

CS F212 :Data Base Systems

Mini-Project 1

Group 32

Topic :

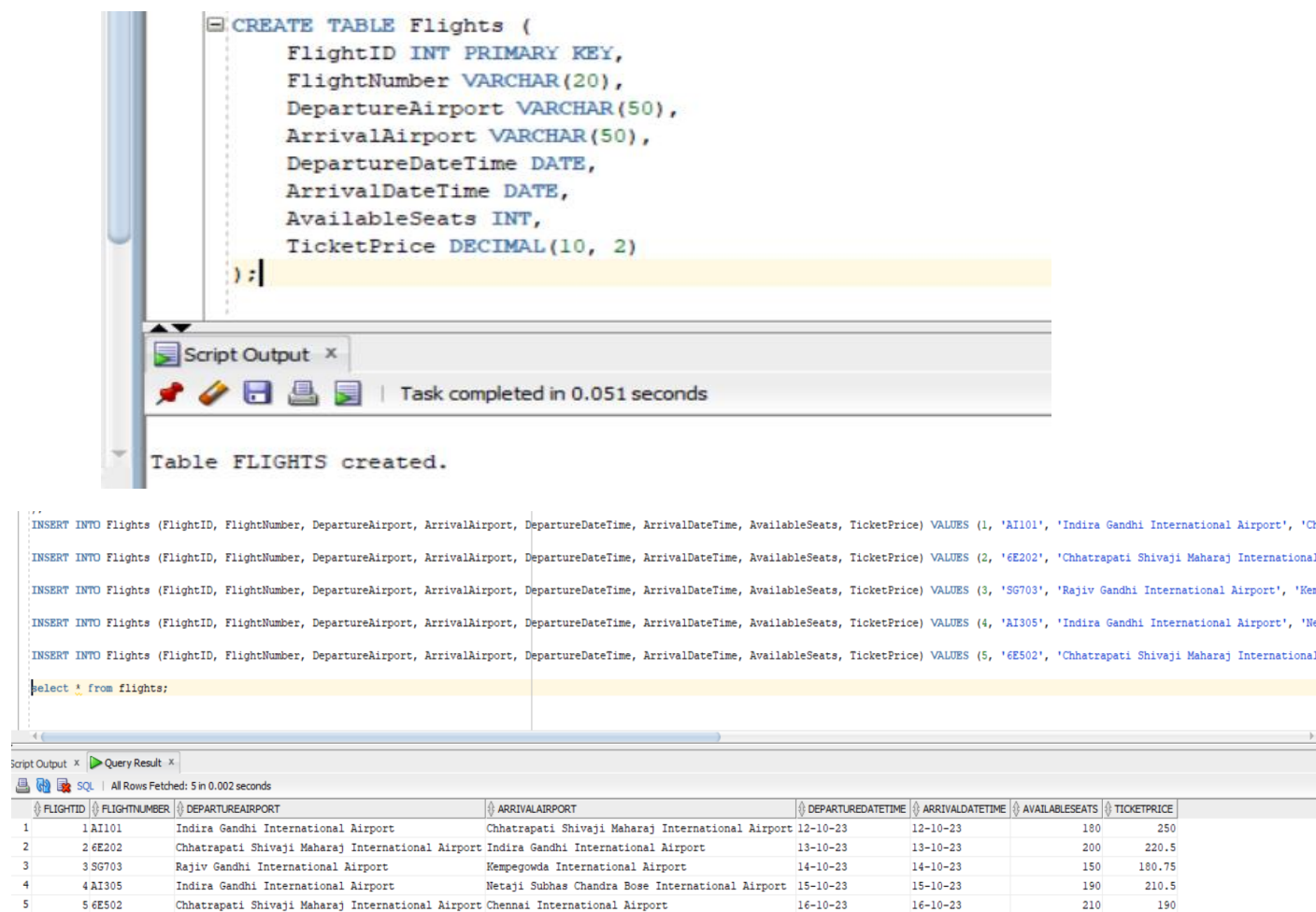
AIRLINE RESERVATION SYSTEM

Team Members:

Name	ID Number	Contribution
ANISETTI KARTHIK	2021AAPS2145H	25%
MANISHA JAKKULA	2021A4PS3064H	25%
HASINI VEMULA	2021A8PS1960H	25%
MEGHNA REDDY YADMA	2021A3PS2762H	25%

TABLES CREATION AND INSERTION OF DATA:

➤ FLIGHTS:



The screenshot displays the SQL Developer interface. The top pane shows the SQL script for creating the 'Flights' table and inserting five records. The bottom pane shows the 'Script Output' window with the message 'Table FLIGHTS created.' and the 'Query Result' window showing the data inserted into the table.

```
CREATE TABLE Flights (  
    FlightID INT PRIMARY KEY,  
    FlightNumber VARCHAR(20),  
    DepartureAirport VARCHAR(50),  
    ArrivalAirport VARCHAR(50),  
    DepartureDateTime DATE,  
    ArrivalDateTime DATE,  
    AvailableSeats INT,  
    TicketPrice DECIMAL(10, 2)  
);
```

```
INSERT INTO Flights (FlightID, FlightNumber, DepartureAirport, ArrivalAirport, DepartureDateTime, ArrivalDateTime, AvailableSeats, TicketPrice) VALUES (1, 'AI101', 'Indira Gandhi International Airport', 'Chhatrapati Shivaji Maharaj International Airport', '12-10-23', '12-10-23', 180, 250);  
INSERT INTO Flights (FlightID, FlightNumber, DepartureAirport, ArrivalAirport, DepartureDateTime, ArrivalDateTime, AvailableSeats, TicketPrice) VALUES (2, '6E202', 'Chhatrapati Shivaji Maharaj International Airport', 'Indira Gandhi International Airport', '13-10-23', '13-10-23', 200, 220.5);  
INSERT INTO Flights (FlightID, FlightNumber, DepartureAirport, ArrivalAirport, DepartureDateTime, ArrivalDateTime, AvailableSeats, TicketPrice) VALUES (3, 'SG703', 'Rajiv Gandhi International Airport', 'Kempegowda International Airport', '14-10-23', '14-10-23', 150, 180.75);  
INSERT INTO Flights (FlightID, FlightNumber, DepartureAirport, ArrivalAirport, DepartureDateTime, ArrivalDateTime, AvailableSeats, TicketPrice) VALUES (4, 'AI305', 'Indira Gandhi International Airport', 'Netaji Subhas Chandra Bose International Airport', '15-10-23', '15-10-23', 190, 210.5);  
INSERT INTO Flights (FlightID, FlightNumber, DepartureAirport, ArrivalAirport, DepartureDateTime, ArrivalDateTime, AvailableSeats, TicketPrice) VALUES (5, '6E502', 'Chhatrapati Shivaji Maharaj International Airport', 'Chennai International Airport', '16-10-23', '16-10-23', 210, 190);  
select * from flights;
```

FLIGHTID	FLIGHTNUMBER	DEPARTUREAIRPORT	ARRIVALAIRPORT	DEPARTUREDATETIME	ARRIVALDATETIME	AVAILABLESEATS	TICKETPRICE
1	1AI101	Indira Gandhi International Airport	Chhatrapati Shivaji Maharaj International Airport	12-10-23	12-10-23	180	250
2	26E202	Chhatrapati Shivaji Maharaj International Airport	Indira Gandhi International Airport	13-10-23	13-10-23	200	220.5
3	3SG703	Rajiv Gandhi International Airport	Kempegowda International Airport	14-10-23	14-10-23	150	180.75
4	4AI305	Indira Gandhi International Airport	Netaji Subhas Chandra Bose International Airport	15-10-23	15-10-23	190	210.5
5	56E502	Chhatrapati Shivaji Maharaj International Airport	Chennai International Airport	16-10-23	16-10-23	210	190

➤ CUSTOMERS:

```
CREATE TABLE Customers (
    CustomerID INT PRIMARY KEY,
    FirstName VARCHAR(50),
    LastName VARCHAR(50),
    Email VARCHAR(100),
    Phone VARCHAR(20)
);
```

Script Output x

Task completed in 0.045 seconds

Table FLIGHTS created.

