

DBMS LAB ASSSIGNMENT 4

NAME: DATLA TARUN ANJANEYA VARMA

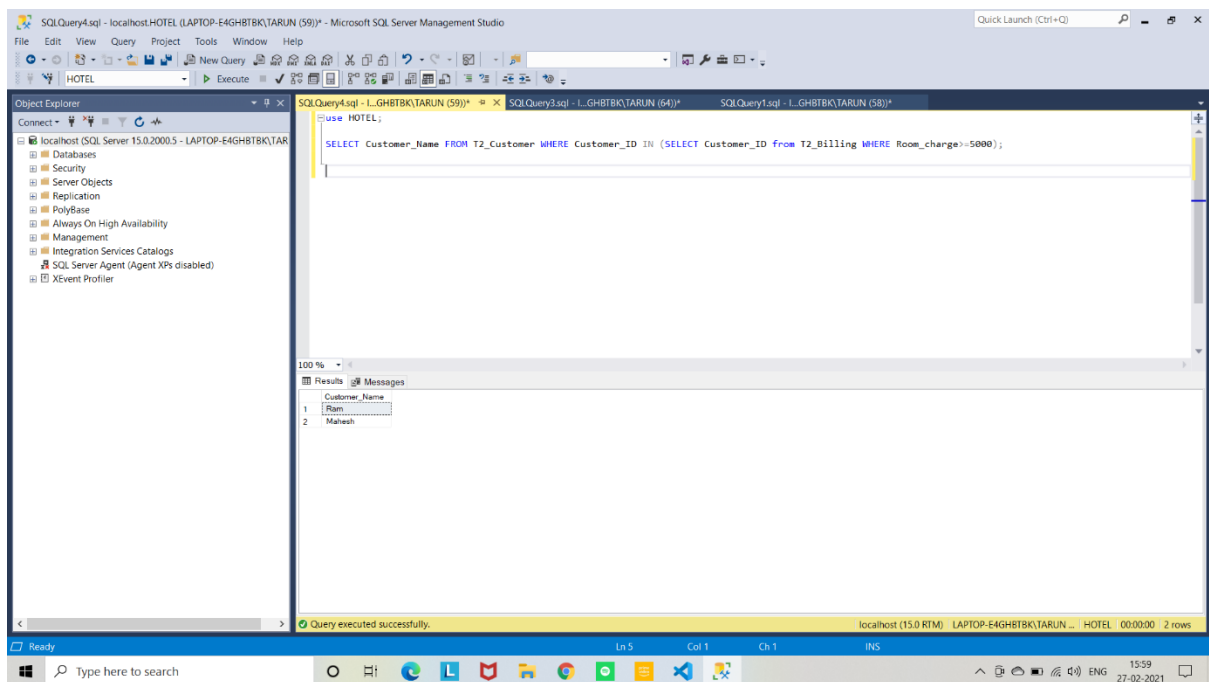
REG NO: 19BCS036

GROUP NUMBER: 2 (HOTEL DATABASE)

Q1) Write 5 Nested Queries for your respective database- the queries should not be very similar like just changing the where clause or just building all the queries on only one or two tables etc. The queries should make sense, it should cover most part of your database tables.

SQL QUERIES OUTPUTS

QUERY 1



The screenshot displays the Microsoft SQL Server Management Studio interface. The 'Object Explorer' on the left shows the 'HOTEL' database selected. The 'Query Editor' in the center contains the following SQL query:

```
USE HOTEL;  
SELECT Customer_Name FROM T2_Customer WHERE Customer_ID IN (SELECT Customer_ID from T2_Billing WHERE Room_charge>=5000);
```

The 'Results' pane at the bottom shows the output of the query, which consists of two rows:

Customer_Name
Ram
Maheesh

A status bar at the bottom indicates 'Query executed successfully.' and 'localhost (15.0 RTM) LAPTOP-E4GH8TBK\TARUN... HOTEL 00:00:00 2 rows'.

