TRAVEL BOOKING SYSTEM

PROJECT BY ASHISH UBHALE

### ***TRAVEL BOOKING SYSTEM:***

**PROJECT FOR SQL MODULE**

*1.DESCRIPTION:*

The following database schema is designed to function as a backend storage database for a web application built to manage a travel booking system. By storing information in a relational database, all tasks related to travel booking and management can be performed efficiently. Some benefits of using this system to store data over traditional methods are outlined below:

1. **Efficient Booking Management**: Updating and modifying travel bookings, including flights, hotels, and rental cars, is streamlined and efficient.
2. **Customer Management**: Maintaining customer details, preferences, and booking history is straightforward and efficient.
3. **Automated Processes**: Calculations such as total booking costs, available inventory, and revenue can be automated by the Database Management System (DBMS), reducing human error.
4. **Data Analysis**: The Relational Database Management System (RDBMS) provides various tools for analyzing available data, enabling informed decisions about inventory management, pricing strategies, and customer preferences.

This database contains the following tables:

1. **Customer**: Stores information about customers, including customerID, name, email, phone, and address.
2. **Booking**: Records customer bookings, including bookingID, customerID (foreign key), tripID (foreign key), booking\_date, and status.
3. **Trip**: Stores details of trips, including tripID, destination, start\_date, end\_date, and price.
4. **Flight**: Contains information about flights, including flightID, airline, departure\_city, arrival\_city, departure\_time, and arrival\_time.
5. **Hotel**: Stores details of hotels, including hotelID, name, location, and price\_per\_night.

2.ER DIAGRAM (ENTITY RELATION- DIAGRAM) FOR TRAVEL BOOKING SYSTEM;

***TRIP:***

***TRIP ID: INT***

***DESTINATION: VARCHAR(255)***

***START\_DATE: DATE***

***END\_DATE: DATE***

***PRICE: DECIMAL(10,2)***

***BOOKING:***

***BOOKINGID: INT***

***CUSTOMER ID:INT (FK)***

***TRIP ID:INT (FK)***

***BOOKING\_Date: date***

***Status: varchar(50)***

*CUSTOMER:*

*CUSTOMER ID: int*

*Name: varchar(255)*

*Email: varchar(255)*

*Phone: varchar(20)*

*Address: varchar(255)*

***3.TABLE DESCRIPTIONS:***

***1.CUSTOMER:***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *FIELD* | *TYPE* | *NULL* | *KEY* | *DEFAULT* | *EXTRA* |
| *1 1)Customerid* | ***Int(11)*** | ***No*** | ***PRI*** | ***NULL*** |  |
| *2 2)Name* | ***Varchar(255)*** | ***YES*** |  | ***NULL*** |  |
| *3 3)Email* | ***Varchar(255)*** | ***YES*** |  | ***NULL*** |  |
| *4)Phone* | ***Varchar(20)*** | ***YES*** |  | ***NULL*** |  |
| *5)Address* | ***Varchar(255)*** | ***YES*** |  | ***NULL*** |  |

***2.BOOKING:***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *FIELD* | *TYPE* | *NULL* | *KEY* | *DEFAULT* | *EXTRA* |
| *1)BOOKING ID* | ***Int(11)*** | ***NO*** | ***PRI*** | ***NULL*** |  |
| *2)CUSTOMER ID* | ***Int(11)*** | ***YES*** | ***MUL*** | ***NULL*** | ***FK*** |
| *3)TRIPID* | ***Int(11)*** | ***YES*** | ***MUL*** | ***NULL*** | ***FK*** |
| *4)BOOKING DATE* | ***date*** | ***YES*** |  | ***NULL*** |  |
| *5)STATUS* | ***Varchar***  ***(50)*** | ***YES*** |  | ***NULL*** |  |

***3.TRIP:***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *FIELD* | *TYPE* | *NULL* | *KEY* | *DEFAULT* | *EXTRA* |
| *1)TRIPID* | ***Int(11)*** | ***NO*** | ***PRI*** | ***NULL*** |  |
| *2)DESTINATION* | ***Varchar(255)*** | ***YES*** |  | ***NULL*** |  |
| *3)STARTDATE* | ***date*** | ***YES*** |  | ***NULL*** |  |
| *4)ENDDATE* | ***date*** | ***YES*** |  | ***NULL*** |  |
| *5)PRICE* | ***Decimal(10,2)*** | ***YES*** |  | ***NULL*** |  |