Table CUSTOMERS created.

```
INSERT INTO Customers (CustomerID, FirstName, LastName, Email, Phone) VALUES (1, 'Karthik', 'Anisetti', 'karthikanisetti@gmail.com', '+91 9876543210');
INSERT INTO Customers (CustomerID, FirstName, LastName, Email, Phone) VALUES (2, 'Manisha', 'Jakkula', 'manishajakkula@gmail.com', '+91 8765432109');
INSERT INTO Customers (CustomerID, FirstName, LastName, Email, Phone) VALUES (3, 'Hasini', 'Vemula', 'hasinivemula@gmail.com', '+91 7654321098');
INSERT INTO Customers (CustomerID, FirstName, LastName, Email, Phone) VALUES (4, 'Meghna', 'Reddy', 'meghnareddy@gmail.com', '+91 6543210987');
INSERT INTO Customers (CustomerID, FirstName, LastName, Email, Phone) VALUES (5, 'Neha', 'Gunta', 'nehagunta@gmail.com', '+91 9432109876');
select * from customers;
```

Script Output x Query Result x

All Rows Fetched: 5 in 0.002 seconds

CUSTOMERID	FIRSTNAME	LASTNAME	EMAIL	PHONE
1	Karthik	Anisetti	karthikanisetti@gmail.com	+91 9876543210
2	Manisha	Jakkula	manishajakkula@gmail.com	+91 8765432109
3	Hasini	Vemula	hasinivemula@gmail.com	+91 7654321098
4	Meghna	Reddy	meghnareddy@gmail.com	+91 6543210987
5	Neha	Gunta	nehagunta@gmail.com	+91 9432109876

➤ RESERVATIONS:

```
CREATE TABLE Reservations (
    ReservationID INT PRIMARY KEY,
    CustomerID INT,
    FlightID INT,
    ReservationDate DATE,
    NumOfSeats INT,
    TotalPrice DECIMAL(10, 2),
    FOREIGN KEY (CustomerID) REFERENCES Customers(CustomerID),
    FOREIGN KEY (FlightID) REFERENCES Flights(FlightID)
);
```

Script Output x

Task completed in 0.051 seconds

Table FLIGHTS created.

Table CUSTOMERS created.

Table RESERVATIONS created.

