

## PEER GROUP 5

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## Web Scraping and Price Analysis of eBay Listings Report

### Project Overview

This project aims to scrape product listings from eBay using Python, extract relevant details such as product titles, prices, and links, and analyze price distributions using data visualization. The project focuses on retrieving listings for a specified search query ("car") and processing the data to gain insights into pricing trends.

### Libraries Used

- **Web Scraping:** requests, BeautifulSoup
- **Data Processing:** pandas
- **Visualization:** matplotlib

### Implementation Steps

1. **Scraping eBay Listings:**
  - The script constructs a search query URL and fetches multiple pages of results.
  - It extracts product details such as title, price, and link from each listing.
  - The scraped data is stored in a structured format using a Pandas DataFrame.
2. **Data Cleaning:**
  - Prices are cleaned by removing the dollar symbol (\$) and handling price ranges by averaging values.
  - Invalid or missing price values are filtered out.
3. **Data Analysis & Visualization:**
  - A histogram is generated to visualize the price distribution of the products.
  - This helps identify pricing trends and outliers.

### Findings & Insights

- The histogram shows a distribution of product prices, indicating the most common price ranges for eBay car listings.
- Some listings have price ranges instead of a single value, which were averaged for consistency.
- The price distribution can help users determine competitive pricing for selling or buying similar items on eBay.

## **Future Improvements**

- Expanding the search to include more product categories.
- Enhancing data processing by extracting additional attributes (e.g., condition, seller ratings).
- Automating data collection at regular intervals to track price fluctuations over time.

## **Conclusion**

This project demonstrates how web scraping can be leveraged to collect and analyze product pricing data from e-commerce platforms like eBay. The extracted data provides valuable insights that can guide pricing strategies for buyers and sellers.

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