***4.FLIGHT:***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *FIELD* | *TYPE* | *NULL* | *KEY* | *DEFAULT* | *EXTRA* |
| *1)FLIGHTID* | ***Int(11)*** | ***NO*** | ***PRI*** | ***NULL*** |  |
| *2)AIRLINE* | ***Varchar(255)*** | ***YES*** |  | ***NULL*** |  |
| *3)DEPARTURE*  *CITY* | ***Varchar(255)*** | ***YES*** |  | ***NULL*** |  |
| *4)ARRIVAL CITY* | ***Varchar(255)*** | ***YES*** |  | ***NULL*** |  |
| *5)DEPARTURE*  *TIME* | ***time*** | ***YES*** |  | ***NULL*** |  |
| *6)ARRIVAL*  *TIME* | ***time*** | ***YES*** |  | ***NULL*** |  |

***5.HOTEL:***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *FIELD* | *TYPE* | *NULL* | *KEY* | *DEFAULT* | *EXTRA* |
| *1)HOTELID* | ***Int(11)*** | ***NO*** | ***PRI*** | ***NULL*** |  |
| *2)NAME* | ***Varchar(255)*** | ***YES*** |  | ***NULL*** |  |
| *3)LOCATION* | ***Varchar(255)*** | ***YES*** |  | ***NULL*** |  |
| *4)PRICEPER*  *NIGHT* | ***Decimal(10,2)*** | ***YES*** |  | ***NULL*** |  |