<pre> INSERT INTO Reservations (ReservationID, CustomerID, FlightID, ReservationDate, NumOfSeats, TotalPrice) VALUES (101, 1, 1, TO_DATE('2023-10-06', 'YYYY-MM-DD'), 2, 401.00); INSERT INTO Reservations (ReservationID, CustomerID, FlightID, ReservationDate, NumOfSeats, TotalPrice) VALUES (202, 2, 2, TO_DATE('2023-10-07', 'YYYY-MM-DD'), 3, 542.25); INSERT INTO Reservations (ReservationID, CustomerID, FlightID, ReservationDate, NumOfSeats, TotalPrice) VALUES (303, 3, 3, TO_DATE('2023-10-08', 'YYYY-MM-DD'), 1, 210.50); INSERT INTO Reservations (ReservationID, CustomerID, FlightID, ReservationDate, NumOfSeats, TotalPrice) VALUES (404, 4, 4, TO_DATE('2023-10-09', 'YYYY-MM-DD'), 2, 350.50); INSERT INTO Reservations (ReservationID, CustomerID, FlightID, ReservationDate, NumOfSeats, TotalPrice) VALUES (505, 5, 5, TO_DATE('2023-10-10', 'YYYY-MM-DD'), 4, 800.00); </pre>																																																
<div>Script Output x Query Result x</div> <div>SQL All Rows Fetched: 5 in 0.003 seconds</div> <table> <tr> <th></th><th>RESERVATIONID</th><th>CUSTOMERID</th><th>FLIGHTID</th><th>RESERVATIONDATE</th><th>NUMOFSEATS</th><th>TOTALPRICE</th></tr> <tr> <td>1</td><td>101</td><td>1</td><td>1</td><td>06/OCT/2023 00:00:00</td><td>2</td><td>401</td></tr> <tr> <td>2</td><td>202</td><td>2</td><td>2</td><td>07/OCT/2023 00:00:00</td><td>3</td><td>542.25</td></tr> <tr> <td>3</td><td>303</td><td>3</td><td>3</td><td>08/OCT/2023 00:00:00</td><td>1</td><td>210.5</td></tr> <tr> <td>4</td><td>404</td><td>4</td><td>4</td><td>09/OCT/2023 00:00:00</td><td>2</td><td>350.5</td></tr> <tr> <td>5</td><td>505</td><td>5</td><td>5</td><td>10/OCT/2023 00:00:00</td><td>4</td><td>800</td></tr> </table>								RESERVATIONID	CUSTOMERID	FLIGHTID	RESERVATIONDATE	NUMOFSEATS	TOTALPRICE	1	101	1	1	06/OCT/2023 00:00:00	2	401	2	202	2	2	07/OCT/2023 00:00:00	3	542.25	3	303	3	3	08/OCT/2023 00:00:00	1	210.5	4	404	4	4	09/OCT/2023 00:00:00	2	350.5	5	505	5	5	10/OCT/2023 00:00:00	4	800
	RESERVATIONID	CUSTOMERID	FLIGHTID	RESERVATIONDATE	NUMOFSEATS	TOTALPRICE																																										
1	101	1	1	06/OCT/2023 00:00:00	2	401																																										
2	202	2	2	07/OCT/2023 00:00:00	3	542.25																																										
3	303	3	3	08/OCT/2023 00:00:00	1	210.5																																										
4	404	4	4	09/OCT/2023 00:00:00	2	350.5																																										
5	505	5	5	10/OCT/2023 00:00:00	4	800																																										

QUERIES:

➤ UPDATE Queries:

UPDATE Customers

SET Email = 'newemail@gmail.com'

WHERE CustomerID = 3;

<pre> UPDATE Customers SET Email = 'newemail@gmail.com' WHERE CustomerID = 3; select * from customers; </pre>																											
<div>Script Output x Query Result x</div> <div>Task completed in 0.066 seconds</div>																											
<table> <tr> <th>CUSTOMERID</th><th>FIRSTNAME</th><th>LASTNAME</th><th>EMAIL</th></tr> <tr> <td>1</td><td>Karthik</td><td>Aniseti</td><td>karthikaniseti@gmail.com</td></tr> <tr> <td>2</td><td>Manisha</td><td>Jakkula</td><td>manishajakkula@gmail.com</td></tr> <tr> <td>3</td><td>Hasini</td><td>Vemula</td><td>newemail@gmail.com</td></tr> <tr> <td>4</td><td>Meghna</td><td>Reddy</td><td>meghnareddy@gmail.com</td></tr> <tr> <td>5</td><td>Neha</td><td>Gunta</td><td>nehagunta@gmail.com</td></tr> </table>				CUSTOMERID	FIRSTNAME	LASTNAME	EMAIL	1	Karthik	Aniseti	karthikaniseti@gmail.com	2	Manisha	Jakkula	manishajakkula@gmail.com	3	Hasini	Vemula	newemail@gmail.com	4	Meghna	Reddy	meghnareddy@gmail.com	5	Neha	Gunta	nehagunta@gmail.com
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4	Meghna	Reddy	meghnareddy@gmail.com																								
5	Neha	Gunta	nehagunta@gmail.com																								

UPDATE Reservations

SET NumberOfSeats = 3, TotalPrice = 750.00

WHERE ReservationID = 101;

Select * from Reservations;

The screenshot shows a SQL script editor with the following code:

```
UPDATE Reservations
SET NumOfSeats = 3, TotalPrice = 750.00
WHERE ReservationID = 101;

select * from reservations;

select * from Flights;
```

Below the script editor is a 'Script Output' window. It contains the following text:

Task completed in 0.075 seconds

00933. 00000 - name is already used by an existing object

*Cause:

*Action:

1 row updated.