QUERY 2

The screenshot shows the Microsoft SQL Server Management Studio interface. The Object Explorer on the left displays the database structure for 'HOTEL'. The main query window contains the following SQL code:

```
USE HOTEL;

SELECT Customer_Name FROM T2_Customer WHERE Customer_ID IN (SELECT Customer_ID FROM T2_Billing WHERE Room_charge >= 5000);

SELECT CONCAT(Check_in_date, ',', Check_out_date) AS Stay_in_hotel FROM T2_Reservation WHERE Room_number IN
(SELECT Room_number FROM T2_Rooms WHERE Room_Type = 'Deluxe');

SELECT Reservation_date FROM T2_Reservation WHERE Reservation_number IN (SELECT Reservation_number FROM T2_SERVICES WHERE Service_cost > 3000);
```

The Results pane shows two rows of data for the 'Stay_in_hotel' column:

Stay_in_hotel
1999-02-03,1999-02-22
1999-04-03,1999-04-04

The status bar at the bottom indicates 'Query executed successfully' and '2 rows'.

QUERY 3

The screenshot shows the Microsoft SQL Server Management Studio interface. The Object Explorer on the left displays the database structure for 'HOTEL'. The main query window contains the following SQL code:

```
USE HOTEL;

SELECT Customer_Name FROM T2_Customer WHERE Customer_ID IN (SELECT Customer_ID FROM T2_Billing WHERE Room_charge >= 5000);

SELECT CONCAT(Check_in_date, ',', Check_out_date) AS Stay_in_hotel FROM T2_Reservation WHERE Room_number IN
(SELECT Room_number FROM T2_Rooms WHERE Room_Type = 'Deluxe');

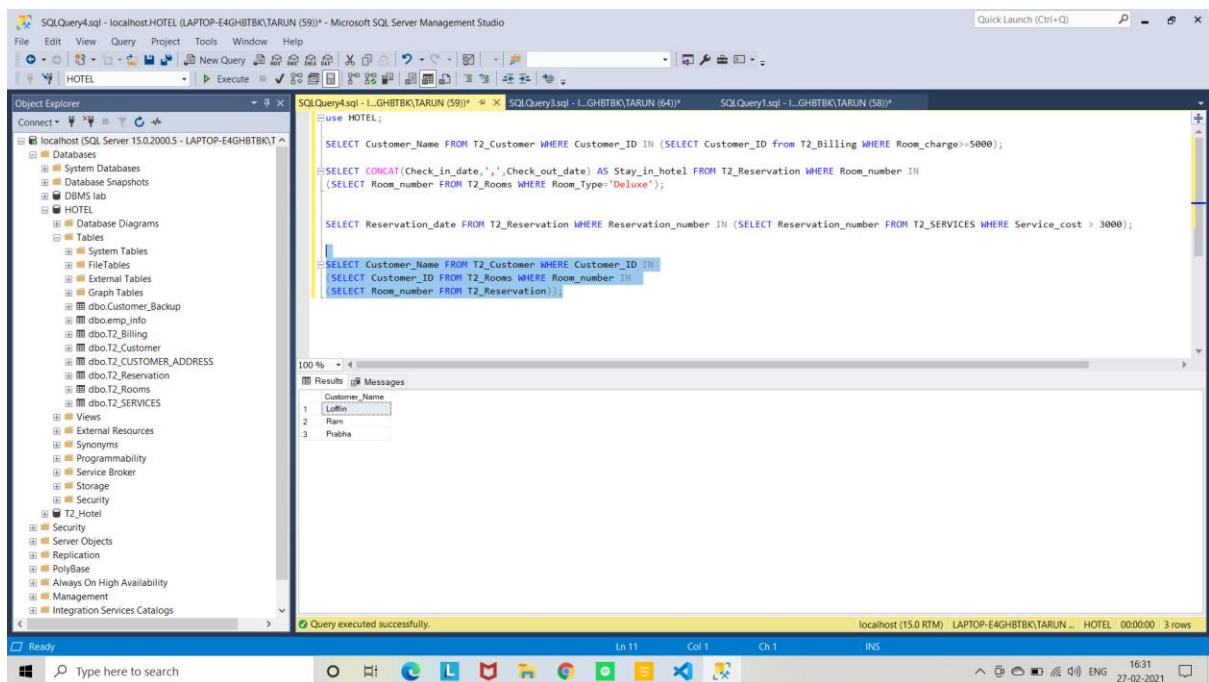
SELECT Reservation_date FROM T2_Reservation WHERE Reservation_number IN (SELECT Reservation_number FROM T2_SERVICES WHERE Service_cost > 3000);
```

The Results pane shows two rows of data for the 'Reservation_date' column:

Reservation_date
1999-02-03
1999-04-01

The status bar at the bottom indicates 'Query executed successfully' and '2 rows'.

