

## **Business Requirement**

- **Analyze Bike Usage Patterns:** Understand the trend in the usage of bikes concerning average duration of a trip, hours of the day that a bike is most in demand, and popular starting and stopping stations.
- **Optimize Station Distribution:** Identify the most frequent starting and stopping stations for the recommendation of locations for new bike stations or relocation of those already in place.
- **Improve the Customer Experience:** Analyze how different pass types, among others, such as Monthly Pass, Walk-up, influence riding behavior to offer better personalization of membership offers.

## **Functional Requirement:**

- **Upload New Data:** Data upload functionality shall be provided to the administrator for uploading the new dataset in order for the system to always remain up-to-date on the latest trip data.
- **Filtering and Searching Capabilities:** Enable users to filter the data such as on parameters related to trip duration, starting and ending location, date, and type of pass.
- **Visualize Usage Trends:** Provide graphs on the trend of usage across time; that is, a pattern of day-to-day, week-to-week, and month-to-month use.
- **Station Analysis Reporting:** Reports that will summarize the key metrics of the station include total trips per station, average duration of trips, and the most popular routes.
- **Geographical Mapping:** Display bike trip routes on a map with starting and ending latitude and longitude coordinates.