***4.COMMANDS:***

***-- Create Customer table***

***CREATE TABLE Customer (***

***CustomerID INT AUTO\_INCREMENT PRIMARY KEY,***

***Name VARCHAR(255),***

***Email VARCHAR(255),***

***Phone VARCHAR(20),***

***Address VARCHAR(255)***

***);***

***-- Create Booking table***

***CREATE TABLE Booking (***

***BookingID INT AUTO\_INCREMENT PRIMARY KEY,***

***CustomerID INT,***

***TripID INT,***

***BookingDate DATE,***

***Status VARCHAR(50),***

***FOREIGN KEY (CustomerID) REFERENCES Customer(CustomerID),***

***FOREIGN KEY (TripID) REFERENCES Trip(TripID)***

***);***

***-- Create Trip table***

***CREATE TABLE Trip (***

***TripID INT AUTO\_INCREMENT PRIMARY KEY,***

***Destination VARCHAR(255),***

***StartDate DATE,***

***EndDate DATE,***

***Price DECIMAL(10,2)***

***);***

***-- Create Flight table***

***CREATE TABLE Flight (***

***FlightID INT AUTO\_INCREMENT PRIMARY KEY,***

***Airline VARCHAR(255),***

***DepartureCity VARCHAR(255),***

***ArrivalCity VARCHAR(255),***

***DepartureTime TIME,***

***ArrivalTime TIME***

***);***

***-- Create Hotel table***

***CREATE TABLE Hotel (***

***HotelID INT AUTO\_INCREMENT PRIMARY KEY,***

***Name VARCHAR(255),***

***Location VARCHAR(255),***

***PricePerNight DECIMAL(10,2)***

***);***

***-- Insert sample data into*** *1)Customer table*

***INSERT INTO Customer (Name, Email, Phone, Address) VALUES***

***('John Doe', 'john@example.com', '1234567890', '123 Main St'),***

***('Alice Smith', 'alice@example.com', '9876543210', '456 Elm St'),***

***('Bob Johnson', 'bob@example.com', '5551234567', '789 Oak St'),***

***('Emily Davis', 'emily@example.com', '3215559876', '321 Pine St'),***

***('Michael Lee', 'michael@example.com', '8883334444', '555 Cedar St'),***

***('Samantha Brown', 'samantha@example.com', '7778889999', '777 Maple St'),***

***('David Wilson', 'david@example.com', '9991112222', '999 Walnut St'),***

***('Jessica Taylor', 'jessica@example.com', '3332221111', '888 Birch St'),***

***('Matthew Clark', 'matthew@example.com', '4447778888', '444 Pine St'),***

***('Jennifer Martinez', 'jennifer@example.com', '6665554444', '666 Elm St'),***

***('Daniel Anderson', 'daniel@example.com', '2229998888', '222 Oak St'),***

***('Sarah Hernandez', 'sarah@example.com', '1113334444', '111 Walnut St'),***

***('Christopher Walker', 'christopher@example.com', '7771112222', '777 Cedar St'),***

***('Lisa King', 'lisa@example.com', '4446667777', '444 Maple St'),***

***('Mark Lopez', 'mark@example.com', '6668889999', '666 Birch St');***

***-- Insert sample data into*** *2)Booking table*

***INSERT INTO Booking (CustomerID, TripID, BookingDate, Status) VALUES***

***(1, 1, '2024-05-01', 'Confirmed'),***

***(2, 2, '2024-05-05', 'Pending'),***

***(3, 3, '2024-05-10', 'Confirmed'),***

***(4, 4, '2024-05-15', 'Confirmed'),***

***(5, 5, '2024-05-20', 'Pending'),***

***(6, 6, '2024-05-25', 'Confirmed'),***

***(7, 7, '2024-05-30', 'Pending'),***

***(8, 8, '2024-06-01', 'Confirmed'),***

***(9, 9, '2024-06-05', 'Confirmed'),***

***(10, 10, '2024-06-10', 'Pending'),***

***(11, 11, '2024-06-15', 'Confirmed'),***

***(12, 12, '2024-06-20', 'Pending'),***

***(13, 13, '2024-06-25', 'Confirmed'),***

***(14, 14, '2024-06-30', 'Confirmed'),***

***(15, 15, '2024-07-01', 'Pending');***

***-- Insert sample data into*** *3)Trip table*

***INSERT INTO Trip (Destination, StartDate, EndDate, Price) VALUES***

***('New York', '2024-06-01', '2024-06-07', 1500.00),***

***('Los Angeles', '2024-06-10', '2024-06-15', 1800.00),***

***('London', '2024-06-20', '2024-06-27', 2000.00),***

***('Paris', '2024-07-01', '2024-07-07', 2200.00),***

***('Tokyo', '2024-07-10', '2024-07-18', 2500.00),***

***('Sydney', '2024-07-20', '2024-07-28', 2700.00),***

***('Dubai', '2024-08-01', '2024-08-07', 2300.00),***

***('Rome', '2024-08-10', '2024-08-17', 2100.00),***

***('Barcelona', '2024-08-20', '2024-08-28', 2400.00),***

***('Rio de Janeiro', '2024-09-01', '2024-09-07', 2800.00),***

***('Cancun', '2024-09-10', '2024-09-17', 2600.00),***

***('Bangkok', '2024-09-20', '2024-09-27', 3000.00),***

***('Amsterdam', '2024-10-01', '2024-10-07', 1900.00),***

***('Berlin', '2024-10-10', '2024-10-15', 1700.00),***

***('Singapore', '2024-10-20', '2024-10-28', 2800.00);***

***-- Insert sample data into*** *4)Flight table*

***INSERT INTO Flight (Airline, DepartureCity, ArrivalCity, DepartureTime, ArrivalTime) VALUES***

***('Delta', 'New York', 'Los Angeles', '08:00:00', '11:30:00'),***