QUERY 4



SQLQuery4.sql - localhost:HOTEL (LAPTOP-E4GHBTBK)TARUN (59)* - Microsoft SQL Server Management Studio

```
use HOTEL;

SELECT Customer_Name FROM T2_Customer WHERE Customer_ID IN (SELECT Customer_ID from T2_Billing WHERE Room_charge>=5000);

SELECT CONCAT(Check_in_date,',',Check_out_date) AS Stay_in_hotel FROM T2_Reservation WHERE Room_number IN
(SELECT Room_number FROM T2_Rooms WHERE Room_Type='Deluxe');

SELECT Reservation_date FROM T2_Reservation WHERE Reservation_number IN (SELECT Reservation_number FROM T2_SERVICES WHERE Service_cost > 3000);

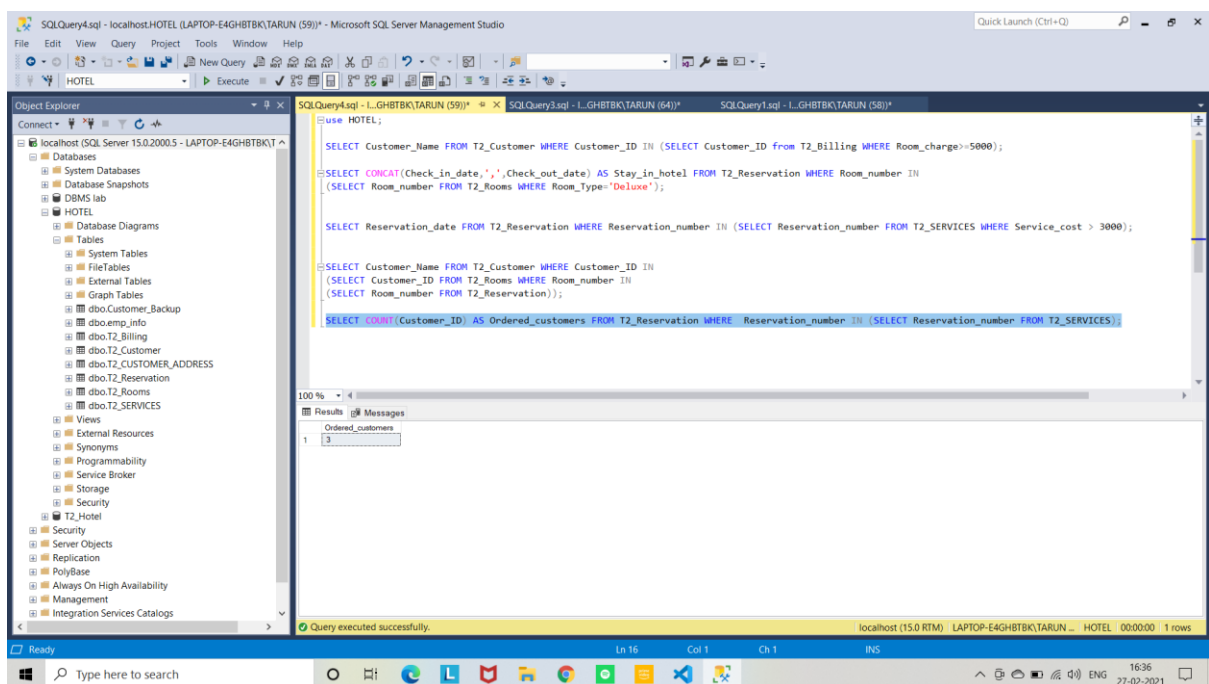
SELECT Customer_Name FROM T2_Customer WHERE Customer_ID IN
(SELECT Customer_ID FROM T2_Rooms WHERE Room_number IN
(SELECT Room_number FROM T2_Reservation));
```

