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SQL Code for Big Query Public Datasets

London Cycle Data

How many stations are at capacity, empty, or out of service?

Capacity Stations:

```
SELECT  
  
    COUNT(*) AS Capacity  
  
FROM  
  
    `bigquery-public-data.london_bicycles.cycle_stations`  
  
WHERE  
  
    bikes_count - docks_count = 0  
  
    AND nbEmptyDocks = 0
```

Empty Stations:

```
SELECT  
  
    COUNT(*) AS Empty  
  
FROM  
  
    `bigquery-public-data.london_bicycles.cycle_stations`  
  
WHERE  
  
    bikes_count = 0
```

Out of Service Stations:

```
SELECT  
  
    count(*) AS Damaged_Stations  
  
FROM  
  
    `bigquery-public-data.london_bicycles.cycle_stations`  
  
WHERE
```

locked = 'true'

What is the most popular station to starting rides for all time?

Popular Stations:

```
SELECT
    start_station_name, COUNT(bike_id) AS number_trips
FROM
    `bigquery-public-data.london_bicycles.cycle_hire`

WHERE

start_station_name != end_station_name

GROUP BY start_station_name

ORDER BY number_trips DESC

LIMIT 5
```

What is the most popular station to end rides for all time?

Popular Ending Station:

```
#TOP 5 Ending Stations with the most number of trips

SELECT
    end_station_name, COUNT(bike_id) AS number_trips
FROM
    `bigquery-public-data.london_bicycles.cycle_hire`

WHERE

start_station_name != end_station_name

GROUP BY end_station_name
```

ORDER BY number_trips DESC

LIMIT 5

What are the top 3 most popular trips (start and end station combination) for all time?

Station Combinations:

SELECT

start_station_name,

end_station_name,

IF(start_station_name = end_station_name,

TRUE,

FALSE) same_station,

AVG(duration) AS avg_duration,

COUNT(*) AS total_rides

FROM

`bigquery-public-data.london_bicycles.cycle_hire`

WHERE

start_station_id != end_station_id

GROUP BY

start_station_name,

end_station_name,

same_station

ORDER BY

total_rides DESC

LIMIT 3

Which hours of the day does usage peak on weekdays?

Peak time on weekdays:

```
SELECT
    hour,
    MAX(number_trips) AS maximum_trips
FROM (
    SELECT
        EXTRACT (HOUR
        FROM
            CAST(start_date AS TIME)) AS hour,
        EXTRACT (DAYOFWEEK
        FROM
            start_date ) AS day_week,
        COUNT(*) AS number_trips
    FROM
        `bigquery-public-data.london_bicycles.cycle_hire`
    GROUP BY
        1,
        2 )
WHERE
    day_week != 7
    OR day_week != 1
GROUP BY
    1
ORDER BY
    2 DESC
```

Which hours of day does usage peak on weekends?**Peak time on weekends:**

```
SELECT
```

```

hour,
MAX(number_trips) AS maximum_trips
FROM (
  SELECT
    EXTRACT (HOUR
  FROM
    CAST(start_date AS TIME)) AS hour,
    EXTRACT (DAYOFWEEK
  FROM
    start_date ) AS weekend,
    COUNT(*) AS number_trips
  FROM
    `bigquery-public-data.london_bicycles.cycle_hire`
  GROUP BY
    1,
    2 )
WHERE
  weekend != 6
  AND weekend != 5
  AND weekend != 4
  AND weekend != 3
  AND weekend != 2
GROUP BY
  1
ORDER BY
  2 DESC
SELECT
  COUNT(*) AS Empty
FROM

```

```
`bigquery-public-data.london_bicycles.cycle_stations`
```

```
WHERE
```

```
bikes_count = 0
```