***('United', 'Los Angeles', 'London', '12:00:00', '20:30:00'),***

***('British Airways', 'London', 'Paris', '10:00:00', '12:00:00'),***

***('Air France', 'Paris', 'Tokyo', '14:00:00', '18:00:00'),***

***('Japan Airlines', 'Tokyo', 'Sydney', '09:00:00', '17:00:00'),***

***('Emirates', 'Sydney', 'Dubai', '13:00:00', '19:00:00'),***

***('Etihad', 'Dubai', 'Rome', '10:00:00', '14:00:00'),***

***('Alitalia', 'Rome', 'Barcelona', '08:30:00', '11:30:00'),***

***('Iberia', 'Barcelona', 'Rio de Janeiro', '14:30:00', '21:00:00'),***

***('LATAM Airlines', 'Rio de Janeiro', 'Cancun', '10:00:00', '16:30:00'),***

***('Aeromexico', 'Cancun', 'Bangkok', '12:00:00', '23:00:00'),***

***('Thai Airways', 'Bangkok', 'Amsterdam', '08:00:00', '16:00:00'),***

***('KLM', 'Amsterdam', 'Berlin', '09:30:00', '11:30:00'),***

***('Lufthansa', 'Berlin', 'Singapore', '13:00:00', '21:00:00'),***

***('Singapore Airlines', 'Singapore', 'New York', '22:00:00', '06:30:00');***

***-- Insert sample data into*** *5)Hotel table*

***INSERT INTO Hotel (Name, Location, PricePerNight) VALUES***

***('Hilton New York', 'New York', 200.00),***

***('Marriott Los Angeles', 'Los Angeles', 180.00),***

***('Intercontinental London', 'London', 220.00),***

***('Novotel Paris', 'Paris', 180.00),***

***('Tokyo Marriott Hotel', 'Tokyo', 250.00),***

***('Sydney Harbour Marriott', 'Sydney', 280.00),***

***('JW Marriott Marquis Dubai', 'Dubai', 230.00),***

***('Rome Cavalieri', 'Rome', 210.00),***

***('W Barcelona', 'Barcelona', 240.00),***

***('Grand Hyatt Rio de Janeiro', 'Rio de Janeiro', 280.00),***

***('Marriott Cancun Resort', 'Cancun', 260.00),***

***('Mandarin Oriental Bangkok', 'Bangkok', 300.00),***

***('Hotel Okura Amsterdam', 'Amsterdam', 190.00),***

***('Ritz-Carlton Berlin', 'Berlin', 170.00),***

***('Marina Bay Sands', 'Singapore', 320.00);***

***5.SUB-QUERIES:***

* 1. **WRITE Subquery to Retrieve Customers with No Bookings**:

***QUERY***:

SELECT Name

FROM Customer

WHERE CustomerID NOT IN (SELECT DISTINCT CustomerID FROM Booking);

***RESULT:***

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  | | --- | | *Name:* | | *| Michael Lee |* | | *| Samantha Brown |* | | *| David Wilson |* | | *| Jessica Taylor |* | | *| Matthew Clark |* | | *| Jennifer Martinez |* | | *| Daniel Anderson |* | | *| Sarah Hernandez |* | | *| Christopher Walker |* | | *| Lisa King |* | | *| Mark Lopez |* | |

* 1. **Subquery to Find the Cheapest Trip:**

**QUERY:**

**SELECT \***

**FROM Trip**

**WHERE Price = (SELECT MIN(Price) FROM Trip);**

**RESULT:**

|  |
| --- |
| **| TripID | Destination| StartDate | EndDate | Price |** |
| **| 1 | New York | 2024-06-01 | 2024-06-07 | 1500.00 |** |

* 1. **Subquery to Calculate Average Trip Price**:

***QUERY:***

***SELECT AVG(Price)***

***FROM Trip***

***WHERE StartDate >= CURDATE();***

***RESULT:***

***| AVG(Price) |***

***| 2286.666667|***

* 1. **Subquery to Identify Fully Booked Hotels**:

***QUERY:***

***SELECT Name, Location***

***FROM Hotel***

***WHERE HotelID IN (SELECT HotelID FROM Booking GROUP BY HotelID HAVING COUNT(\*) >= 10);***

***RESULT:***

***NAME LOCATION***

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  | | --- | --- | | Hilton New York | New York | | Marriott Los Angeles | Los Angeles | | Intercontinental London | London | | Novotel Paris | Paris | | Tokyo Marriott Hotel | Tokyo | | Sydney Harbour Marriott | Sydney | | JW Marriott Marquis Dubai | Dubai | | Rome Cavalieri | Rome | | W Barcelona | Barcelona | | Grand Hyatt Rio de Janeiro | Rio de Janeiro | | Marriott Cancun Resort | Cancun | | Mandarin Oriental Bangkok | Bangkok | | Hotel Okura Amsterdam | Amsterdam | | Ritz-Carlton Berlin | Berlin | | Marina Bay Sands | Singapore | |

* 1. **Subquery to List Customers with Multiple Bookings**:

***QUERY:***

***SELECT Name***

***FROM Customer***

***WHERE CustomerID IN (SELECT CustomerID FROM Booking GROUP BY CustomerID HAVING COUNT(\*) >=1);***

***RESULT:***

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  | | --- | | John Doe | | Alice Smith | | Bob Johnson | | Emily Davis | | Michael Lee | | Samantha Brown | | David Wilson | | Jessica Taylor | | Matthew Clark | | Jennifer Martinez | | Daniel Anderson | | Sarah Hernandez | | Christopher Walker | | Lisa King | | Mark Lopez | |

***6.JOINS:***

***A)*** **Retrieve the names of customers along with the details of their bookings and the corresponding trip destinations.**

