Project title : Redbus Data Scraping with Selenium & Dynamic Filtering using Streamlit

Skills take away from this project:

Web Scraping using Selenium,

Python,

Streamlit,

SQL

Domain: Transportation

Problem Statement:

The "Redbus Data Scraping and Filtering with Streamlit Application" aims to revolutionize the transportation industry by providing a comprehensive solution for collecting, analyzing, and visualizing bus travel data. By utilizing Selenium for web scraping, this project automates the extraction of detailed information from Redbus, including bus routes, schedules, prices, and seat availability. By streamlining data collection and providing powerful tools for data-driven decision-making, this project can significantly improve operational efficiency and strategic planning in the transportation industry.

Business Use Cases:

The solution can be applied to various business scenarios including:

- **Travel Aggregators:** Providing real-time bus schedules and seat availability for customers.
- **Market Analysis:** Analyzing travel patterns and preferences for market research.
- **Customer Service:** Enhancing user experience by offering customized travel options based on data insights.

● **Competitor Analysis:** Comparing pricing and service levels with competitors.

Approach:

1. **Data Scraping:**

○ Use Selenium to automate the extraction of Redbus data including routes, schedules, prices, and seat availability.

2. **Data Storage:**

○ Store the scraped data in a SQL database.

3. **Streamlit Application:**

○ Develop a Streamlit application to display and filter the scraped data.

○ Implement various filters such as bustype, route, price range, star rating, availability.

4. **Data Analysis/Filtering using Streamlit:**

○ Use SQL queries to retrieve and filter data based on user inputs.

○ Use Streamlit to allow users to interact with and filter the data through the application.

Results:

You should aim to:

● Successfully scrape a minimum of 10 Government State Bus Transport data from Redbus website using Selenium. Also include the private bus information for the selected routes.

● Store the data in a structured SQL database.

● Develop an interactive Streamlit application for data filtering.

● Ensure the application is user-friendly and efficien