Cohort Analysis is a method used in analytics and business intelligence to group customers or users into cohorts based on shared characteristics or experiences within a defined time-span. These cohorts are then tracked over time to observe changes in behavior, usage, or other key metrics.

The provided dataset contains user interaction data, including metrics such as the number of new and returning users, and their engagement durations on Day 1 and Day 7. The data is structured with dates, allowing for time-series analysis. Key columns in the dataset are:

Date: The specific dates of user interactions.

New Users: The count of new users for each date.

Returning Users: The count of users returning on each date.

Duration Day 1: The average duration (possibly in minutes or seconds) of user interaction on their first day.

Duration Day 7: The average duration of user interaction on their seventh day.

Your task is to:

Identify trends in the acquisition of new users and the retention of returning users on a weekly basis.

Understand how user engagement, as indicated by the average duration of interaction, evolves from the first day to the seventh day of usage.

Detect any significant weekly patterns or anomalies in user behavior and engagement, and investigate the potential causes behind these trends.

Explore the relationship between user retention (returning users) and engagement (duration metrics), to assess the effectiveness of user engagement strategies.

Provide actionable insights that can guide marketing efforts, content strategies, and user experience improvements.