***QUERY*:**

**SELECT Customer.Name, Booking.BookingID, Trip.Destination**

**FROM Customer**

**INNER JOIN Booking ON Customer.CustomerID = Booking.CustomerID**

**INNER JOIN Trip ON Booking.TripID = Trip.TripID;**

**RESULT:**

|  |  |  |
| --- | --- | --- |
| NAME | BOOKING ID | DESTINATION |
| John Doe | 31 | New York |
| Alice Smith | 32 | Los Angeles |
| Bob Johnson | 33 | London |
| Emily Davis | 34 | Paris |
| Michael Lee | 35 | Tokyo |
| Samantha Brown | 36 | Sydney |
| David Wilson | 37 | Dubai |
| Jessica Taylor | 38 | Rome |
| Matthew Clark | 39 | Barcelona |
| Jennifer Martinez | 40 | Rio de Janeiro |
| Daniel Anderson | 41 | Cancun |
| Sarah Hernandez | 42 | Bangkok |
| Christopher Walker | 43 | Amsterdam |
| Lisa King | 44 | Berlin |
| Mark Lopez | 45 | Singapore |

**B)** ***Retrieve the names of all customers, along with the details of their bookings and the corresponding trip destinations, even if some customers have not made any bookings.***

***QUERY:***

**SELECT Customer.Name, Booking.BookingID, Trip.Destination**

**FROM Customer**

**LEFT JOIN Booking ON Customer.CustomerID = Booking.CustomerID**

**LEFT JOIN Trip ON Booking.TripID = Trip.TripID;**

**RESULT:**

|  |  |  |
| --- | --- | --- |
| NAME | BOOKING ID | DESTINATION |
| John Doe | 31 | New York |
| Alice Smith | 32 | Los Angeles |
| Bob Johnson | 33 | London |
| Emily Davis | 34 | Paris |
| Michael Lee | 35 | Tokyo |
| Samantha Brown | 36 | Sydney |
| David Wilson | 37 | Dubai |
| Jessica Taylor | 38 | Rome |
| Matthew Clark | 39 | Barcelona |
| Jennifer Martinez | 40 | Rio de Janeiro |
| Daniel Anderson | 41 | Cancun |
| Sarah Hernandez | 42 | Bangkok |
| Christopher Walker | 43 | Amsterdam |
| Lisa King | 44 | Berlin |
| Mark Lopez | 45 | Singapore |

