Online In-Game Market Controller

A QA-Oriented Demo Project

Purpose

Detect and prevent **fraudulent player behavior** in in-game markets (collusive flips, mule transfers, wash trading). Balances **precision, explainability, and QA discipline** to protect economy integrity and fair players.

Key Features

- **Precision-first detectors:** UNDER/OVER-priced trades, rapid flips, wash concentration.
- **AI augmentation:** Isolation Forest highlights suspicious accounts with explainable features.
- **QA craft:** Golden/metamorphic/property tests, CI pipeline, reproducible seed sweeps.
- **Interactive demo:** Streamlit dashboard for exploring results.

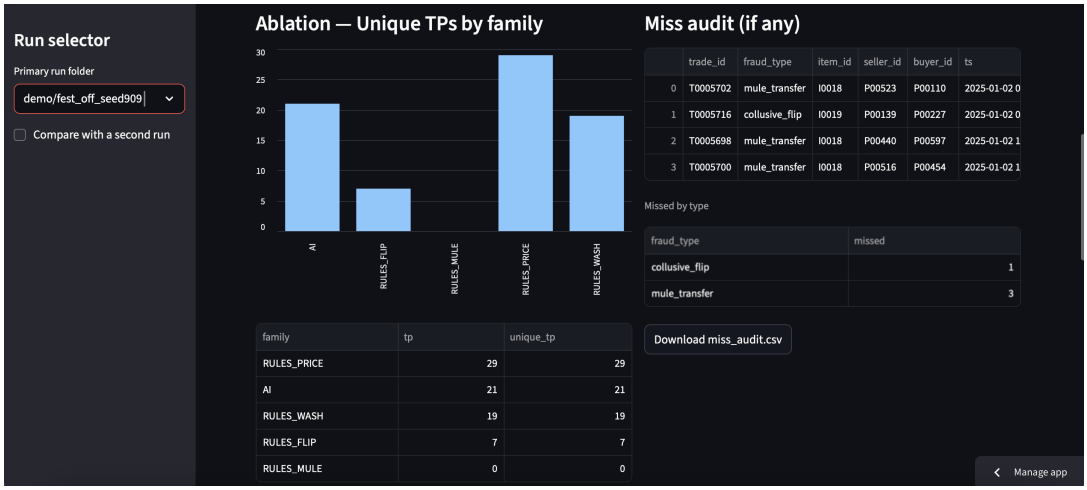
Results (Synthetic Seeds)

- **Precision:** ≈1.00 across Festival ON/OFF scenarios.
- **Recall:** 0.97–0.99 across seeds (high coverage without false positives).
- **Explainability:** Rule contributions and AI feature highlights for transparency.

QA Value

- **Structured testing:** Regression-safe via golden snapshots and invariants.
- **Operational reporting:** Per-run KPIs, missed-case audit CSVs.
- **R&D alignment:** Easy to extend with new rules/features and data formats.
- **Technical QA:** Python/pandas/sklearn; deployable via CI and Streamlit.

Visual Summary



Example: Unique TP's in the Streamlit demo

Links

Live Demo: online-ingame-market-controller-demo.streamlit.app
Repository: github.com/Balghi/online-ingame-market-controller