Datasets:

`user_interactions.csv`: Contains data on user interactions with the website, including page views, clicks, time spent on each page, and user IDs.
`purchase_data.csv`: Includes information on product purchases, such as purchase timestamp, product ID, transaction amount, and user IDs.
`website_performance.csv`: Provides website performance metrics like page load time, bounce rate, and conversion rate for specific time periods.

Tasks to Complete:

Data Exploration and Cleaning:
- Load and explore each dataset to identify missing values, outliers, or any data quality issues.
- Perform necessary data cleaning and preprocessing.

User Behavior Analysis:
- Analyze user interactions to identify the most visited pages and the average time spent on each page.
- Determine the click-through rate for different sections of the website (e.g., homepage, product categories).
- Create visualizations to present your findings effectively.

Purchase Analysis:
- Calculate the overall conversion rate for the website based on purchase data.
- Identify the top-selling products and product categories.
- Explore the relationship between the number of interactions on the website and the likelihood of a purchase.

Cohort Analysis:
- Perform a cohort analysis based on user sign-up dates to understand user retention and behavior over time.
- Determine the lifetime value (LTV) of customers acquired during different time periods.

Website Performance Optimization:
- Analyze website performance metrics to identify areas for improvement.
- Propose strategies to reduce bounce rate and improve the conversion rate.
- Create a visualization dashboard to monitor website performance in real-time.