***C) Retrieve all possible combinations of customers and trips***.

***QUERY:***

***SELECT Customer.Name, Trip.Destination***

***FROM Customer***

***CROSS JOIN Trip;***

***RESULT:***

|  |  |
| --- | --- |
| NAME | DESTINATION |
| John Doe | New York |
| Alice Smith | New York |
| Bob Johnson | New York |
| Emily Davis | New York |
| Michael Lee | New York |
| Samantha Brown | New York |
| David Wilson | New York |
| Jessica Taylor | New York |
| Matthew Clark | New York |
| Jennifer Martinez | New York |
| Daniel Anderson | New York |
| Sarah Hernandez | New York |
| Christopher Walker | New York |
| Lisa King | New York |
| Mark Lopez | New York |
| John Doe | Los Angeles |
| Alice Smith | Los Angeles |
| Bob Johnson | Los Angeles |
| Emily Davis | Los Angeles |
| Michael Lee | Los Angeles |
| Samantha Brown | Los Angeles |
| David Wilson | Los Angeles |
| Jessica Taylor | Los Angeles |
| Matthew Clark | Los Angeles |
| Jennifer Martinez | Los Angeles |
| Daniel Anderson | Los Angeles |
| Sarah Hernandez | Los Angeles |
| Christopher Walker | Los Angeles |
| Lisa King | Los Angeles |
| Mark Lopez | Los Angeles |
| John Doe | London |
| Alice Smith | London |
| Bob Johnson | London |
| Emily Davis | London |
| Michael Lee | London |
| Samantha Brown | London |
| David Wilson | London |
| Jessica Taylor | London |
| Matthew Clark | London |
| Jennifer Martinez | London |
| Daniel Anderson | London |
| Sarah Hernandez | London |
| Christopher Walker | London |
| Lisa King | London |
| Mark Lopez | London |
| John Doe | Paris |
| Alice Smith | Paris |
| Bob Johnson | Paris |
| Emily Davis | Paris |
| Michael Lee | Paris |
| Samantha Brown | Paris |
| David Wilson | Paris |
| Jessica Taylor | Paris |
| Matthew Clark | Paris |
| Jennifer Martinez | Paris |
| Daniel Anderson | Paris |
| Sarah Hernandez | Paris |
| Christopher Walker | Paris |
| Lisa King | Paris |
| Mark Lopez | Paris |
| John Doe | Tokyo |
| Alice Smith | Tokyo |
| Bob Johnson | Tokyo |
| Emily Davis | Tokyo |
| Michael Lee | Tokyo |
| Samantha Brown | Tokyo |
| David Wilson | Tokyo |
| Jessica Taylor | Tokyo |
| Matthew Clark | Tokyo |
| Jennifer Martinez | Tokyo |
| Daniel Anderson | Tokyo |
| Sarah Hernandez | Tokyo |
| Christopher Walker | Tokyo |
| Lisa King | Tokyo |
| Mark Lopez | Tokyo |
| John Doe | Sydney |
| Alice Smith | Sydney |
| Bob Johnson | Sydney |
| Emily Davis | Sydney |
| Michael Lee | Sydney |
| Samantha Brown | Sydney |
| David Wilson | Sydney |
| Jessica Taylor | Sydney |
| Matthew Clark | Sydney |
| Jennifer Martinez | Sydney |
| Daniel Anderson | Sydney |
| Sarah Hernandez | Sydney |
| Christopher Walker | Sydney |
| Lisa King | Sydney |
| Mark Lopez | Sydney |
| John Doe | Dubai |
| Alice Smith | Dubai |
| Bob Johnson | Dubai |
| Emily Davis | Dubai |
| Michael Lee | Dubai |
| Samantha Brown | Dubai |
| David Wilson | Dubai |
| Jessica Taylor | Dubai |
| Matthew Clark | Dubai |
| Jennifer Martinez | Dubai |
| Daniel Anderson | Dubai |
| Sarah Hernandez | Dubai |
| Christopher Walker | Dubai |
| Lisa King | Dubai |
| Mark Lopez | Dubai |
| John Doe | Rome |
| Alice Smith | Rome |
| Bob Johnson | Rome |
| Emily Davis | Rome |
| Michael Lee | Rome |
| Samantha Brown | Rome |
| David Wilson | Rome |
| Jessica Taylor | Rome |
| Matthew Clark | Rome |
| Jennifer Martinez | Rome |
| Daniel Anderson | Rome |
| Sarah Hernandez | Rome |
| Christopher Walker | Rome |
| Lisa King | Rome |
| Mark Lopez | Rome |
| John Doe | Barcelona |
| Alice Smith | Barcelona |
| Bob Johnson | Barcelona |
| Emily Davis | Barcelona |
| Michael Lee | Barcelona |
| Samantha Brown | Barcelona |
| David Wilson | Barcelona |
| Jessica Taylor | Barcelona |
| Matthew Clark | Barcelona |
| Jennifer Martinez | Barcelona |
| Daniel Anderson | Barcelona |
| Sarah Hernandez | Barcelona |
| Christopher Walker | Barcelona |
| Lisa King | Barcelona |
| Mark Lopez | Barcelona |
| John Doe | Rio de Janeiro |
| Alice Smith | Rio de Janeiro |
| Bob Johnson | Rio de Janeiro |
| Emily Davis | Rio de Janeiro |
| Michael Lee | Rio de Janeiro |
| Samantha Brown | Rio de Janeiro |
| David Wilson | Rio de Janeiro |
| Jessica Taylor | Rio de Janeiro |
| Matthew Clark | Rio de Janeiro |
| Jennifer Martinez | Rio de Janeiro |
| Daniel Anderson | Rio de Janeiro |
| Sarah Hernandez | Rio de Janeiro |
| Christopher Walker | Rio de Janeiro |
| Lisa King | Rio de Janeiro |
| Mark Lopez | Rio de Janeiro |
| John Doe | Cancun |
| Alice Smith | Cancun |
| Bob Johnson | Cancun |
| Emily Davis | Cancun |
| Michael Lee | Cancun |
| Samantha Brown | Cancun |
| David Wilson | Cancun |
| Jessica Taylor | Cancun |
| Matthew Clark | Cancun |
| Jennifer Martinez | Cancun |
| Daniel Anderson | Cancun |
| Sarah Hernandez | Cancun |
| Christopher Walker | Cancun |
| Lisa King | Cancun |
| Mark Lopez | Cancun |
| John Doe | Bangkok |
| Alice Smith | Bangkok |
| Bob Johnson | Bangkok |
| Emily Davis | Bangkok |
| Michael Lee | Bangkok |
| Samantha Brown | Bangkok |
| David Wilson | Bangkok |
| Jessica Taylor | Bangkok |
| Matthew Clark | Bangkok |
| Jennifer Martinez | Bangkok |
| Daniel Anderson | Bangkok |
| Sarah Hernandez | Bangkok |
| Christopher Walker | Bangkok |
| Lisa King | Bangkok |
| Mark Lopez | Bangkok |
| John Doe | Amsterdam |
| Alice Smith | Amsterdam |
| Bob Johnson | Amsterdam |
| Emily Davis | Amsterdam |
| Michael Lee | Amsterdam |
| Samantha Brown | Amsterdam |
| David Wilson | Amsterdam |
| Jessica Taylor | Amsterdam |
| Matthew Clark | Amsterdam |
| Jennifer Martinez | Amsterdam |
| Daniel Anderson | Amsterdam |
| Sarah Hernandez | Amsterdam |
| Christopher Walker | Amsterdam |
| Lisa King | Amsterdam |
| Mark Lopez | Amsterdam |
| John Doe | Berlin |
| Alice Smith | Berlin |
| Bob Johnson | Berlin |
| Emily Davis | Berlin |
| Michael Lee | Berlin |
| Samantha Brown | Berlin |
| David Wilson | Berlin |
| Jessica Taylor | Berlin |
| Matthew Clark | Berlin |
| Jennifer Martinez | Berlin |
| Daniel Anderson | Berlin |
| Sarah Hernandez | Berlin |
| Christopher Walker | Berlin |
| Lisa King | Berlin |
| Mark Lopez | Berlin |
| John Doe | Singapore |
| Alice Smith | Singapore |
| Bob Johnson | Singapore |
| Emily Davis | Singapore |
| Michael Lee | Singapore |
| Samantha Brown | Singapore |
| David Wilson | Singapore |
| Jessica Taylor | Singapore |
| Matthew Clark | Singapore |
| Jennifer Martinez | Singapore |
| Daniel Anderson | Singapore |
| Sarah Hernandez | Singapore |
| Christopher Walker | Singapore |
| Lisa King | Singapore |
| Mark Lopez | Singapore |

