Web Scraping Project: Real-Time E-commerce Product Price Tracker

Introduction

This project extracts product details (name, price, rating) from an e-commerce site using Python web scraping. The extracted data is stored in CSV format for further analysis.

Objectives

- Learn Python web scraping basics.
- Collect real-time product data from a website.
- Store and analyze scraped data.

Tools & Libraries

- requests: Fetch HTML page.
- BeautifulSoup: Parse HTML and extract data.
- pandas: Store data in CSV/Excel.

Methodology

1. Define target website & URL.
2. Send HTTP request with headers.
3. Parse HTML using BeautifulSoup.
4. Extract product details (name, price, rating).
5. Store data in a structured format (CSV).

Source Code

```
import requests
from bs4 import BeautifulSoup
import pandas as pd

urls = ["https://www.amazon.in/s?k=laptop"]

headers = {
    "User-Agent": "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 "
                  "(KHTML, like Gecko) Chrome/122.0.0.0 Safari/537.36"
}

products = []

for url in urls:
    response = requests.get(url, headers=headers)
    soup = BeautifulSoup(response.content, "html.parser")

    for item in soup.select(".s-result-item"):
```

```
        name = item.select_one("h2 a span")
        price = item.select_one(".a-price-whole")
        rating = item.select_one(".a-icon-alt")

        if name and price:
            products.append({
                "Product Name": name.get_text().strip(),
                "Price": price.get_text().strip(),
                "Rating": rating.get_text().strip() if rating else "N/A"
            })

df = pd.DataFrame(products)
df.to_csv("products.csv", index=False)

print("Scraping completed! Data saved to products.csv")
```

Results

The program successfully scrapes product data and saves it into a CSV file. The output file contains product name, price, and rating.

Future Scope

- Automate scraping with schedule/cron.
- Store data in MySQL/SQLite.
- Add data visualization (price trends).
- Build a dashboard using Flask/Django.