**JB Hi-Fi Product Analysis and Dashboard**

This project involves analyzing and visualizing product data from the JB Hi-Fi website using Power BI. The objective is to create a detailed sales and performance dashboard that provides actionable insights for stakeholders. The project uses web scraping, data cleaning, and data visualization to showcase product trends and performance.

**Project Overview**

The project consists of the following key components:

1. **Data Extraction**
   * A Python script (using Selenium and BeautifulSoup) scrapes product information from the JB Hi-Fi website.
   * Data includes product names, prices, brands, promotions, reviews, ratings, and delivery options.
   * Extracted data is saved as a CSV file (jbhifi\_products\_data.csv) for further analysis.
2. **Data Visualization**
   * Power BI is used to create an interactive dashboard visualizing product trends, top-performing brands, and pricing strategies.
   * Key performance indicators (KPIs) include:
     + **Average Product Rating**
     + **Number of Reviews**
     + **Promotion Analysis**
     + **Price Distribution by Category and Brand**

**Features**

* **Web Scraping Script**
  + The Python script dynamically loads product data from multiple pages.
  + Handles features like the "Load More" button and extracts detailed product attributes.
* **Power BI Dashboard**
  + Provides insights into product categories, pricing, and promotions.
  + Supports interactive filtering and cross-visualization of data.

**Files Included**

* **test.py**: Python script for web scraping JB Hi-Fi product data.
* **jb\_hifi\_dashboard.pbix**: Power BI file containing the visualization dashboard.

**How to Use**

**1. Data Extraction**

* Ensure Python is installed on your system, along with required libraries (Selenium, BeautifulSoup, pandas, etc.).
* Update the URL in the script (test.py) to the desired JB Hi-Fi product category.
* Run the script:

bash

Copy code

python test.py

* The scraped data will be saved as jbhifi\_products\_data.csv.

**2. Visualize Data in Power BI**

* Open the jb\_hifi\_dashboard.pbix file in Power BI Desktop.
* Load the jbhifi\_products\_data.csv file into Power BI.
* Refresh the data to update the visuals.

**Requirements**

* **Python Libraries**: Selenium, BeautifulSoup4, pandas, webdriver-manager
* **Power BI Desktop**

**Future Enhancements**

* Include more product categories for comprehensive analysis.
* Automate the data pipeline for real-time dashboard updates.
* Add predictive analytics for sales trends and inventory management.

**License**

This project is open-source and available under the MIT License.