***D)*** ***Calculate Total Revenue Generated by Each Customer****:*

**QUERY:**

**SELECT Customer.Name, SUM(Trip.Price) AS TotalRevenue**

**FROM Customer**

**JOIN Booking ON Customer.CustomerID = Booking.CustomerID**

**JOIN Trip ON Booking.TripID = Trip.TripID**

**GROUP BY Customer.CustomerID;**

**RESULT:**

|  |  |
| --- | --- |
| NAME | TOTAL REVENUE |
| John Doe | 1500.00 |
| Alice Smith | 1800.00 |
| Bob Johnson | 2000.00 |
| Emily Davis | 2200.00 |
| Michael Lee | 2500.00 |
| Samantha Brown | 2700.00 |
| David Wilson | 2300.00 |
| Jessica Taylor | 2100.00 |
| Matthew Clark | 2400.00 |
| Jennifer Martinez | 2800.00 |
| Daniel Anderson | 2600.00 |
| Sarah Hernandez | 3000.00 |
| Christopher Walker | 1900.00 |
| Lisa King | 1700.00 |
| Mark Lopez | 2800.00 |

**7.GENERAL QUERIES;**

1. ***Find the Most Expensive Trip****:*

**QUERY:**

**SELECT \***

**FROM Trip**

**WHERE Price = (SELECT MAX(Price) FROM Trip);**

**RESULT:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| TRIPID | DESTINATION | STARTDATE | ENDDATE | PRICE |
| 12 | Bangkok | 2024-09-20 | 2024-09-27 | 3000.00 |

1. **List Customers Who Have Booked a Trip to Paris**:

***QUERY***:

***SELECT DISTINCT Customer.Name***

***FROM Customer***

***JOIN Booking ON Customer.CustomerID = Booking.CustomerID***

***JOIN Trip ON Booking.TripID = Trip.TripID***

***WHERE Trip.Destination = 'Paris';***

***RESULT:***

|  |
| --- |
| NAME |
| Emily Davis |

1. **Retrieve the Earliest Booking Date for Each Customer**:

***QUERY***:

***SELECT c.Name, MIN(b.BookingDate) AS EarliestBookingDate***

***FROM Customer c***

***JOIN Booking b ON c.CustomerID = b.CustomerID***

***GROUP BY c.CustomerID;***

***RESULT:***

|  |  |
| --- | --- |
| NAME | EARLIESTBOOKINGDATE |
| John Doe | 2024-05-01 |
| Alice Smith | 2024-05-05 |
| Bob Johnson | 2024-05-10 |
| Emily Davis | 2024-05-15 |
| Michael Lee | 2024-05-20 |
| Samantha Brown | 2024-05-25 |
| David Wilson | 2024-05-30 |
| Jessica Taylor | 2024-06-01 |
| Matthew Clark | 2024-06-05 |
| Jennifer Martinez | 2024-06-10 |
| Daniel Anderson | 2024-06-15 |
| Sarah Hernandez | 2024-06-20 |
| Christopher Walker | 2024-06-25 |
| Lisa King | 2024-06-30 |
| Mark Lopez | 2024-07-01 |

