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.