Project Demonstration

Online Payments Fraud Detection using Machine Learning

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1. How to Run the Application

Prerequisites

- Python 3.10 or higher installed
- pip package manager available
- A terminal / command prompt

Step-by-Step Setup

1. Open your terminal and navigate to the project folder:

```
cd online-payments-fraud-detection-ml-main/flask
```

2. Activate your virtual environment (if using one):

```
venv\Scripts\activate      (Windows)
source venv/bin/activate     (Mac/Linux)
```

3. Install all required dependencies:

```
pip install -r requirements.txt
```

4. Run the Flask application:

```
python app.py
```

5. Open your web browser and visit:

```
http://127.0.0.1:5000
```

2. Demonstration Walkthrough

Step 1: Home Page

The home page displays the project title, a brief explanation, model statistics, and a 'Try it out' button. The notebook-style design with lined paper background conveys this is a student project.

Step 2: Transaction Form

Click 'Try it out' to open the prediction form. Select a transaction type by clicking the icon buttons (Payment, Transfer, Cash Out, Debit). Fill in the amount and balance fields.

Step 3: Sample Fraud Transaction

To see a fraud detection in action, enter the following values:

Field	Value to Enter
Transaction Type	Cash Out
Amount	200000
Old Balance (Sender)	200000
New Balance (Sender)	0
Old Balance (Recipient)	0
New Balance (Recipient)	200000

Step 4: Result Page

After submitting, the result page shows the fraud verdict with a red styling, an animated probability bar filling up, and a sticky-note annotation explaining the decision.

3. GitHub Repository

Source Code: https://github.com/MahaboobShaikBasha/online-payments-fraud-detection-using-ml

Repository Contents:

- flask/ — Complete web application (app.py + templates)
- training/ — Jupyter notebook for model training (fraud_model.ipynb)
- Project Documentation/ — All IBM SkillsBuild documentation
- README.md — Setup and run instructions

4. Video Link

Drive link :
https://drive.google.com/file/d/100g8Two93J_ZRyLyqlmRm8FOMCxwuVz0/view?usp=drive_link