

# analiza

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25 04 2021

a. Jakie było średnie opóźnienie przylotu?

```
SELECT AVG(arr_delay_new) AS 'avg_delay'  
FROM Flight_delays
```

Table 1: 1 records

avg_delay
15.91152

b. Jakie było maksymalne opóźnienie przylotu?

```
SELECT MAX(arr_delay_new) AS 'max_delay'  
FROM Flight_delays
```

Table 2: 1 records

max_delay
1895

c. Który lot miał największe opóźnienie przylotu?

```
SELECT fl_date, arr_delay_new, carrier, origin_city_name, dest_city_name  
FROM Flight_delays  
WHERE arr_delay_new = (SELECT MAX(arr_delay_new) AS 'max_delay'  
FROM Flight_delays)
```

Table 3: 1 records

fl_date	arr_delay_new	carrier	origin_city_name	dest_city_name
2017-07-26	1895	AA	Kona, HI	Los Angeles, CA

d. Które dni tygodnia są najgorsze do podróżowania?

```
SELECT AVG(arr_delay_new) AS 'avg_delay', weekday_name
FROM Flight_delays F
    INNER JOIN Weekdays W
        ON W.weekday_id = F.day_of_week
GROUP BY W.weekday_name
ORDER BY avg_delay DESC
```

Table 4: 7 records

avg_delay	weekday_name
20.80747	Friday
18.04801	Monday
16.10514	Wednesday
15.64696	Thursday
15.21876	Saturday
12.88056	Tuesday
12.77606	Sunday

e. Które linie lotnicze latające z San Francisco (SFO) mają najmniejsze opóźnienia przylotu?

```
SELECT AVG(arr_delay_new) AS 'avg_delay', A.airline_name
FROM Flight_delays F
    INNER JOIN Airlines A ON A.airline_id = F.airline_id
WHERE A.airline_name IN (SELECT A.airline_name
                        FROM Flight_delays F
                            INNER JOIN Airlines A ON A.airline_id = F.airline_id
                                WHERE F.origin = 'SFO')
GROUP BY A.airline_id, A.airline_name
ORDER BY avg_delay DESC
```

Table 5: Displaying records 1 - 10

avg_delay	airline_name
28.841148	JetBlue Airways: B6
18.980300	Frontier Airlines Inc.: F9
18.375314	American Airlines Inc.: AA
16.950403	United Air Lines Inc.: UA
16.808273	SkyWest Airlines Inc.: OO
13.964467	Virgin America: VX
13.823983	Southwest Airlines Co.: WN
12.258788	Delta Air Lines Inc.: DL
7.453927	Alaska Airlines Inc.: AS
4.202719	Hawaiian Airlines Inc.: HA

f. Jaka część linii lotniczych ma regularne opóźnienia, tj. jej lot ma średnio co najmniej 10 min. opóźnienia?

```
SELECT (cast((SELECT DISTINCT COUNT(*) OVER () AS Total_1
              FROM dbad_flights.dbo.Flight_delays F1
              WHERE 10 <= SOME (SELECT AVG(arr_delay_new)
```

```

FROM dbad_flights.dbo.Flight_delays F2
WHERE F1.airline_id = F2.airline_id
GROUP BY airline_id) AS FLOAT) /
(cast((SELECT DISTINCT COUNT(*) OVER () AS Total_2
FROM dbad_flights.dbo.Flight_delays
GROUP BY airline_id) AS FLOAT))) AS 'late_proportion'

```

Table 6: 1 records

late_proportion
0.833333

g. Jak opóźnienia wylotów wpływają na opóźnienia przylotów?

```

SELECT (AVG(dep_delay_new * arr_delay_new) - (AVG(dep_delay_new) * AVG(arr_delay_new)))
/ (STDEVP(dep_delay_new) * STDEVP(arr_delay_new)) AS 'Pearsons r'
FROM dbad_flights.dbo.Flight_delays

```

Table 7: 1 records

Pearsons r
0.97371

h. Która linia lotnicza miała największy wzrost (różnica) średniego opóźnienia przylotów w ostatnim tygodniu miesiąca, tj. między 1-23 a 24-31 lipca?

```

SELECT TOP 1 b.arr_delay_new2 - a.arr_delay_new1 AS 'delay_increase', a.airline_name
FROM (SELECT AVG(arr_delay_new) AS 'arr_delay_new1', F.airline_id, A.airline_name
      FROM Flight_delays F
      INNER JOIN Airlines A ON A.airline_id = F.airline_id
      WHERE fl_date BETWEEN '20170701' AND '20170723'
      GROUP BY F.airline_id, A.airline_name) a
      INNER JOIN (SELECT AVG(arr_delay_new) AS 'arr_delay_new2', F.airline_id
      FROM Flight_delays F
      INNER JOIN Airlines A ON A.airline_id = F.airline_id
      WHERE fl_date BETWEEN '20170724' AND '20170731'
      GROUP BY F.airline_id) b
      ON a.airline_id = b.airline_id
ORDER BY delay_increase DESC

```

Table 8: 1 records

delay_increase	airline_name
0.584763	Southwest Airlines Co.: WN

i. Które linie lotnicze latają zarówno na trasie SFO → PDX (Portland), jak i SFO → EUG (Eugene)?

```

SELECT DISTINCT airline_name
FROM dbad_flights.dbo.Airlines A
    INNER JOIN dbad_flights.dbo.Flight_delays F
        ON F.airline_id = A.airline_id
WHERE (F.origin = 'SFO' AND F.dest = 'PDX')
    AND F.airline_id IN (SELECT airline_id
        FROM dbad_flights.dbo.Flight_delays

                                WHERE origin = 'SFO' AND dest = 'EUG')

```

Table 9: 2 records

airline_name
SkyWest Airlines Inc.: OO
United Air Lines Inc.: UA

j. Jak najszybciej dostać się z Chicago do Stanfordu, zakładając wylot po 14:00 czasu lokalnego?

```

SELECT cast(AVG(arr_delay_new) AS DECIMAL(17,14)) AS 'avg_delay', origin, dest
FROM dbad_flights.dbo.Flight_delays
WHERE origin IN ('MDW', 'ORD')
    AND dest IN ('SFO', 'SJC', 'OAK')
    AND crs_dep_time > '1400'
GROUP BY origin, dest
ORDER BY avg_delay DESC

```

Table 10: 5 records

avg_delay	origin	dest
22.19253	ORD	SFO
19.85714	MDW	SFO
17.20000	MDW	SJC
14.81111	ORD	SJC
12.12903	MDW	OAK