Maxis Graduate Program - Data & Insights

LEE JO LYN

Introduction

- Oracle SQL Devloper
- Consists of 3 tasks

HOW MANY AIRPORTS ARE IN MALAYSIA?

DISTANCE IN BETWEEN MALAYSIA AIRPORTS?

- **HOW MANY FLIGHTS ARE LANDING IN MALAYSIA?**
- **WHICH IS THE MOST CONGESTED AIRPORT?**

Task 1: How Many Airports Are In Malaysia?

There are a total of 40 airports in Malaysia

```sql
select count(country)
from airport_data
where country='Malaysia';
```

	COUNT(COUNTRY)
1	40

```sql
select airport_data.name,city,country from airport_data
where country='Malaysia';
```

	NAME	CITY	COUNTRY
1	Bintulu Airport	Bintulu	Malaysia
2	Kuching International Airport	Kuching	Malaysia
3	Limbang Airport	Limbang	Malaysia
4	Marudi Airport	Marudi	Malaysia
5	Miri Airport	Miri	Malaysia
6	Sibu Airport	Sibu	Malaysia
7	Lahad Datu Airport	Lahad Datu	Malaysia
8	Kota Kinabalu International Airport	Kota Kinabalu	Malaysia
9	Labuan Airport	Labuan	Malaysia
10	Tawau Airport	Tawau	Malaysia

Task 2: Distance In Between Malaysia Airports

A function is created to calculate the distance between 2 points using latitude and longitude

```sql
CREATE OR REPLACE FUNCTION airports_distance(
        p_latitude1 NUMBER,
        p_longitude1 NUMBER,
        p_latitude2 NUMBER,
        p_longitude2 NUMBER)
    RETURN NUMBER DETERMINISTIC IS

    earth_radius NUMBER := 6371;
    pi NUMBER := ACOS(-1)/180;

    lat_delta NUMBER;
    lon_delta NUMBER;
    arc NUMBER;

BEGIN

    lat_delta := (p_latitude2-p_latitude1)*pi;
    lon_delta := (p_longitude2-p_longitude1)*pi;
    arc := SIN(lat_delta/2) * SIN(lat_delta/2) + SIN(lon_delta/2) * SIN(lon_delta/2) * COS(p_latitude1*pi) * COS(p_latitude2*pi);
    return earth_radius * 2 * atan2(sqrt(arc), sqrt(1-arc));
END;
/
```

Task 2 (Continued)

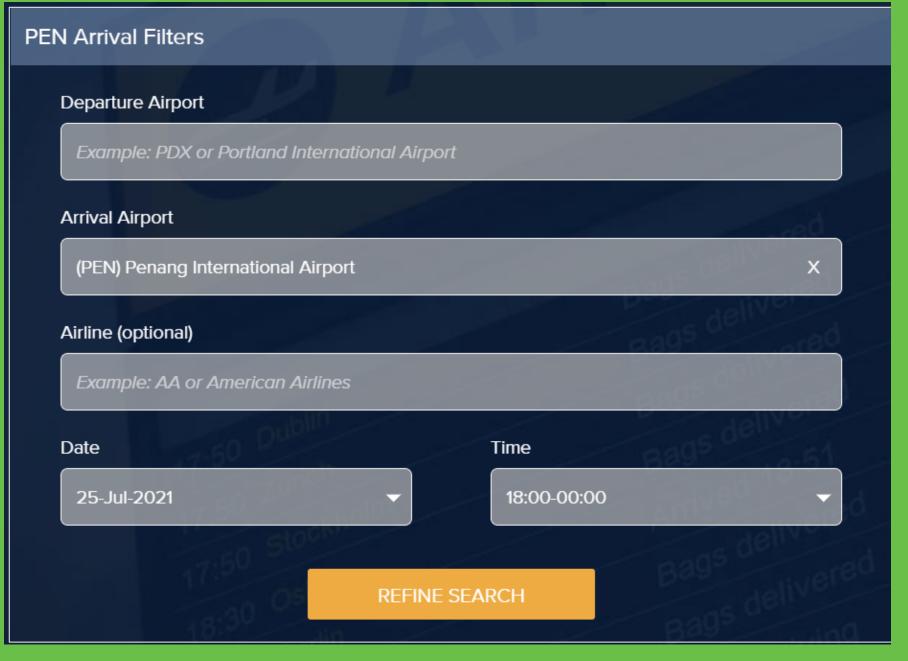Then, query the distance by passing in the latitude and longitude of 2 points:

```sql
SELECT airports_distance(3.12385010719,113.019996643,1.484699964523315,110.34700012207031) from dual;
```

AIRPORTS_DISTANCE(3.12385010719,113.019996643,1.484699964523315,110.34700012207031)
348.444565297829704464205231911895098039

Before Getting Into Task 3:

- Data is scraped from www.flightstats.com
- Each Malaysia airport are entered manually to search for the flight status
- Download the data as CSV and import to SQL Developer

PEN Arrival Filters

Departure Airport

Example: PDX or Portland International Airport

Arrival Airport

(PEN) Penang International Airport   x

Airline (optional)

Example: AA or American Airlines

Date   **Time**

25-Jul-2021   ▼   18:00-00:00   ▼

REFINE SEARCH

Task 3: How Many Flights Are Landing In Malaysia

In my opinion, this approach is not optimal as there is no **origin** column contained in the data.

```sql
select count(airport_name)
from flight_status
where airport_name='KUL'or airport_name='BKI' or airport_name='SZB' or airport_name='PEN' or airport_name='KCH';
```

	COUNT(AIRPORT_NAME)
1	34

```sql
select * from flight_status
where airport_name='KUL'or airport_name='BKI' or airport_name='SZB' or airport_name='PEN' or airport_name='KCH';
```

	AIRPORT_NAME	FLIGHT	DEPARTURE_TIME	ARRIVAL_TIME	ORIGIN_AIRPORT	AIRLINE	ORIGIN
1	KUL	SV 786	11:10	18:30	MLE	Saudia	Male
2	KUL	MH 1455	17:20	18:30	LGK	Malaysia Airlines	Langkawi
3	KUL	MH 1397	17:50	18:55	KBR	Malaysia Airlines	Kota Bharu
4	KUL	MH 2517	17:10	19:05	KCH	Malaysia Airlines	Kuching
5	KUL	MH 1335	18:00	19:05	TGG	Malaysia Airlines	Kuala Terengganu
6	KUL	AK 5197	16:35	19:20	SDK	AirAsia	Sandakan
7	KUL	MH 2607	16:55	19:30	BKI	Malaysia Airlines	Kota Kinabalu
8	KUL	SQ 126	18:45	19:45	SIN	Singapore Airlines	Singapore
9	KUL	MH 6071	16:15	19:50	MNL	Malaysia Airlines	Manila
10	KUL	MXD 349	16:50	20:00	CGK	Malindo Air	Jakarta

Task 3: WHICH IS THE MOST CONGESTED AIRPORT?

In Malaysia

In the world

```
select airport_name, COUNT(*)from flight_status
where airport_name='KUL'
or airport_name='BKI' or airport_name='SZB'
or airport_name='PEN' or airport_name='KCH'
group by airport_name
order by count (*) desc;
```

```
select airport_name, COUNT(*)from flight_status
group by airport_name
order by count (*) desc;
```

	AIRPORT_NAME	COUNT(*)
1	KUL	20
2	SZB	8
3	KCH	2
4	PEN	2
5	BKI	2

	AIRPORT_NAME	COUNT(*)
1	JFK	25
2	KUL	20
3	SZB	8
4	PEN	2
5	BKI	2
6	KCH	2

THANK YOU