Amazon Laptop Price Tracker - Project Report

1. Introduction

This project is a Python-based solution designed to automate the collection, analysis, and monitoring of laptop prices on Amazon.in. It extracts product name, price, and URL for the top 20 laptops daily and stores the data for trend analysis and alerts users of price drops through email notifications.

2. Objectives

- Scrape top 20 laptops from Amazon.in daily

- Store name, price, and link along with date in a CSV

- Send alerts via email if a price drops below a set threshold

- Visualize data using a Streamlit dashboard

3. Technologies Used

- Python

- Selenium (for browser automation)

- Pandas (for data handling)

- Matplotlib (for basic charts)

- Streamlit (for dashboard)

- smtplib (for email alerts)

- Task Scheduler & Batch Scripts (for automation)

4. Key Features

- Scrapes real-time data from Amazon using Selenium and Edge WebDriver

- Automatically saves data daily into a structured CSV file

- Triggers email alerts for price drops below user-defined threshold

- Provides an interactive Streamlit dashboard to view, filter, and visualize data

- Automates daily runs using Windows Task Scheduler

5. Setup and Usage

1. Install requirements using pip: `pip install selenium pandas matplotlib streamlit`

2. Set up your `config.py` with email and threshold settings

3. Run `main_scraper.py` to scrape and store the latest laptop prices

4. Launch the Streamlit dashboard with `streamlit run app.py`

5. Use `run_daily.bat` with Task Scheduler to automate daily scraping

6. Output

- CSV File: Contains daily records of laptop name, price, link, and date

- Email Alerts: Sent when a product price falls below set threshold

- Streamlit App: Displays latest data and price charts interactively

Site Interface:
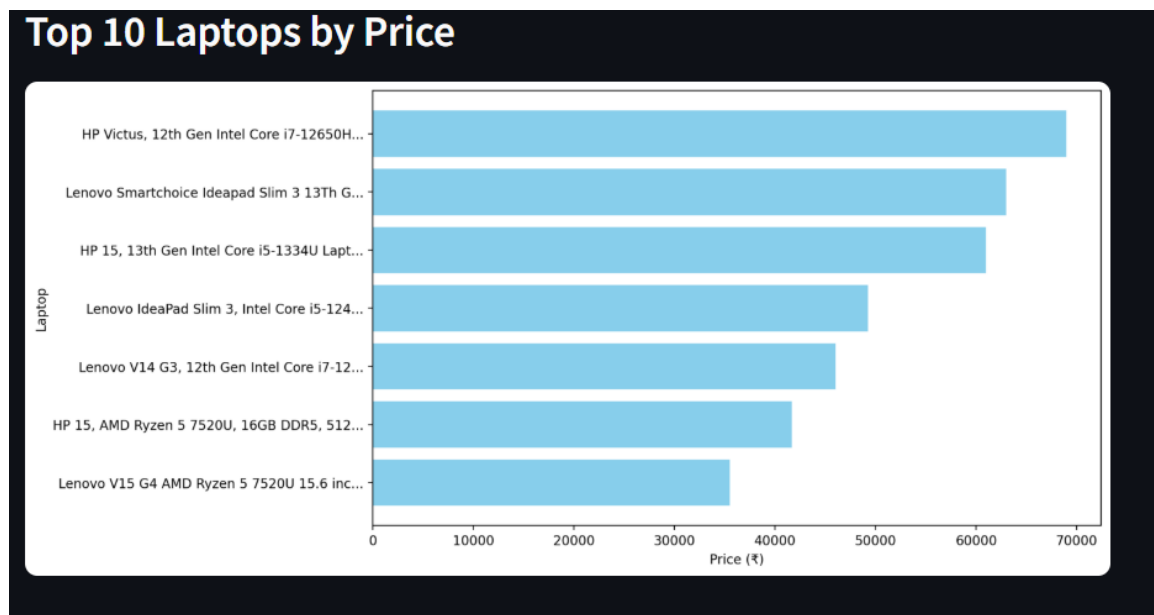
7. Conclusion

This project demonstrates a complete pipeline from data scraping and processing to automation, alerting, and visualization. It's a solid example of how Python can be used for real-world data monitoring and analysis.

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