

Planes, Producers, Airlines

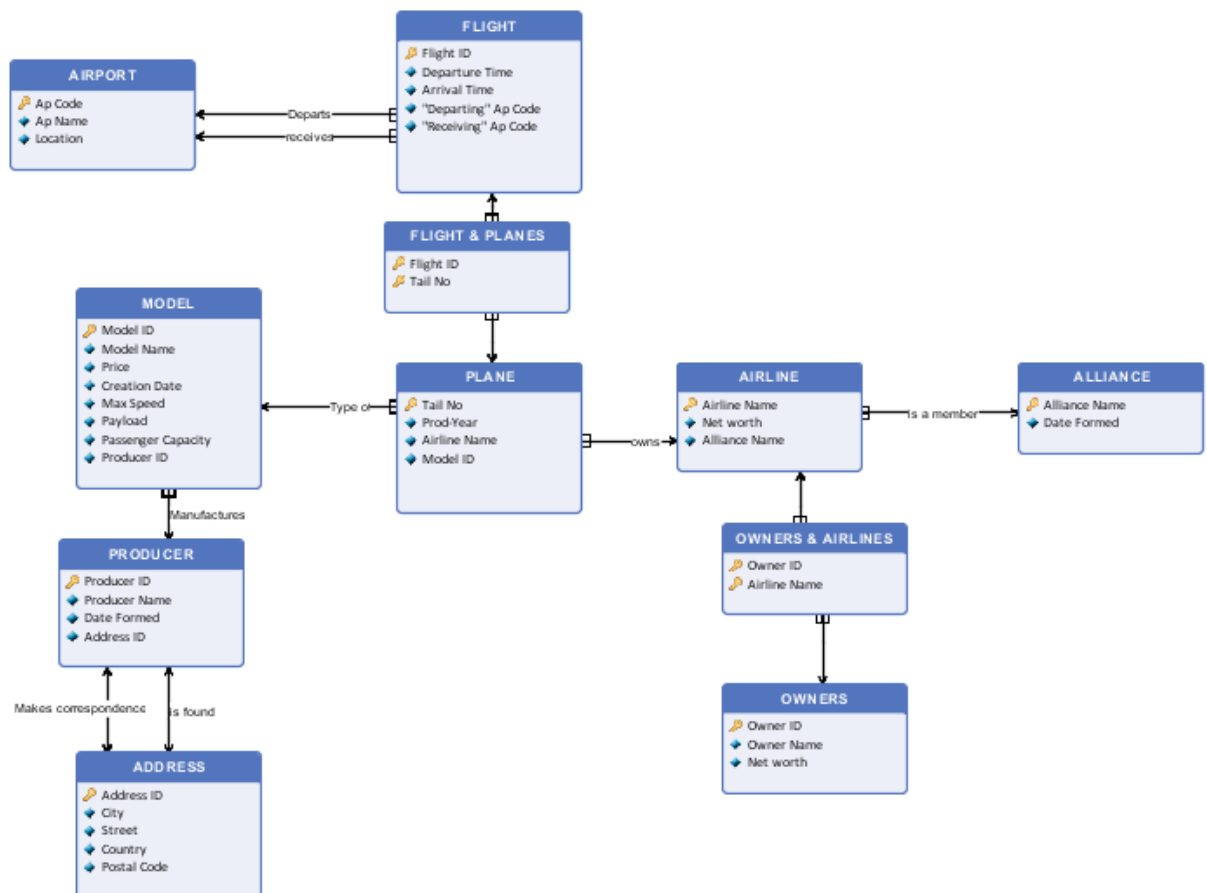
1. Krótki opis bazy danych

Client - A plane/flight and airline tracking system

Purpose- Storing and searching for information about planes, producers and airplanes

User- Plane and airline enthusiasts

2. Schemat graficzny bazy danych (diagram ERD)



3. Treść zapytań SELECT

Contains: **JOIN, GROUP BY, COUNT**

```
-- Check for airlines in said alliances that have planes made by a specific producer
-- and list the number of planes
SELECT AIRLINE.AirlineName, ALLIANCE.AllianceName, PRODUCER.ProducerName, MODEL.ModelID, COUNT(MODEL.ModelID) AS 'Number'
FROM AIRLINE JOIN ALLIANCE
ON AIRLINE.AllianceName = ALLIANCE.AllianceName
JOIN PLANE
ON PLANE.AirlineName = AIRLINE.AirlineName
JOIN MODEL
ON MODEL.ModelID = PLANE.ModelID
JOIN PRODUCER
ON PRODUCER.ProducerID = MODEL.ProducerID
GROUP BY AIRLINE.AirlineName, ALLIANCE.AllianceName, PRODUCER.ProducerName, MODEL.ModelID
HAVING ProducerName = 'Boeing' AND ALLIANCE.AllianceName IN('SkyTeam', 'OneWorld')
```

