

## Part 1

1.

1. Bar chart displaying the 10 to 20 most popular start stations in Chicago.
2. Line chart showing the number of trips taken each month, along with the average monthly temperature to identify any potential weather-related trends.
3. Map visualizing the most common bike trips/routes in the city, indicating areas of high activity and potential bike shortages.

These visualizations should provide valuable insights into station popularity, seasonal usage patterns, and geographic distribution, helping stakeholders make informed decisions about expanding bike station locations.

2.

1. What are the most popular stations in the city?
  - a. Visualization: Bar chart displaying the top 10 to 20 start stations based on the frequency of bike pickups.
2. Which months have the highest number of trips taken, and is there a weather component at play?
  - a. Visualization: Line chart showing the number of trips taken each month, overlaid with a second line representing the average monthly temperature. This will help identify any correlations between seasonal changes and bike usage.
3. What are the most common bike trips/routes in the city?
  - a. Visualization: Map visualization pinpointing the most common bike routes between stations. Aggregation can be used to distinguish between one-time trips and recurring routes, providing insights into high-traffic areas and potential bike shortages.
4. Are the existing stations evenly distributed across the city?
  - a. Visualization: Map visualization showing the geographic distribution of existing bike stations. This will help identify any gaps or clusters in station placement, indicating areas where additional stations may be needed to improve service availability.

These visualizations, combined with the analysis of the data, will provide a comprehensive understanding of bike usage patterns and station distribution, informing strategic decisions about expanding the bike-sharing service.