Project Summary of Air Cargo SQL Analysis

1. **Create an ER Diagram:**
    - Design an entity-relationship diagram to show the relationships between database entities like Customer, Passengers_on_flights, Ticket_details, and Routes.
2. **Create the route_details table:**
    - Create a table to store route details, ensuring constraints like unique route_id, a check on flight_num format, and distance_miles being greater than zero.
3. **Display passengers on routes 01 to 25:**
    - Retrieve passengers who traveled on routes with IDs between 1 and 25 from the passengers_on_flights table.
4. **Identify passengers and total revenue in business class:**
    - Count business class passengers and calculate the total revenue generated by them using the ticket_details table.
5. **Display customer full name:**
    - Show the full name of customers by concatenating their first and last names from the customer table.
6. **Extract customers who registered and booked a ticket:**
    - Identify customers who are both registered and have booked a ticket by joining the customer and ticket_details tables.
7. **Identify customers based on customer ID and airline brand (Emirates):**
    - Retrieve the names of customers who booked tickets with the brand 'Emirates'.
8. **Identify customers who traveled by Economy Plus class:**
    - Use GROUP BY and HAVING clauses to find customers who traveled in the "Economy Plus" class.
9. **Check if total revenue has crossed 10,000:**
    - Use an IF clause to check whether the total revenue has exceeded 10,000.
10. **Create and grant access to a new user:**
    - Create a new user in the database and grant them permissions to perform operations.

11. **Find the maximum ticket price for each class using window functions:**
    - Use a window function to find the highest ticket price in each class.
12. **Optimize query for passengers whose route ID is 4:**
    - Create an index on route_id to improve the performance of queries retrieving passengers from route ID 4.
13. **View the execution plan for passengers on route 4:**
    - Use the EXPLAIN statement to analyze the query plan for retrieving passengers from route ID 4.
14. **Calculate total price of tickets booked using ROLLUP:**
    - Use the ROLLUP function to compute the total price of tickets booked by each customer across different aircraft IDs, including subtotals.
15. **Create a view for business class customers and airline brand:**
    - Create a view that displays only business class customers and their associated airline brand.
16. **Stored procedure for passengers flying between a range of routes:**
    - Create a stored procedure to retrieve passengers traveling within a user-specified range of route IDs, with error handling for missing tables**.**
17. **Stored procedure for routes over 2000 miles:**
    - Create a stored procedure to extract all routes where the distance is over 2000 miles.
18. **Stored procedure to categorize distances:**
    - Categorize flight routes into short, intermediate, and long-distance travel based on miles using a stored procedure.
19. **Stored function to specify complimentary services for specific classes:**
    - Create a stored function to check if complimentary services are provided for Business and Economy Plus classes, and use it in a stored procedure to display ticket details.
20. **Use a cursor to fetch the first customer whose last name ends with "Scott":**
    - Use a cursor to retrieve the first customer whose last name ends with "Scott" from the customer table.