Results

Customer_Name
LoBin
Ram
Prabha

Query executed successfully. localhost (15.0 RTM) LAPTOP-E4GHBTBK)TARUN - HOTEL 00:00:00 3 rows

QUERY 5



SQLQuery4.sql - localhost:HOTEL (LAPTOP-E4GHBTBK)TARUN (59)* - Microsoft SQL Server Management Studio

```
use HOTEL;

SELECT Customer_Name FROM T2_Customer WHERE Customer_ID IN (SELECT Customer_ID from T2_Billing WHERE Room_charge>=5000);

SELECT CONCAT(Check_in_date,',',Check_out_date) AS Stay_in_hotel FROM T2_Reservation WHERE Room_number IN
(SELECT Room_number FROM T2_Rooms WHERE Room_Type='Deluxe');

SELECT Reservation_date FROM T2_Reservation WHERE Reservation_number IN (SELECT Reservation_number FROM T2_SERVICES WHERE Service_cost > 3000);

SELECT Customer_Name FROM T2_Customer WHERE Customer_ID IN
(SELECT Customer_ID FROM T2_Rooms WHERE Room_number IN
(SELECT Room_number FROM T2_Reservation));

SELECT COUNT(Customer_ID) AS Ordered_customers FROM T2_Reservation WHERE Reservation_number IN (SELECT Reservation_number FROM T2_SERVICES);
```

Results

Ordered_customers
3

Query executed successfully. localhost (15.0 RTM) LAPTOP-E4GHBTBK)TARUN - HOTEL 00:00:00 1 rows

Q2) Illustrate how we can use Concat and As operators in SQL (minimum 3 queries)

SQL QUERIES

QUERY FOR CONCAT

The screenshot shows the Microsoft SQL Server Management Studio interface. The Object Explorer on the left displays the database structure for 'HOTEL'. The main query window contains the following SQL code:

```
USE HOTEL;  
SELECT CONCAT(DNO,',',Street,',',City,',',State) AS Customer_permanent_address FROM T2_CUSTOMER_ADDRESS;  
SELECT CONCAT(Room_number,',',Room_location,',') AS Room_address FROM T2_Rooms;
```

The Results pane shows the output of the second query, displaying a table with the column 'Room_address' and three rows of data:

Room_address
1.block-2
2.block-1
3.block-2

The status bar at the bottom indicates 'Query executed successfully' and '3 rows'.

QUERY FOR AS

The screenshot shows the Microsoft SQL Server Management Studio interface. The Object Explorer on the left displays the database structure for 'HOTEL'. The main query window contains the following SQL code:

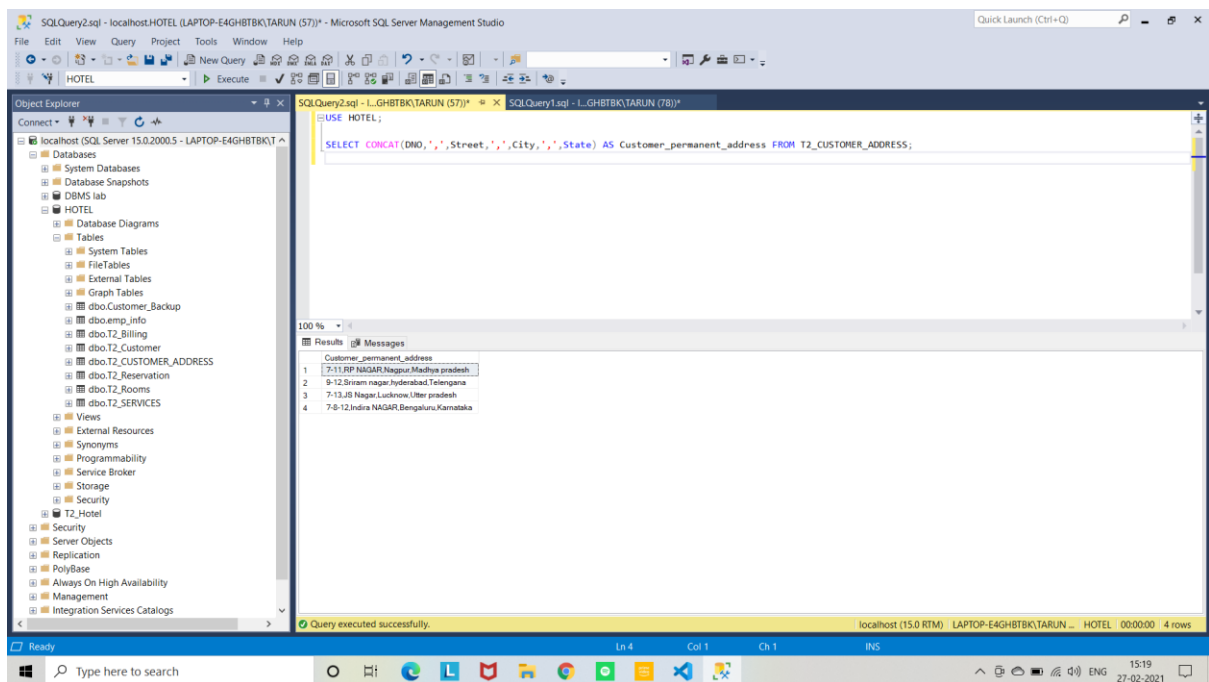
```
USE HOTEL;  
SELECT CONCAT(DNO,',',Street,',',City,',',State) AS Customer_permanent_address FROM T2_CUSTOMER_ADDRESS;  
SELECT CONCAT(Room_number,',',Room_location,',') AS Room_address FROM T2_Rooms;  
SELECT empname AS Waiters FROM emp_info WHERE Salary < 7000;
```