	AirlineName	AllianceName	ProducerName	ModelID	Number
1	British Airways	OneWorld	Boeing	777-200	2
2	Kenya Airways	SkyTeam	Boeing	777-200	1
3	Kenya Airways	SkyTeam	Boeing	777-300	1

Contains: **JOIN, ORDER BY**

I decided to display only 2 models even though in the original question it required 10 models, and I don't have as many models of planes flying to one city

```
-- Displays 2 plane model ID's of planes that landed in Nairobi
SELECT TOP 2 ModelID, FLIGHT.FlightID, PLANE.TailNo, PLANE.AirlineName,
A1.AirportLocation AS 'From', A2.AirportLocation AS 'To'
FROM FLIGHT JOIN FLIGHT_AND_PLANES
ON FLIGHT.FlightID = FLIGHT_AND_PLANES.FlightID
JOIN PLANE
ON FLIGHT_AND_PLANES.TailNo = PLANE.TailNo
JOIN AIRPORT A1
ON A1.AirportCode = FLIGHT.DepartingApCode
JOIN AIRPORT A2
ON A2.AirportCode = FLIGHT.ReceivingApCode
WHERE A2.AirportLocation = 'Nairobi'
ORDER BY ModelID
```

	ModelID	FlightID	TailNo	AirlineName	From	To
1	777-200	BA 4321	7B-BAW	British Airways	London	Nairobi
2	777-200	KQ 7964	7K-KYA	Kenya Airways	Dubai	Nairobi

Contains: **JOIN**

```
--3 Check address of a producer of a plane with a specific tail number
SELECT PLANE.AirlineName, PLANE.TailNo, MODEL.ModelID, PRODUCER.AddressID, ADDRESSES.Street, ADDRESSES.City, ADDRESSES.Country, ADDRESSES.PostalCode
FROM PLANE
JOIN MODEL
ON PLANE.ModelID = MODEL.ModelID
JOIN PRODUCER
ON PRODUCER.ProducerID = MODEL.ProducerID
JOIN ADDRESSES
ON ADDRESSES.AddressID = PRODUCER.AddressID
WHERE PLANE.TailNo='7B-BAW'
```

	AirlineName	TailNo	ModelID	AddressID	Street	City	Country	PostalCode
1	British Airways	7B-BAW	777-200	3	100 North Riverside Plaza	Chicago	United States of America	60-606

Contains: **GROUP BY, COUNT, ORDER BY**

```
--1 ordered list of plane models owned by airlines in an alliance
SELECT AIRLINE.AirlineName, AIRLINE.AllianceName, PLANE.ModelID, COUNT(PLANE.ModelID) AS 'Number'
FROM AIRLINE, PLANE
WHERE PLANE.AirlineName = AIRLINE.AirlineName AND AIRLINE.AllianceName='OneWorld'
GROUP BY AIRLINE.AirlineName, AIRLINE.AllianceName, PLANE.ModelID
ORDER BY Number DESC
```

	AirlineName	AllianceName	ModelID	Number
1	British Airways	OneWorld	777-200	2
2	Qatar Airways	OneWorld	CRJ-1000	1
3	Qantas Airways	OneWorld	King Air 350	1

Contains: **GROUP BY, COUNT, ORDER BY**

```
--3 Give the name and count of the owner whose airlines collectively have the highest number of planes.
SELECT TOP 1 OWNERS.OwnerName, COUNT(PLANE.ModelID) AS 'Number of planes'
FROM OWNERS, OWNERS_AND_AIRLINES, AIRLINE, PLANE
WHERE OWNERS_AND_AIRLINES.OwnerID=OWNERS.OwnerID
AND OWNERS_AND_AIRLINES.AirlineName = AIRLINE.AirlineName
AND PLANE.AirlineName = AIRLINE.AirlineName
GROUP BY OWNERS.OwnerName
ORDER BY 'Number of planes' DESC
```

Results Messages		
	OwnerName	Number of planes
1	Blackrock, Inc	13

Contains: **SUBQUERIES**

```
--Subqueries
--Shows details of owner who has a stake in all Airlines
SELECT *
FROM OWNERS
WHERE NOT EXISTS
    (SELECT *
     FROM AIRLINE
     WHERE NOT EXISTS
        (SELECT *
         FROM OWNERS_AND_AIRLINES
         WHERE OWNERS.OwnerID = OWNERS_AND_AIRLINES.OwnerID
           AND AIRLINE.AirlineName = OWNERS_AND_AIRLINES.AirlineName))
```