Below the output window is a table with the following data:

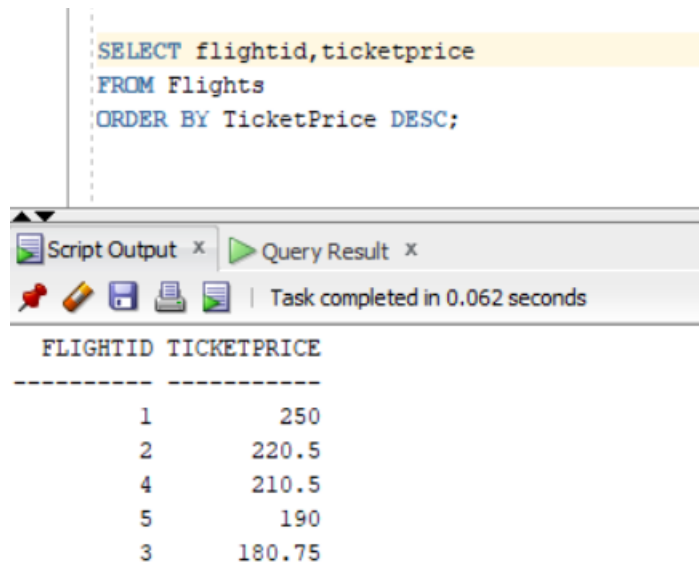
RESERVATIONID	CUSTOMERID	FLIGHTID	RESERVAT	NUMOFSEATS	TOTALPRICE
101	1	1	10-10-23	3	750
202	2	2	11-10-23	1	220.5
303	3	3	12-10-23	3	542.25
404	4	4	13-10-23	2	421
505	5	5	14-10-23	1	190

ORDER BY:

SELECT flightid, ticketprice

FROM Flights

ORDER BY TicketPrice DESC;



```
SELECT flightid, ticketprice
FROM Flights
ORDER BY TicketPrice DESC;
```

FLIGHTID	TICKETPRICE
1	250
2	220.5
4	210.5
5	190
3	180.75

➤ GROUP BY AND ORDER BY:

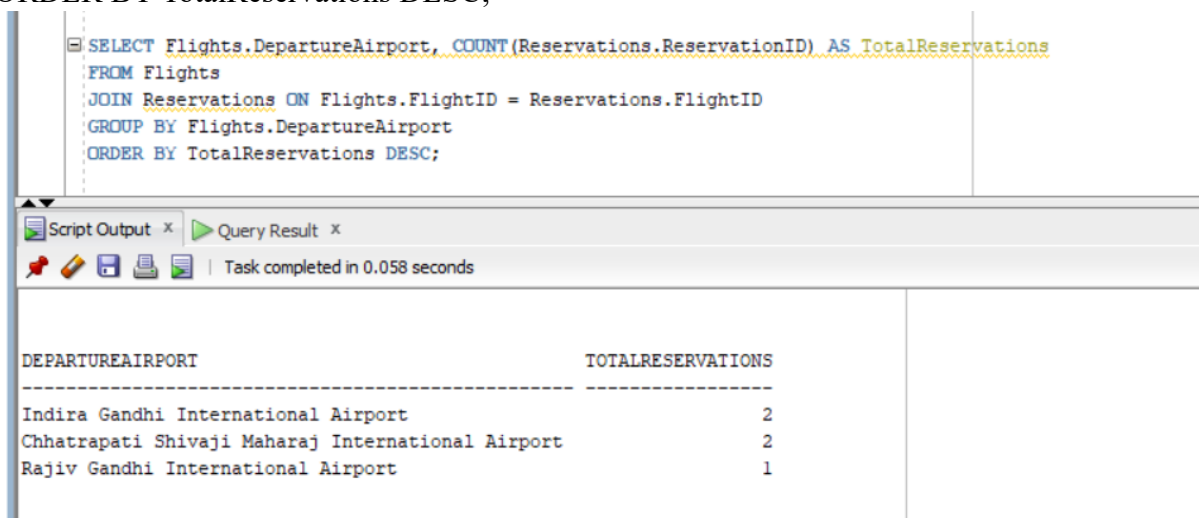
SELECT Flights.DepatureAirport, COUNT(Reservations.ReservationID) AS TotalReservations

