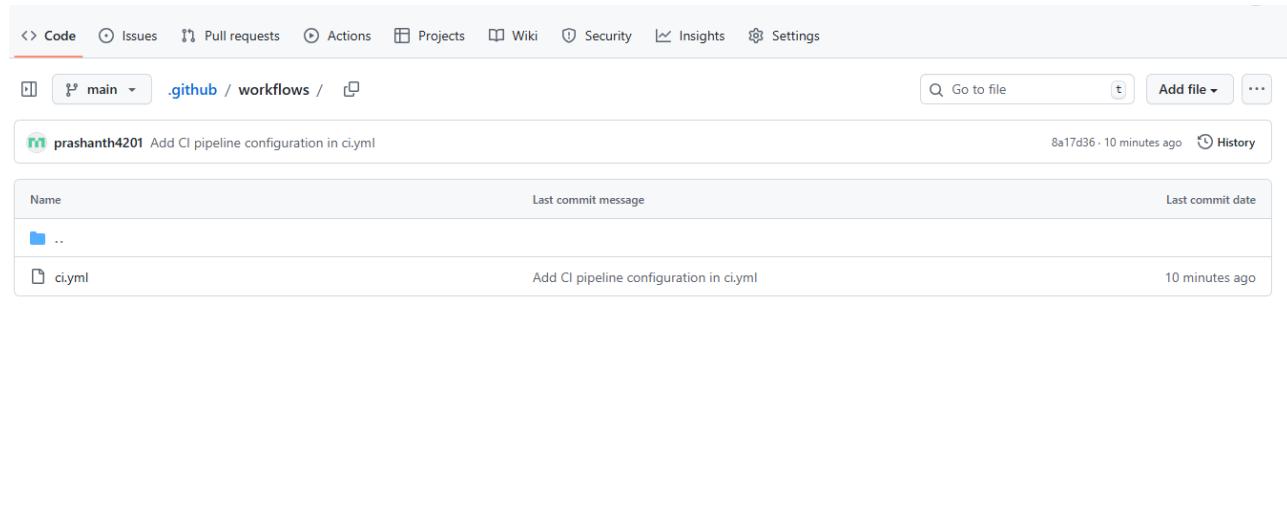
```
cd sentinelstream
```

```
git add .
```

```
git commit -m "Initial project setup"
```

```
git push origin main
```

CI/CD configured using GitHub Actions at: .github/workflows/ci.yml



The screenshot shows a GitHub repository interface. The top navigation bar includes links for Code, Issues, Pull requests, Actions, Projects, Wiki, Security, Insights, and Settings. Below the navigation, there's a breadcrumb trail: Code / main / .github / workflows / ci.yml. A search bar and an 'Add file' button are also present. The main content area displays a single file named 'ci.yml'. The file was committed by 'prashanth4201' with the message 'Add CI pipeline configuration in ci.yml' approximately 10 minutes ago.

Name	Last commit message	Last commit date
..		
ci.yml	Add CI pipeline configuration in ci.yml	10 minutes ago