Results Messages			
	OwnerID	OwnerName	NetWorth
1	2	Blackrock, Inc	9000000000000

Contains: **SUBQUERY**

```
--Show Owner ID who have stakes in more than one airline and said Airlines
SELECT DISTINCT OWN.OwnerID,OWN.AirlineName
FROM OWNERS_AND_AIRLINES OWN
WHERE EXISTS
    (SELECT *
     FROM OWNERS_AND_AIRLINES OWN2
     WHERE OWN.OwnerID = OWN2.OwnerID AND OWN.AirlineName <> OWN2.AirlineName)
```

Results Messages		
	OwnerID	AirlineName
1	1	Delta Airlines
2	1	Kenya Airways
3	2	Air Canada
4	2	British Airways
5	2	China Airlines
6	2	Delta Airlines
7	2	Ethiopian Airlines
8	2	Kenya Airways
9	2	KLM Royal Dutch Airlines
10	2	LOT Polish Airlines
11	2	Mama Airline
12	2	Qantas Airways
13	2	Qatar Airways
14	2	Singapore Airlines

Contains: **SUBQUERY, GROUP BY, SUM, ORDER BY**

```
--Show data of Producers with models whose value is greater than 1000000
SELECT PRODUCER.ProducerID,PRODUCER.ProducerName,PRODUCER.DateFormed
FROM PRODUCER
WHERE PRODUCER.ProducerID IN
(SELECT ProducerID
FROM MODEL
GROUP BY ProducerID
HAVING SUM(Price)>1000000)
ORDER BY ProducerName
```

Results Messages			
	ProducerID	ProducerName	DateFormed
1	2	Airbus	1970-12-18
2	4	Beechcraft	1932-01-01
3	1	Boeing	1916-07-15
4	3	Bombardier	1942-06-10
5	5	Cessna	1927-01-01
6	8	Comac	2008-05-11
7	7	Embraer	1969-08-19
8	9	Mitsubishi Aircraft Cooperation	2008-04-01
9	6	United Aircraft Corporation	2006-02-25

VIEW

--View consisting of Model ID and Name, Airline Name, Alliance Name And Plane Tail Num

```
CREATE VIEW [ModAirAllJoined]
(TNo,ModID,ModName,AirName,AllName)
AS SELECT PLANE.TailNo,MODEL.ModelID,MODEL.ModelName,
AIRLINE.AirlineName,AIRLINE.AllianceName
FROM MODEL, AIRLINE,PLANE
WHERE MODEL.ModelID = PLANE.ModelID AND PLANE.AirlineName = AIRLINE.AirlineName
WITH CHECK OPTION
```

--User wants to see all flights departing between a set time frame from a specific airport

```
SELECT A1.AirportName AS 'Departing Airport',A2.AirportName AS 'Receiving Airport',FLIGHT_AND_PLANES.FlightID,
FLIGHT.DepartureTime,Tno AS 'Tail Num',ModID,ModName AS 'Model Name',AirName AS 'AIRLINE',AllName AS 'ALLIANCE'
FROM ModAirAllJoined --VIEW
JOIN FLIGHT_AND_PLANES
ON FLIGHT_AND_PLANES.TailNo = Tno
JOIN FLIGHT
ON FLIGHT.FlightID = FLIGHT_AND_PLANES.FlightID
JOIN AIRPORT A1
ON A1.AirportCode = FLIGHT.DepartingApCode
JOIN AIRPORT A2
ON A2.AirportCode = FLIGHT.ReceivingApCode
WHERE A1.AirportCode='OMDB' AND FLIGHT.DepartureTime BETWEEN '12:00:00' AND '16:00:00'
```

100 %

Results Messages

	Departing Airport	Receiving Airport	FlightID	DepartureTime	Tail Num	ModID	Model Name	AIRLINE	ALLIANCE
1	Dubai International Airport	Singapore Changi Airport	QA 8663	14:15:17.0000000	3Q-QAA	CRJ-1000	Bombardier CRJ-1000	Qatar Airways	OneWorld
2	Dubai International Airport	Warsaw Chopin Airport	PL 7681	13:08:52.0000000	4P-LOT	7195-72	Embraer 7195-72	LOT Polish Airlines	Star Alliance
3	Dubai International Airport	Arturo Merino Benítez International Airport	AC 5223	15:15:48.0000000	7B-AAC	777-300	Boeing 777-300	Air Canada	Star Alliance
4	Dubai International Airport	Jomo Kenyatta International Airport	KQ 7964	12:45:34.0000000	7K-KYA	777-200	Boeing 777-200	Kenya Airways	SkyTeam