FROM Flights

JOIN Reservations ON Flights .FlightID = Reservations. FlightID

GROUP BY Flights. DepatureAirport

ORDER BY TotalReservations DESC;

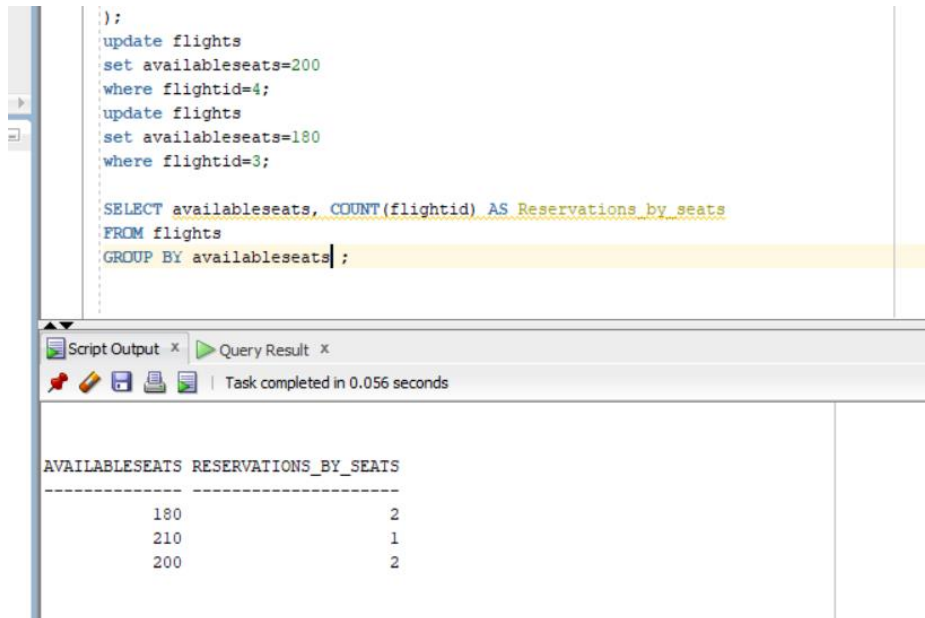


```
SELECT Flights.DepatureAirport, COUNT(Reservations.ReservationID) AS TotalReservations
FROM Flights
JOIN Reservations ON Flights.FlightID = Reservations.FlightID
GROUP BY Flights.DepatureAirport
ORDER BY TotalReservations DESC;
```

DEPARTUREAIRPORT	TOTALRESERVATIONS
Indira Gandhi International Airport	2
Chhatrapati Shivaji Maharaj International Airport	2
Rajiv Gandhi International Airport	1

➤ GROUP BY :

```
SELECT availableseats, COUNT(flightid) AS Reservations_by_seats
FROM flights
GROUP BY availableseats;
```



The screenshot shows a SQL query editor with the following code:

```
);
update flights
set availableseats=200
where flightid=4;
update flights
set availableseats=180
where flightid=3;

SELECT availableseats, COUNT(flightid) AS Reservations_by_seats
FROM flights
GROUP BY availableseats;
```

Below the editor, the 'Query Result' pane shows the execution status: 'Task completed in 0.056 seconds'. The results are displayed in a table with two columns: 'AVAILABLESEATS' and 'RESERVATIONS_BY_SEATS'.