The Results pane shows the output of the third query, displaying a table with the column 'Waiters' and two rows of data:

Waiters
Max
Has

The status bar at the bottom indicates 'Query executed successfully' and '2 rows'.

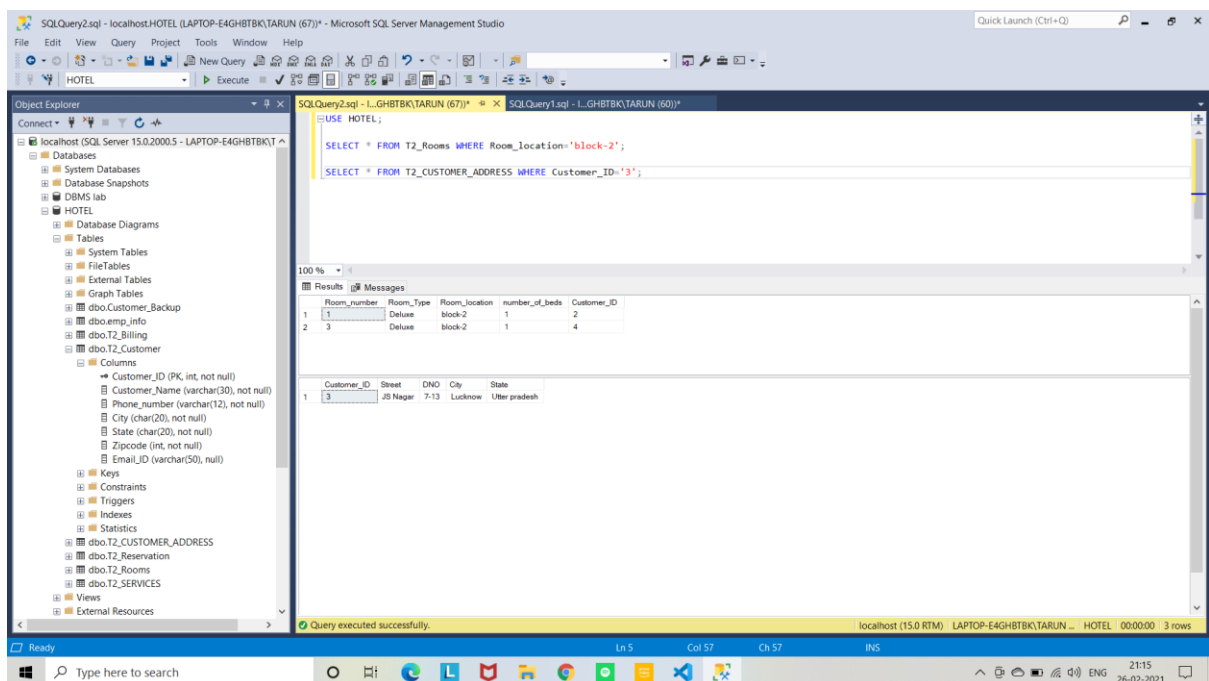
QUERY FOR CONCAT AND AS



Q3) Illustrate all the Comparison operator (2 queries for each operator)

