E-Commerce Price Monitoring & Analytics System

Professional Automated Data Monitoring Solution

WHAT IT DOES

A Python-based system that automatically monitors publicly available product pricing information, tracks historical trends, and alerts users when prices fall below predefined thresholds.

Current Capabilities:

- Automatically monitors product listing pages
- Extracts publicly displayed pricing and product information
- Stores historical data with timestamps
- Compares prices against user-defined targets
- Simple configuration — add product page URLs

Sample Output:

🚀 Starting Price Monitoring System...

🔍 Product A: $248.00
🔍 Product B: $29.99 (ALERT! Below Target)
🔍 Product C: $99.99

💾 Data saved to price_history.csv

TECHNOLOGY STACK

Playwright – Browser automation framework
Python – Core programming language
Pandas – Data processing & analysis
CSV / Database – Structured data storage

Why Playwright?

- Reliable browser automation
- Efficient page interaction handling
- Modern, scalable architecture

BUSINESS APPLICATIONS

Who Benefits

User Type	Business Value
E-commerce businesses	Monitor market pricing trends
Retail operations	Improve pricing strategy
Consumers	Track price fluctuations
Market analysts	Analyze long-term price behavior
Procurement teams	Optimize purchasing timing

Example Business Impact:

A retail client improved pricing response time and increased competitiveness after implementing automated price monitoring.

PHASE 2: EMAIL ALERT SYSTEM

Features:

- Automated email notifications
- Daily summary reports
- Multi-recipient support
- Configurable alert thresholds

Technical Implementation:

- SMTP integration
- HTML email templates
- Threshold-based triggers

PHASE 3: ADVANCED REPORTING

Features:

- Automated Excel reports
- Price trend visualization
- Purchase timing insights
- Executive summary dashboards

Deliverable includes:

- Multi-sheet reports
- Historical pricing tables
- Visual trend analysis

PHASE 4: MULTI-PLATFORM SUPPORT

The system architecture supports monitoring across multiple e-commerce platforms, enabling centralized pricing intelligence and comparison analysis.

PHASE 5: PRODUCTION DEPLOYMENT

Enterprise Features:

- Cloud deployment (24/7 operation)
- Web-based dashboard access
- Database integration (PostgreSQL)
- REST API support
- Multi-user access