



AIRLINES PROJECT

INTRODUCTION TO DATA & SQL

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CONTENT OF AIRLINES DATABASE



```
CREATE DATABASE Airlines;  
USE Airlines;
```

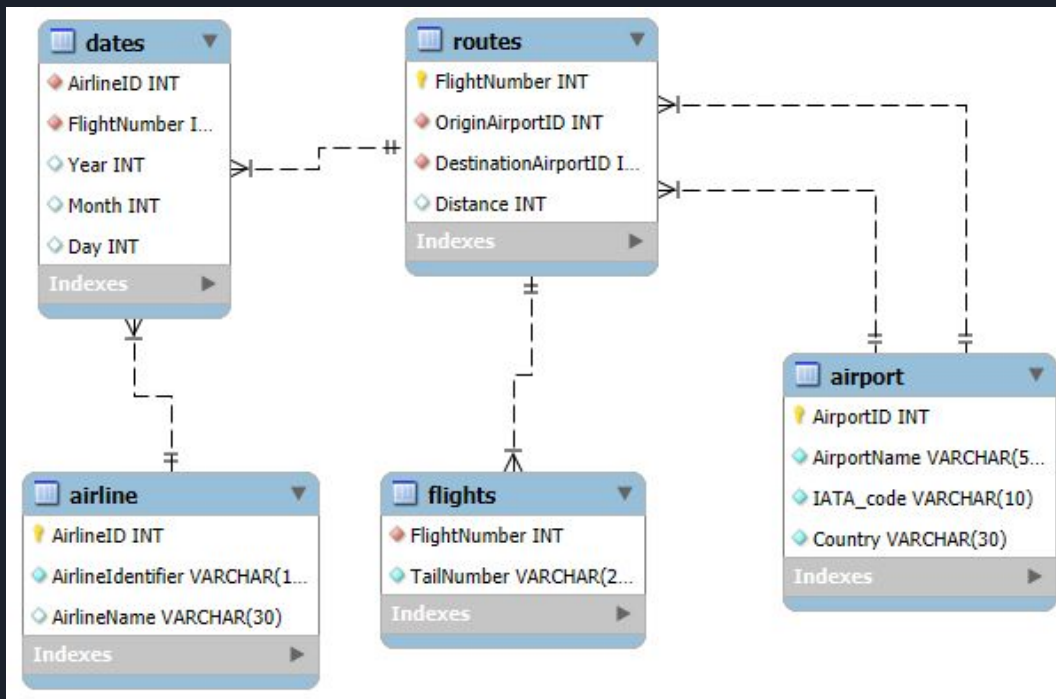
TABLES:

1. AIRLINE
2. AIRPORT
3. DATES
4. FLIGHTS
5. ROUTES

```
CREATE TABLE Routes (  
    FlightNumber INT PRIMARY KEY,  
    OriginAirportID INT NOT NULL,  
    DestinationAirportID INT NOT NULL,  
    Distance INT,  
    CONSTRAINT fk_origin FOREIGN KEY (OriginAirportID)  
        REFERENCES Airport (AirportID),  
    CONSTRAINT fk_destination FOREIGN KEY (DestinationAirportID)  
        REFERENCES Airport (AirportID)  
);
```

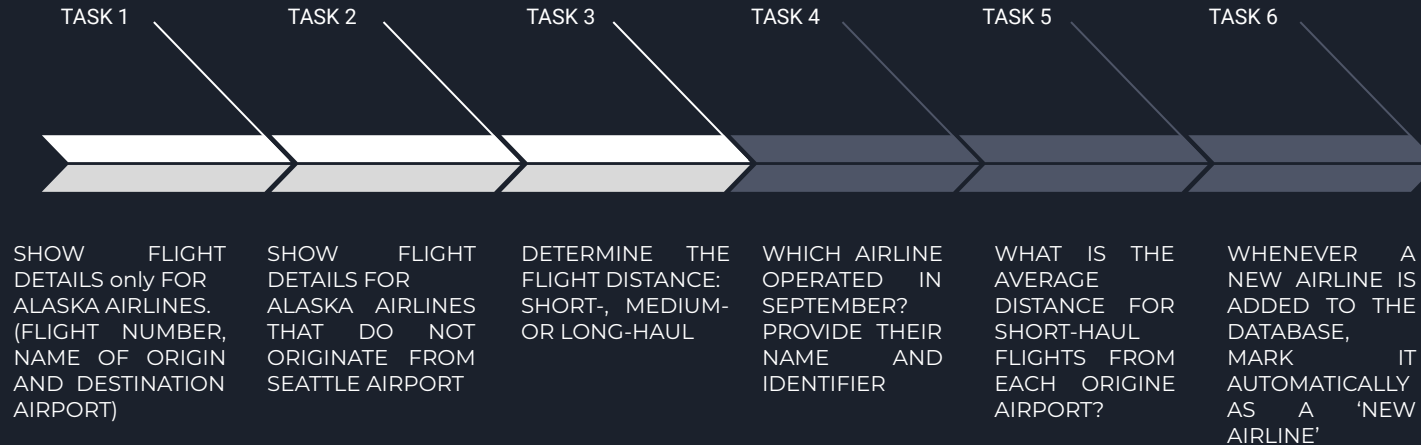
```
INSERT INTO Airline (  
    AirlineID, AirlineIdentifier, AirlineName)  
VALUES  
    (1, 'AS', 'Alaska Airlines'),  
    (2, 'AA', 'American Airlines'),
```