The comparison operators are =,>,<,>=,<=,<>(not)

QUERIES FOR =



QUERIES FOR >

The screenshot shows the Microsoft SQL Server Management Studio interface. The left pane displays the 'Object Explorer' with the 'HOTEL' database selected. The central pane shows two SQL queries:

```
SELECT * FROM T2_Billing WHERE Room_charge > '2500';
```

```
SELECT * FROM T2_Reservation WHERE Number_of_guests > '3';
```

The bottom pane displays the results of these queries. The first query returns a table with columns: Billing_ID, Room_charge, Credit_card, Payment_date, and Customer_ID. The second query returns a table with columns: Reservation_number, Check_in_date, Check_out_date, Number_of_guests, Reservation_date, Customer_ID, and Room_number.

Billing_ID	Room_charge	Credit_card	Payment_date	Customer_ID
1	5000	9878543211	2021-05-05	2
2	6000	1234567890	2021-09-30	3
3	3000	5544666666	2021-12-11	4

Reservation_number	Check_in_date	Check_out_date	Number_of_guests	Reservation_date	Customer_ID	Room_number
1	1999-02-03	1999-02-22	5	1999-02-01	2	1
2	1999-02-03	1999-02-22	4	1999-02-03	1	2

QUERIES FOR <

The screenshot shows the Microsoft SQL Server Management Studio interface. The left pane displays the 'Object Explorer' with the 'HOTEL' database selected. The central pane shows two SQL queries:

```
SELECT * FROM T2_Customer WHERE Zipcode < '534203';
```

```
SELECT * FROM T2_Customer_Address WHERE Customer_ID < '4';
```

The bottom pane displays the results of these queries. The first query returns a table with columns: Customer_ID, Customer_Name, Phone_number, City, State, Zipcode, and Email_ID. The second query returns a table with columns: Customer_ID, Street, DNO, City, and State.

Customer_ID	Customer_Name	Phone_number	City	State	Zipcode	Email_ID
1	Lofin	888543748	Nagpur	MP	534201	lofin@gmail.com
2	Prabha	888543766	Bengaluru	Karnataka	534201	prab@gmail.com

Customer_ID	Street	DNO	City	State
1	RIP NAGAR	7-11	Nagpur	Madhya pradesh
2	Sriram nagar	9-12	Hyderabad	Telangana
3	JB Nagar	7-13	Lucknow	Uttar pradesh

QUERIES FOR >=

The screenshot shows the Microsoft SQL Server Management Studio interface. The query editor contains the following SQL query:

```
SELECT * FROM T2_Billing WHERE Room_charge >= '2500';  
SELECT * FROM T2_Reservation WHERE Number_of_guests > '3';  
SELECT * FROM T2_Customer WHERE Zipcode < '534203';  
SELECT * FROM T2_CUSTOMER_ADDRESS WHERE Customer_ID < '4';  
SELECT * FROM T2_SERVICES WHERE Reservation_number >= '2';  
SELECT Customer_ID, Reservation_number FROM T2_Reservation WHERE Check_in_date >= '1999-02-03';
```

The Results pane displays the following data:

Service_ID	Service_name	Service_cost	Reservation_number
1	Transport	8000	3
2	Room	4000	2

The Messages pane shows the following data:

Customer_ID	Reservation_number
1	2
2	1
3	4

The status bar indicates the query was executed successfully, returning 5 rows.

