-- get the maximum altitude reached by flights that were delayed

SELECT

    max(altitude)

  FROM

    `direct-axiom-428510-d6.flight\_stream\_data.flight\_data\_merged\_bts` AS flight\_data\_merged\_bts

  WHERE flight\_data\_merged\_bts.DepDelay > 0;

-- show the average difference in flights maximum altitude from delayed vs non delayed flights

SELECT

    avg(CASE

      WHEN ArrDel15 = 1 THEN altitude

      ELSE CAST(NULL as BIGNUMERIC)

    END) - avg(CASE

      WHEN ArrDel15 = 0 THEN altitude

      ELSE CAST(NULL as BIGNUMERIC)

    END) AS avg\_altitude\_diff

  FROM

    `direct-axiom-428510-d6.flight\_stream\_data.flight\_data\_merged\_bts`;

-- show the count of how many flights were delayed that did not reach maximum altitude

SELECT

    count(flight\_data\_merged\_bts.flight\_number\_operating\_airline)

  FROM

    `direct-axiom-428510-d6.flight\_stream\_data.flight\_data\_merged\_bts` AS flight\_data\_merged\_bts

  WHERE flight\_data\_merged\_bts.ArrDelay > 0

   AND flight\_data\_merged\_bts.altitude < 30000;

-- 1. get 10 highest maximum altitude flights that were delayed and compare to 10 highest maximum altitude flights of non delayed

-- 2. order by ascending

-- 3. order by altitude desc

-- 4. group baro\_altitude

(

  SELECT

      flight\_data\_merged\_bts.Flight\_Number\_Marketing\_Airline,

      MAX(flight\_data\_merged\_bts.altitude) AS max\_altitude,

      baro\_altitude

    FROM

      `direct-axiom-428510-d6.flight\_stream\_data.flight\_data\_merged\_bts` AS flight\_data\_merged\_bts

    WHERE flight\_data\_merged\_bts.DepDelay > 0

    GROUP BY 1, 3

    ORDER BY

      baro\_altitude DESC

    LIMIT 10

)

UNION ALL

(

  SELECT

      flight\_data\_merged\_bts.Flight\_Number\_Marketing\_Airline,

      MAX(flight\_data\_merged\_bts.altitude) AS max\_altitude,

      baro\_altitude

    FROM

      `direct-axiom-428510-d6.flight\_stream\_data.flight\_data\_merged\_bts` AS flight\_data\_merged\_bts

    WHERE flight\_data\_merged\_bts.DepDelay = 0

    GROUP BY 1, 3

    ORDER BY

      baro\_altitude DESC

    LIMIT 10

);

-- calculate the average maximum altitude of flights that were delayed >30 minutes over 24 hours

SELECT

    avg(altitude) AS average\_max\_altitude

  FROM

    `direct-axiom-428510-d6.flight\_stream\_data.flight\_data\_merged\_bts` AS FlightData

  WHERE FlightData.ArrDelay > 30;

-- Get the maximum altitude reached by each flight for the past 24 hours.

SELECT

  icao24,

  MAX(altitude) AS max\_altitude

FROM `flight\_stream\_data.flight\_data`

WHERE

  time\_bq BETWEEN DATE\_TRUNC(CURRENT\_TIMESTAMP(), DAY) AND CURRENT\_TIMESTAMP()

GROUP BY

  icao24

ORDER BY

  max\_altitude DESC;