Full Stack Development with Flask

Project Documentation Format

1. Introduction

• Project Title: Online Payments Fraud Detection Using Machine Learning
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2. Project Overview

• Purpose: Detect fraudulent online payment transactions using ML.
• Features: Data preprocessing, EDA, model training, comparison, Flask deployment.

3. Architecture

• Frontend: HTML/CSS templates integrated with Flask.
• Backend: Flask handling routes and ML predictions.
• Database: CSV dataset used for training.

4. Setup Instructions

• Prerequisites: Python 3.x, Flask, Pandas, NumPy, Scikit-learn.
• Installation: Install dependencies and run app.py.

5. Folder Structure

• data/: Dataset file
• templates/: HTML files
• app.py: Flask application
• payments.pkl: Saved ML model

6. Running the Application

• Command: python app.py
• URL: http://127.0.0.1:5000

7. API Documentation

• Endpoint: /predict
• Method: POST
• Output: Fraud/Not Fraud with confidence score

8. Authentication

• No authentication implemented (local system)

9. User Interface

• Home page
• Transaction input form
• Result display page

10. Testing

• Tested using sample fraud and non-fraud transactions

11. Screenshots or Demo

• UI and prediction screenshots included in report

12. Known Issues

• Manual data entry required

13. Future Enhancements

• Cloud deployment
• Real-time streaming detection
• Deep learning improvements