QUERIES FOR <=

The screenshot shows the Microsoft SQL Server Management Studio interface. The query editor contains the following SQL query:

```
SELECT * FROM T2_Billing WHERE Room_charge >= '2500';  
SELECT * FROM T2_Reservation WHERE Number_of_guests > '3';  
SELECT * FROM T2_Customer WHERE Zipcode < '534203';  
SELECT * FROM T2_CUSTOMER_ADDRESS WHERE Customer_ID < '4';  
SELECT * FROM T2_SERVICES WHERE Reservation_number >= '2';  
SELECT Customer_ID, Reservation_number FROM T2_Reservation WHERE Check_in_date >= '1999-02-03';  
SELECT Customer_Name FROM T2_Customer WHERE Customer_ID <= '3';  
SELECT * FROM emp_info WHERE age <= 35;
```

The Results pane displays the following data:

Customer_Name
Loftin
Ram
Mahesh

The Messages pane shows the following data:

empid	empname	dob	age
1	Max	1999-03-21	22
2	Nax	1992-07-07	29

The status bar indicates the query was executed successfully, returning 5 rows.

QUERIES FOR <>

The screenshot shows the Microsoft SQL Server Management Studio interface. The Object Explorer on the left displays the database structure for 'HOTEL'. The main query window contains the following SQL code:

```
SELECT * FROM T2_Reservation WHERE Number_of_guests <> '3';
SELECT * FROM T2_Customer WHERE Zipcode <> '534203';
SELECT * FROM T2_CUSTOMER_ADDRESS WHERE Customer_ID <> '4';
SELECT * FROM T2_SERVICES WHERE Reservation_number >= '2';
SELECT Customer_ID, Reservation_number FROM T2_Reservation WHERE Check_in_date >= '1999-02-03';
SELECT Customer_Name FROM T2_Customer WHERE Customer_ID <= '3';
SELECT * FROM emp_info WHERE age <= 35;
SELECT * FROM emp_info WHERE empname <> 'Jax';
SELECT * FROM T2_Rooms WHERE Room_Type <> 'Deluxe';
```

The Results pane shows two tables of data:

empid	empname	dob	age
1	Max	1999-03-21	22
2	Max	1992-07-07	29

Room_number	Room_Type	Room_location	number_of_beds	Customer_ID
1	2	Economic	block-1	3

The status bar at the bottom indicates 'Query executed successfully.' and 'localhost (15.0 RTM) LAPTOP-E4GHBTBK\TARUN - HOTEL 00:00:00 3 rows'.

Q4) Illustrate Logical operators except ANY, ALL and Like (2 queries for each operator)

The logical operators are AND, OR, IN, BETWEEN, NOT

QUERIES FOR AND

The screenshot shows the Microsoft SQL Server Management Studio interface. The Object Explorer on the left displays the database structure for 'HOTEL'. The main query window contains the following SQL code:

```
SELECT * FROM T2_SERVICES WHERE Service_cost > '2000' AND Service_ID >= 2;
SELECT * FROM T2_Rooms WHERE number_of_beds < '1' AND Room_location = 'block-2';
```

The Results pane shows two tables of data:

Service_ID	Service_name	Service_cost	Reservation_number
1	2	Transport	8000
2	3	Room	4000

Room_number	Room_Type	Room_location	number_of_beds	Customer_ID
1	1	Deluxe	block-2	1
2	3	Deluxe	block-2	1

The status bar at the bottom indicates 'Query executed successfully.' and 'localhost (15.0 RTM) LAPTOP-E4GHBTBK\TARUN - HOTEL 00:00:00 4 rows'.

QUERIES FOR OR

The screenshot shows the Microsoft SQL Server Management Studio interface. The Object Explorer on the left displays the database structure for 'HOTEL'. The query editor in the center contains the following SQL query:

```
SELECT * FROM T2_SERVICES WHERE Service_cost > '2000' AND Service_ID >= 2;  
SELECT * FROM T2_Rooms WHERE number_of_beds = '1' AND Room_location = 'block-2';  
  
SELECT Reservation_number FROM T2_Reservation WHERE Reservation_date > '1999-02-02' OR Room_number = '1';  
SELECT Customer_ID FROM T2_CUSTOMER_ADDRESS WHERE Street='JS Nagar' OR DNO = '9-12';
```

The Results pane at the bottom shows the output of the query, which includes a table with Reservation_number and a table with Customer_ID.