AVAILABLESEATS	RESERVATIONS_BY_SEATS
180	2
210	1
200	2

➤ JOIN:

```
select c.firstname || ' ' || c.lastname AS full_name, r.reservationid,
r.numofseats, f.flightnumber
from reservations r
join customers c on r.customerid = c.customerid
join flights f on r.customerid = f.flightid
where f.departuredatetime >= '13-OCT-2023'
```

<pre> select c.firstname ' ' c.lastname AS full_name, r.reservationid, r.numofseats, f.flightnumber from reservations r join customers c on r.customerid = c.customerid join flights f on r.customerid = f.flightid where f.departuredatetime >= '13-OCT-2023' </pre>			
Script Output x			
Task completed in 0.023 seconds			
FULL_NAME	RESERVATIONID	NUMOFSEATS	FLIGHTNUMBER
Manisha Jakkula	202	1	6E202
Hasini Vemula	303	3	SG703
Meghna Reddy	404	2	AI305
Neha Gunta	505	1	6E502

SELECT R.ReservationID,
F.FlightNumber,F.DepatureAirport,F.DepartureDateTime,F.ArrivalDateTime,C.FirstName,C.
LastName,C.Email,C.Phone

FROM Reservations R

JOIN Flights F ON R.FlightsID = F.FlightID

JOIN Customers C ON R.CustomerID = C.CustomerID;

<pre> SELECT R.ReservationID, F.FlightNumber, F.DepartureAirport, F.ArrivalAirport, F.DepartureDateTime, F.ArrivalDateTime, C.FirstName, C.LastName, C.Email, C.Phone FROM Reservations R JOIN Flights F ON R.FlightID = F.FlightID JOIN Customers C ON R.CustomerID = C.CustomerID; </pre>	
Script Output x	
Task completed in 0.11 seconds	
RESERVATIONID	FLIGHTNUMBER
101	AI101
202	6E202
303	SG703
404	AI305
505	6E502

➤ AGGREGATE:

SELECT DepartureAirport, COUNT(FlightID) AS TotalFlights,
AVG(TicketPrice) AS AverageTicketPrice
FROM Flights
GROUP BY DepartureAirport;


```

SELECT
    DepartureAirport,
    COUNT(FlightID) AS TotalFlights,
    AVG(TicketPrice) AS AverageTicketPrice
FROM Flights
GROUP BY DepartureAirport;

```

Script Output x Query Result x

Task completed in 0.07 seconds

*Action:

DEPARTUREAIRPORT	TOTALFLIGHTS	AVERAGETICKETPRICE
Rajiv Gandhi International Airport	1	180.75
Indira Gandhi International Airport	2	230.25
Chhatrapati Shivaji Maharaj International Airport	2	205.25

SELECT AVG(TicketPrice) AS AverageTicketPrice, MAX(AvailableSeats) as
MaxAvailableSeats
FROM Flights;

```

SELECT AVG(TicketPrice) AS AverageTicketPrice, MAX(AvailableSeats) AS MaxAvailableSeats
FROM Flights;

```

Script Output x Query Result x

Task completed in 0.061 seconds

00955. 00000 - "name is already used by an existing object"

*Cause:

*Action:

AVERAGETICKETPRICE	MAXAVAILABLESEATS
210.35	210

➤ SUBQUERIES:

Select customerid, firstname || ' ' || lastname AS full_name, phone

From customers c

Where exists(select * from reservations r where r.customerid=c.customerid);

```
select customerid, firstname || ' ' || lastname AS full_name, phone
from customers c
where exists(select * from reservations r where r.customerid=c.customerid);
```

Script Output x Query Result x

Task completed in 0.05 seconds

CUSTOMERID	FULL_NAME	PHONE
1	Karthik Aniseti	+91 9876543210
2	Manisha Jakkula	+91 8765432109
3	Hasini Vemula	+91 7654321098
4	Meghna Reddy	+91 6543210987
5	Neha Gunta	+91 9432109876