Note:

These are queries that I used for the dashboard because I wanted to gather more data so that I could create multiple visualizations that give an insight into the question.

AQ1.

Which Country Has The Most Amount Of Delays ?

```
SELECT custom1.country_name, custom1.region, custom1.delay_code,
custom1.delay_moment, SUM(custom1.delay_count) as delay_count
FROM
((SELECT da.country_name AS country_name, da.region, ddt.delay_code, 'Arrival' AS
delay_moment, COUNT(ddt.delay_code) AS delay_count
FROM [datawarehouse].[dbo].[fact_delay] fd
INNER JOIN [datawarehouse].[dbo].[dim_airport] da
ON fd.dim_airport_arrival_fk = da.airport_sk
INNER JOIN [datawarehouse].[dbo].[dim_delay_type] ddt
ON fd.dim_delay_type_fk = ddt.delay_type_sk
WHERE fd.DIM_DELAY_MOMENT_FK = 0
GROUP BY da.country_name, da.region, ddt.delay_code)

UNION ALL

(SELECT da.country_name AS country_name, da.region, ddt.delay_code, 'Departure' AS
delay_moment, COUNT(ddt.delay_code) AS delay_count
FROM [datawarehouse].[dbo].[fact_delay] fd
INNER JOIN [datawarehouse].[dbo].[dim_airport] da
ON fd.dim_airport_departure_fk = da.airport_sk
INNER JOIN [datawarehouse].[dbo].[dim_delay_type] ddt
ON fd.dim_delay_type_fk = ddt.delay_type_sk
WHERE fd.DIM_DELAY_MOMENT_FK = 1
GROUP BY da.country_name, da.region, ddt.delay_code)) custom1

GROUP BY custom1.country_name, custom1.region, custom1.delay_code,
custom1.delay_moment
```

AQ2.

Which Are The Most Visited Countries In Europe ?

```
SELECT f.name, arr_a.country_name AS arrival_country,
dep_a.country_name AS departure_country,
COUNT(f.name) AS departure_count

FROM [flightmanagement].[dbo].[flight] f
INNER JOIN [datawarehouse].[dbo].[dim_airport] dep_a
ON f.departure_id = dep_a.airport_id
INNER JOIN [datawarehouse].[dbo].[dim_airport] arr_a
ON f.arrival_id = arr_a.airport_id

WHERE arr_a.region LIKE 'Europe'

GROUP BY f.name, arr_a.country_name, dep_a.country_name
```

AQ3.

Which Delay Type Has The Longest Average Delay ?

```sql
SELECT ddt.delay_code, ddt.delay_description,
AVG(fd.EFFECTIVE_DELAY_TIME_MV) AS average_delay,
COUNT(ddt.delay_code) as delay_count

FROM [datawarehouse].[dbo].[fact_delay] fd
INNER JOIN [datawarehouse].[dbo].[dim_delay_type] ddt
ON fd.DIM_DELAY_TYPE_FK = ddt.delay_type_sk

GROUP BY ddt.delay_code, ddt.delay_description
```

AQ4.

Which Countries In Europe Have The Most Amount Of Airports Per Capita ?

```sql
SELECT custom1.country_name, custom1.region, CAST(((custom1.airport_count /
custom1.population) * 1000000) AS decimal(10,2)) AS airports_per_million

FROM (SELECT da.country_name, COUNT(airport_name) AS airport_count , c.population,
da.region
FROM [datawarehouse].[dbo].[dim_airport] da
INNER JOIN [CountryInfo].[dbo].[Countries] c
ON da.country_name = c.name
GROUP BY da.country_name, c.population, da.region) custom1

WHERE custom1.population > 1000000

GROUP BY custom1.country_name, custom1.region, custom1.airport_count,
custom1.population
```

AQ5.

Which Airports In Germany Had The Highest Amount Of Delays In 2021 ?

```sql
SELECT dd.date, df.flight_number, da.airport_name, ddt.delay_code,
ddm.delay_moment_description, count(fd.DELAY_COUNT_MV) as 'Delay Count'

FROM [datawarehouse].[dbo].[fact_delay] fd
INNER JOIN [datawarehouse].[dbo].[dim_flight] df
ON fd.dim_flight_fk = df.flight_sk
INNER JOIN [datawarehouse].[dbo].[dim_airport] da
ON (CASE WHEN fd.dim_delay_moment_fk = 1 THEN fd.DIM_AIRPORT_DEPARTURE_FK
WHEN fd.DIM_DELAY_MOMENT_FK = 0 THEN fd.DIM_AIRPORT_ARRIVAL_FK END) =
da.airport_sk
INNER JOIN [datawarehouse].[dbo].[dim_delay_moment] ddm
ON fd.DIM_DELAY_MOMENT_FK = ddm.delay_moment_sk
INNER JOIN [datawarehouse].[dbo].[dim_delay_type] ddt
ON fd.DIM_DELAY_TYPE_FK = ddt.delay_type_sk
INNER JOIN [datawarehouse].[dbo].[dim_date] dd
ON fd.dim_date_fk = dd.date_sk

WHERE year(dd.date) = 2021 AND da.country_name LIKE 'Germany'

GROUP BY dd.date, df.flight_number, da.airport_name, ddt.delay_code,
ddm.delay_moment_description
```

AQ6.

Does The Scope Of The Flight Have An Effect On The Average Flight Delays ?

```sql
SELECT df.flight_number, dd.date, ddm.delay_moment_description, ddt.delay_code,
fd.EFFECTIVE_DELAY_TIME_MV,
(CASE WHEN dep_a.country_name = arr_a.country_name THEN 'Domestic' ELSE
'International' END) AS domestic_or_international

FROM
[datawarehouse].[dbo].[fact_delay] fd
INNER JOIN [datawarehouse].[dbo].[dim_flight] df
ON fd.dim_flight_fk = df.flight_sk
INNER JOIN [datawarehouse].[dbo].[dim_delay_moment] ddm
ON fd.DIM_DELAY_MOMENT_FK = ddm.delay_moment_sk
INNER JOIN [datawarehouse].[dbo].[dim_delay_type] ddt
ON fd.DIM_DELAY_TYPE_FK = ddt.delay_type_sk
INNER JOIN [datawarehouse].[dbo].[dim_date] dd
ON fd.dim_date_fk = dd.date_sk
INNER JOIN [datawarehouse].[dbo].[dim_airport] dep_a
ON fd.DIM_AIRPORT_DEPARTURE_FK = dep_a.airport_sk
INNER JOIN [datawarehouse].[dbo].[dim_airport] arr_a
ON fd.DIM_AIRPORT_ARRIVAL_FK = arr_a.airport_sk

GROUP BY df.flight_number, dd.date, ddm.delay_moment_description, ddt.delay_code,
fd.EFFECTIVE_DELAY_TIME_MV, dep_a.country_name, arr_a.country_name
```