1. What are the busiest stations by the number of trips starting there during weekends?

SQL Query:

SELECT Stations.name, COUNT(*)

FROM Stations JOIN Duration ON Stations.id = Duration.from_station_id

WHERE DATEPART(dw, start_time) IN (1, 7)

GROUP BY Stations.name

ORDER BY COUNT(*) DESC;

2. How does the average trip duration vary between subscribers and customers?

SQL Query:

SELECT usertype, AVG(Duration.tripduration)

FROM Trips JOIN Duration ON Trips.trip_id = Duration.trip_id

GROUP BY usertype;

3. Which bikes are most frequently used, and what are their usual start and end stations?

SQL Query:

SELECT bikeid, Stations.name AS StartStation, COUNT(*)

FROM Trips JOIN Duration ON Trips.trip_id = Duration.trip_id

JOIN Stations ON Duration.from_station_id = Stations.id

GROUP BY bikeid, StartStation

ORDER BY COUNT(*) DESC;

4. How many trips were longer than 1-hour last month, and what were their start and end locations?

SQL Query:

SELECT Duration.from_station_id, Duration.to_station_id, COUNT(*)

FROM Duration

WHERE tripduration > 3600 AND start_time >= '2023-11-01' AND end_time <= '2023-11-30'

GROUP BY from_station_id, to_station_id;

5. **Question**: What are the trends in trip durations over different months of the year?

SQL Query:

SELECT MONTH(start_time) AS Month, AVG(tripduration)

FROM Duration

GROUP BY MONTH(start_time);