TABLES RELATIONS





QUESTIONS TO BE ANSWERED



SHOW FLIGHT DETAILS FOR ALASKA AIRLINES ONLY

FLIGHT NUMBER, NAME OF ORIGIN AND DESTINATION AIRPORT

```
CREATE VIEW Alaska_Airline_view AS
SELECT ae.AirlineName, ds.FlightNumber, at.AirportName AS OriginAirport, at1.AirportName AS DestinationAirport
FROM Airline ae
JOIN Dates ds
ON ae.AirlineID = ds.AirlineID
LEFT JOIN Routes rs
ON ds.FlightNumber = rs.FlightNumber
LEFT JOIN Airport at
ON rs.OriginAirportID = at.AirportID
LEFT JOIN Airport at1
ON rs.DestinationAirportID = at1.AirportID
WHERE ae.AirlineName LIKE 'Alaska Airlines';
```

AirlineName	FlightNumber	OriginAirport	DestinationAirport
Alaska Airlines	98	Ted Stevens Anchorage International Airport	Seattle-Tacoma International Airport
Alaska Airlines	135	Seattle-Tacoma International Airport	Ted Stevens Anchorage International Airport
Alaska Airlines	1674	Harry Reid International Airport	Miami International Airport
Alaska Airlines	108	Ted Stevens Anchorage International Airport	Seattle-Tacoma International Airport



SHOW FLIGHT DETAILS FOR ALASKA AIRLINES THAT DO NOT ORIGINATE FROM SEATTLE AIRPORT

```
SELECT * FROM Alaska_Airline_view  
WHERE OriginAirport != 'Seattle-Tacoma International Airport';
```

AirlineName	FlightNumber	OriginAirport	DestinationAirport
Alaska Airlines	98	Ted Stevens Anchorage International Airport	Seattle-Tacoma International Airport
Alaska Airlines	1674	Harry Reid International Airport	Miami International Airport
Alaska Airlines	108	Ted Stevens Anchorage International Airport	Seattle-Tacoma International Airport

DETERMINE THE FLIGHT DISTANCE SHORT-, MEDIUM- OR LONG-HAUL

```
SET DELIMITER //
```

```
DELIMITER //
```

```
CREATE FUNCTION declare_type (distance INT)  
RETURNS VARCHAR(20)  
DETERMINISTIC  
BEGIN  
  DECLARE haul_type VARCHAR(20);  
  IF distance < 1500 THEN  
    SET haul_type = 'Short-haul';  
  ELSEIF (distance >= 1500 AND distance < 3500) THEN  
    SET haul_type = 'Medium-haul';  
  ELSEIF distance >= 3500 THEN  
    SET haul_type = 'Long-haul';  
  END IF;  
  RETURN (haul_type);  
END//distance  
DELIMITER ;
```

flighnumber	Flight_length
98	Short-haul
108	Short-haul
115	Medium-haul
122	Medium-haul
135	Short-haul
214	Short-haul
258	Medium-haul
371	Medium-haul
520	Short-haul
612	Short-haul
806	Medium-haul
840	Medium-haul
1112	Short-haul
1173	Medium-haul
1197	Medium-haul
1434	Medium-haul



QUESTION 4

WHICH AIRLINE OPERATED IN SEPTEMBER?

PROVIDE THEIR NAME AND IDENTIFIER

```
SELECT ae.AirlineID, ae.AirlineIdentifier, ae.AirlineName
FROM airline ae
WHERE ae.AirlineID IN (
    SELECT ds.AirlineID
    FROM dates ds
    WHERE ds.Month = 9);
```

AirlineID	AirlineIdentifier	AirlineName
10	EV	ExpressJet
9	HA	Hawaiian Airlines



WHAT IS THE AVERAGE DISTANCE FOR SHORT-HAUL FLIGHTS FROM EACH ORIGIN AIRPORT?

```
SELECT OriginAirportID, ROUND(AVG(Distance), 0) AS Avgerage_flight_distance
FROM routes
GROUP BY OriginAirportID
HAVING Avgerage_flight_distance < 1500
ORDER BY Avgerage_flight_distance;
```

OriginAirportID	Avgerage_flight_distance
37	1426
21	1448
29	1483
35	1495

WHENEVER A NEW AIRLINE IS ADDED TO THE DATABASE, MARK IT AUTOMATICALLY AS A 'NEW AIRLINE'

```
ALTER TABLE airline
ADD COLUMN Status VARCHAR(20) AFTER AirlineName;

CREATE TRIGGER before_airline_insert
BEFORE INSERT ON airline
FOR EACH ROW
SET NEW.status = 'New airline';

INSERT INTO airline
VALUES (11, 'MQ', 'American Eagle Airlines', NULL);
```

BEFORE:

AirlineID	AirlineIdentifier	AirlineName	Status
1	AS	Alaska Airlines	NULL
2	AA	American Airlines	NULL
3	US	US Airways	NULL
4	DL	Delta Air Lines	NULL
5	NK	Spirit Airlines	NULL
6	UA	United Airlines	NULL
7	B6	JetBlue	NULL
8	OO	SkyWest Airlines	NULL
9	HA	Hawaiian Airlines	NULL
10	EV	ExpressJet	NULL

AFTER:

AirlineID	AirlineIdentifier	AirlineName	Status
1	AS	Alaska Airlines	NULL
2	AA	American Airlines	NULL
3	US	US Airways	NULL
4	DL	Delta Air Lines	NULL
5	NK	Spirit Airlines	NULL
6	UA	United Airlines	NULL
7	B6	JetBlue	NULL
8	OO	SkyWest Airlines	NULL
9	HA	Hawaiian Airlines	NULL
10	EV	ExpressJet	NULL
11	MQ	American Eagle ...	New airline



THANK YOU

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