SQL Project

Objective:
Air Cargo is an aviation company that provides air transportation services for passengers and freight.

Problem Statement:

Prepare reports on regular passengers, busiest routes, ticket sales details, and other scenarios to improve the ease of travel and booking for customers.

Identify the regular customers to provide offers, analyze the busiest route which helps to increase the number of aircraft required and prepare an analysis to determine the ticket sales details. This will ensure that the company improves its operability and becomes more customer-centric and a favorable choice for air travel.

1. Query to create table for customer details.

```
Creating Tables
create table A_Customer
(c_id int,
first_name varchar(20),
last_name varchar(20),
DOB date,
gender varchar(1));
```

2. Query to create table for booking details.

```
Create table ticket_details
(P_date date,
Customer_id int,
Aircraft_id varchar(20),
class_id(20),
No_of _tickets int,
A-code varchar(10),
Price_per_ticket int,
Brand varchar(10));
```

3. Query to create table for route detail

```
Create table route_details
(route_id int,
Flight_num int,
origin _airport varchar(10),
Destination_airport varchar(20),
Aircraft_id varchar(20),
Distance_miles int);
```

4. Query to create route_details

```
Create table route_detail
(route_id int not null,
Flight_num int,
Origin_airport varchar(20) not null,
destination _airport varchar(20)
Aircraft_id varchar(20),
Distance_miles int check (distance_miles> 0),
Constraint flight_num unique (route_id));
```

5. Query to display all the passengers (customers) who have travelled in routes 01 to 25. Take data from the passengers_on_flights table

```
Select customer_id from paasengers_on_flights
Where route_id<= 25;
```

6. Query to identify the number of passengers and total revenue in business class from the ticket_details table

```
Select count(customer_id) as total_count, sum(price_per_ticket)
as total revenue from ticket_details;
```

7. Query to display the full name of the customer by extracting the first name and last name from the customer table

```
Select concat(first_name, ' ', last_name) as full_name from customers;
```

8. Query to extract the customers who have registered and booked a ticket. Use data from the customer and ticket_details tables

```
Select customer_id, no_of_tickets from tickets_details
Order by customer_id asc;
```

9. Query to identify the customer's first name and last name based on their customer ID and brand (Emirates) from the ticket_details table

```
Select customer_id
From passengers_on_flights
Where class_id
Having count(*) >= 1;
```

10. Query to identify the customers who have travelled by Economy Plus class using Group By and Having clause on the passengers_on_flights table

```
Select customer_id, class_id
From passengers_on_flights
Where class_id= "Economy Plus"
Group by customer_id;
```

11. Query to identify whether the revenue has crossed 10000 using the IF clause on the ticket_details table

```
Select sum(price_per_ticket) as revenue, if(sum(price_per_ticket)> 1000, 'Yes', 'No') from
ticket_details;
```

12. Query to find the maximum ticket price for each class using window functions on the ticket_details table

```
Select class_id, max(price_per_ticket) as max_price
From ticket_details
Group by class_id;
```

13. Query to extract the passengers whose route ID is 4 by improving the speed and performance of the passengers_on_flights table

```
Select customer_id, route_id from passengers_on_flights
Where route_id= '4';
```

14. Query to view the execution plan of the passengers_on_flights table

```
Select customer_id, route_id from passengers_on_flights
Where route_id= '4';
```

15. Query to calculate the total price of all tickets booked by a customer across different aircraft IDs using rollup function

```
Select customer-id, aircraft_id, sum(price_per_ticker) as total_price from ticket_details
Where customer_id
Group by customer_id, aircraft_id with rollup;
```

16. Query to create a view with only business class customers along with the brand of airlines

```
Select customer_id, class_id from ticket_details
Where class_id= “Business”;
```

17. Query to create a stored procedure to get the details of all passengers flying between a range of routes defined in run time. Also, return an error message if the table doesn't exist

```
Delimiter &&
Create procedure get_all_passengerdetails()
Begin
Select * from passengers_on_flight
Where route_id= “1’;
END &&

Call get_all_passengerdetails();
```

18. Query to create a stored procedure that extracts all the details from the routes table where the travelled distance is more than 2000 miles

```
Create procedure get_all_route_id()
Begin
Select distance_miles> “2000”;
END &&

Call get_all_route_id();
```

19. Query to create a stored procedure that groups the distance travelled by each flight into three categories. The categories are, short distance travel (SDT) for >=0 AND <= 2000 miles, intermediate distance travel (IDT) for >2000 AND <=6500, and long-distance travel (LDT) for >6500

```
Delimiter &&
Create procedure groupflightsbydistance()
Begin
Select
Flight_number,
Distance_miles,
Case
When distance_miles>= 0 AND distance <= 2000 then ‘SDT’
When distance_miles> 2000 AND distance ,= 6500 then ‘IDT’
When dustance_miles> 6500 then ‘LDT’
```

```
End as distanceCategory
From route_detail
Group by flight_number, distance_miles, distance_miles ;
END &&

Call groupflightbydistance();
```

20. Query to extract the first record of the customer whose last name ends with Scott using a cursor from the customer table.

```
Begin declare a varchar(150);
Declare b varchar(150); declare cursor_1 cursor for select
Customer_id, last_name from customer
Where last_name like'%Scott';
Open cursor_1;
Repeat fetch cursor_1 into a,b;
Until b= 0 end repeat;
Select a as cuatomer_id, b as name;
Close curor_1; end;
$$ Delimiter; call get_services();
```

Analysis:

Different tasks were performed to analyze the sales details. After performing the tasks, we have realized that the customers prepare to travel more in Economy>Business>First Class>Economy Plus.
Economy for lowest price.
Economy Plus is 2nd lowest.
First Class is 3rd lowest price.
Business is the highest price.

Customers prefer to travel by Emirates and Qatar Airways mostly. The lowest booking is for British Airways. The busiest route is 15 route_details CAK and ANI,
Route 4 JFK and LAX.

Few pointers to be considered to boost the customer engagement and more bookings.

- Provide best deal of the month/round trip/seasonal/festive/holiday detination discounts.
- Provide discounts to Senior citizens/students/Vetereans/ Doctor & Nurses.
- Provide a decidated customer support team 24*7 for better service.
- Offer travel insurance, access to business lounges based on the points they have accumulated on their travelling card both for members and non members.
- Value added service such as early check-in.
- Tracking and reviewing hospitality services on monthly basis. Ask customer for feedback, improvise based on the reviews provided by customers.
- Target B2B partnerships with companies for more business bookings.
- Onboard local and professional vendors for partnership for booking flights.

- Marketing- Promotions through different Social media platforms. Magazine sales. Website promotions, affiliate marketing, messaging/emailing customers on monthly basis, advertisements, billboard promotions near airports, business parks, public places, and more.