Reservation_number
1
2
3

Customer_ID
2
3

QUERIES FOR IN

The screenshot shows the Microsoft SQL Server Management Studio interface. The Object Explorer on the left displays the database structure for 'HOTEL'. The query editor in the center contains the following SQL query:

```
SELECT * FROM T2_SERVICES WHERE Service_cost > '2000' AND Service_ID >= 2;  
SELECT * FROM T2_Rooms WHERE number_of_beds = '1' AND Room_location = 'block-2';  
  
SELECT Reservation_number FROM T2_Reservation WHERE Reservation_date > '1999-02-02' OR Room_number = '1';  
SELECT Customer_ID FROM T2_CUSTOMER_ADDRESS WHERE Street='JS Nagar' OR DNO = '9-12';  
  
SELECT * FROM T2_Customer WHERE City IN ('hyderabad', 'Bengaluru');  
SELECT * FROM T2_Billing WHERE Payment_date IN ('2021-05-05');
```

The Results pane at the bottom shows the output of the query, which includes a table with Customer details and a table with Billing details.

Customer_ID	Customer_Name	Phone_number	City	State	Zipcode	Email_ID
2	Ram	868543744	hyderabad	TN	534204	Ram@gmail.com
4	Prabha	868543766	Bengaluru	Karnataka	534201	prab@gmail.com

Billing_ID	Room_charge	Credit_card	Payment_date	Customer_ID
2	5000	9876543211	2021-05-05	2

QUERIES FOR BETWEEN

The screenshot shows the Microsoft SQL Server Management Studio interface. The Object Explorer on the left displays the database structure for 'HOTEL'. The main query window contains the following SQL code:

```
SELECT * FROM T2_SERVICES WHERE Service_cost > '2000' AND Service_ID >= 2;  
SELECT * FROM T2_Rooms WHERE number_of_beds = '1' AND Room_location = 'block-2';  
  
SELECT Reservation_number FROM T2_Reservation WHERE Reservation_date > '1999-02-02' OR Room_number = '1';  
SELECT Customer_ID FROM T2_CUSTOMER_ADDRESS WHERE Street='35 Nagan' OR DNO = '9-12';  
  
SELECT * FROM T2_Customer WHERE City IN ('hyderabad', 'Bengaluru');  
SELECT * FROM T2_Billing WHERE Payment_date IN('2021-05-05');  
  
SELECT * FROM T2_Reservation WHERE NOT Reservation_number = '2';  
SELECT * FROM Customer_Backup WHERE NOT Customer_Name='Lofflin';  
  
SELECT empname FROM emp_info WHERE AGE BETWEEN 25 AND 70;  
SELECT Service_ID,Service_name,Service_cost FROM T2_SERVICES WHERE Reservation_number BETWEEN 2 AND 3;
```

The Results pane shows the output of the last query, displaying a table with columns 'Service_ID', 'Service_name', and 'Service_cost'.

Service_ID	Service_name	Service_cost
2	Transport	8000
3	Room	4000

QUERIES FOR NOT

The screenshot shows the Microsoft SQL Server Management Studio interface. The Object Explorer on the left displays the database structure for 'HOTEL'. The main query window contains the following SQL code:

```
SELECT * FROM T2_SERVICES WHERE Service_cost > '2000' AND Service_ID >= 2;  
SELECT * FROM T2_Rooms WHERE number_of_beds = '1' AND Room_location = 'block-2';  
  
SELECT Reservation_number FROM T2_Reservation WHERE Reservation_date > '1999-02-02' OR Room_number = '1';  
SELECT Customer_ID FROM T2_CUSTOMER_ADDRESS WHERE Street='35 Nagan' OR DNO = '9-12';  
  
SELECT * FROM T2_Customer WHERE City IN ('hyderabad', 'Bengaluru');  
SELECT * FROM T2_Billing WHERE Payment_date IN('2021-05-05');  
  
SELECT * FROM T2_Reservation WHERE NOT Reservation_number = '2';  
SELECT * FROM Customer_Backup WHERE NOT Customer_Name='Lofflin';
```

The Results pane shows the output of the last query, displaying a table with columns 'Reservation_number', 'Check_in_date', 'Check_out_date', 'Number_of_guests', 'Reservation_date', 'Customer_ID', and 'Room_number'.

Reservation_number	Check_in_date	Check_out_date	Number_of_guests	Reservation_date	Customer_ID	Room_number
1	1999-02-03	1999-02-22	5	1999-02-01	2	1
2	1999-04-03	1999-04-04	2	1999-04-01	4	3