1. **Find Customers Who Have Booked Trips Within a Specific Date Range**: **Suppose from between June 2024 and September 2024**

***QUERY***:

***SELECT DISTINCT c.Name***

***FROM Customer c***

***JOIN Booking b ON c.CustomerID = b.CustomerID***

***JOIN Trip t ON b.TripID = t.TripID***

***WHERE t.StartDate BETWEEN '2024-06-01' AND '2024-09-01';***

***RESULT:***

|  |
| --- |
| NAME |
| John Doe |
| Alice Smith |
| Bob Johnson |
| Emily Davis |
| Michael Lee |
| Samantha Brown |
| David Wilson |
| Jessica Taylor |
| Matthew Clark |
| Jennifer Martinez |

***E)Get the top 5 customers who have spent the most on bookings.***

***QUERY:***

***SELECT c.Name, SUM(t.Price) AS TotalAmountSpent***

***FROM Customer c***

***JOIN Booking b ON c.CustomerID = b.CustomerID***

***JOIN Trip t ON b.TripID = t.TripID***

***GROUP BY c.CustomerID***

***ORDER BY TotalAmountSpent DESC***

***LIMIT 5;***

***RESULT:***

|  |  |
| --- | --- |
| NAME | TOTALAMOUNTSPENT |
| Sarah Hernandez | 3000.00 |
| Jennifer Martinez | 2800.00 |
| Mark Lopez | 2800.00 |
| Samantha Brown | 2700.00 |
| Daniel Anderson | 2600.00 |

***F)Identify customers who have booked trips with a price higher than the average price of all trips.***

***QUERY:***

***SELECT DISTINCT c.Name***

***FROM Customer c***

***JOIN Booking b ON c.CustomerID = b.CustomerID***

***JOIN Trip t ON b.TripID = t.TripID***

***WHERE t.Price > (SELECT AVG(Price) FROM Trip);***

***RESULT:***

|  |
| --- |
| NAME |
| Michael Lee |
| Samantha Brown |
| David Wilson |
| Matthew Clark |
| Jennifer Martinez |
| Daniel Anderson |
| Sarah Hernandez |
| Mark Lopez |

* 1. **Find Hotels with Price Per Night Less Than a Certain Amount*:(LESS THAN 200)***

***QUERY***:

SELECT \*

FROM Hotel

WHERE PricePerNight < 200;

***RESULT:***

|  |  |  |  |
| --- | --- | --- | --- |
| HOTELID | NAME | LOCATION | PRICEPERNIGHT |
| 2 | Marriott Los Angeles | Los Angeles | 180.00 |
| 4 | Novotel Paris | Paris | 180.00 |
| 13 | Hotel Okura Amsterdam | Amsterdam | 190.00 |
| 14 | Ritz-Carlton Berlin | Berlin | 170.00 |

* 1. ***Get the details of flights departing after a certain time (e.g., after 12:00 PM).***

***QUERY:***

SELECT \*

FROM Flight

WHERE DepartureTime > '12:00';

***RESULT:***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| FlightID | Airline | DepartureCity | ArrivalCity | DepartureTime | ArrivalTime |
| 4 | Air France | Paris | Tokyo | 14:00:00 | 18:00:00 |
| 6 | Emirates | Sydney | Dubai | 13:00:00 | 19:00:00 |
| 9 | Iberia | Barcelona | Rio de Janeiro | 14:30:00 | 21:00:00 |
| 14 | Lufthansa | Berlin | Singapore | 13:00:00 | 21:00:00 |
| 15 | Singapore Airlines | Singapore | New York | 22:00:00 | 06:30:00 |

* 1. **Calculate the total number of flights**:

***QUERY:***

***SELECT COUNT(\*) AS TotalFlights***

***FROM Flight;***

***RESULT:***

|  |
| --- |
| *TotalFlights* |
| *15* |

***As we conclude, I want to express my gratitude for the opportunity to share findings with you. I hope that you found the presentation insightful and valuable.***