=================================**Assignment3**============================

Submitted By **TANUJA SHARMA**

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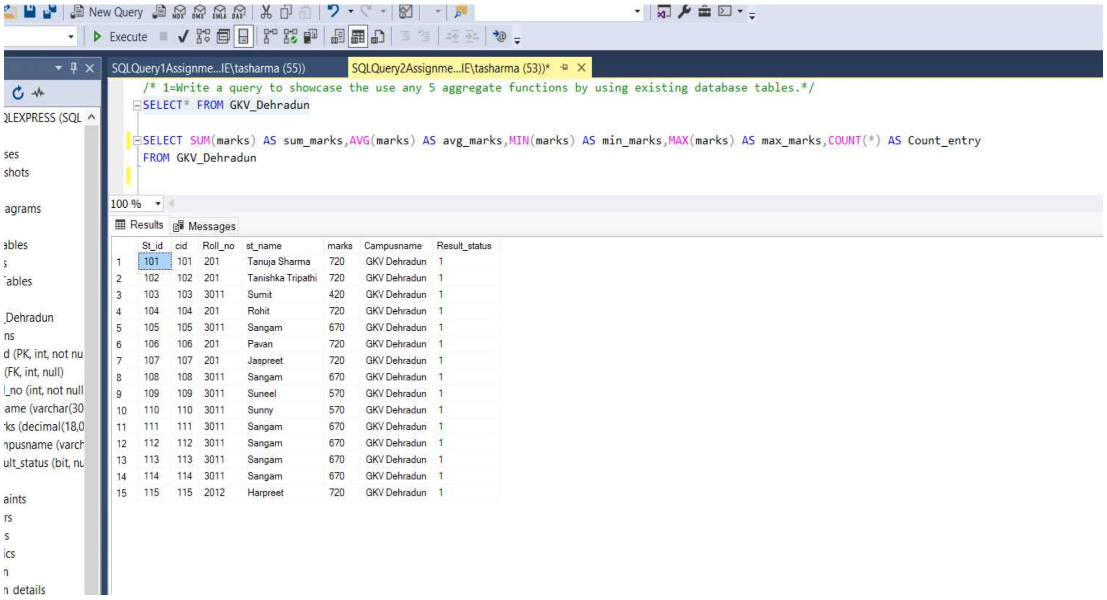
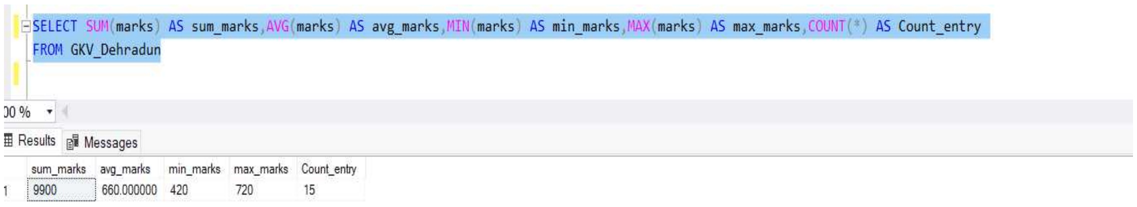
Que1= Write a query to showcase the use any 5 aggregate functions by using existing database tables.



```sql
/* 1=Write a query to showcase the use any 5 aggregate functions by using existing database tables.*/
SELECT* FROM GKV_Dehradun

SELECT SUM(marks) AS sum_marks,AVG(marks) AS avg_marks,MIN(marks) AS min_marks,MAX(marks) AS max_marks,COUNT(*) AS Count_entry
FROM GKV_Dehradun
```

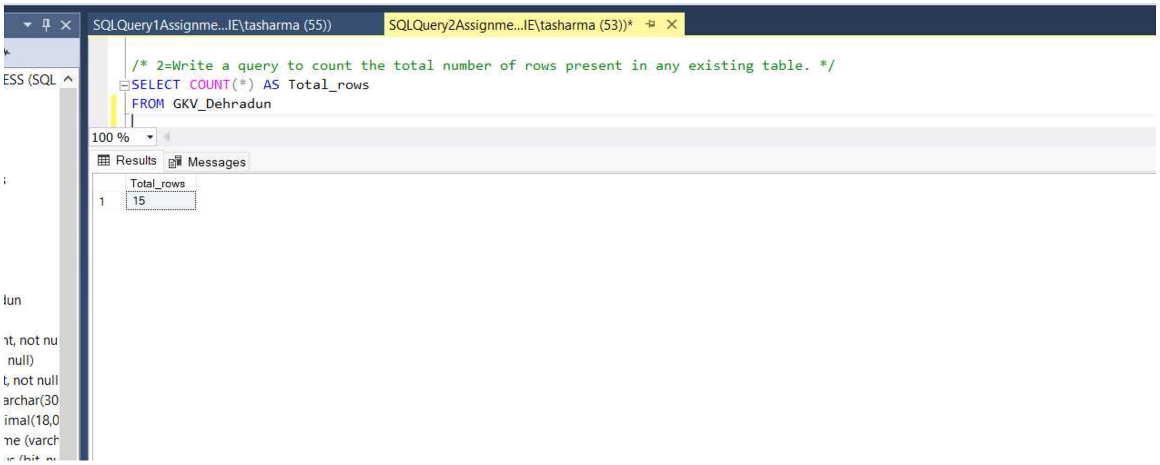
	St_id	cid	Roll_no	st_name	marks	Campusname	Result_status
1	101	101	201	Tanuja Sharma	720	GKV Dehradun	1
2	102	102	201	Tanishka Tripathi	720	GKV Dehradun	1
3	103	103	3011	Sumit	420	GKV Dehradun	1
4	104	104	201	Rohit	720	GKV Dehradun	1
5	105	105	3011	Sangam	670	GKV Dehradun	1
6	106	106	201	Pavan	720	GKV Dehradun	1
7	107	107	201	Jaspreet	720	GKV Dehradun	1
8	108	108	3011	Sangam	670	GKV Dehradun	1
9	109	109	3011	Suneel	570	GKV Dehradun	1
10	110	110	3011	Sunny	570	GKV Dehradun	1
11	111	111	3011	Sangam	670	GKV Dehradun	1
12	112	112	3011	Sangam	670	GKV Dehradun	1
13	113	113	3011	Sangam	670	GKV Dehradun	1
14	114	114	3011	Sangam	670	GKV Dehradun	1
15	115	115	2012	Harpreet	720	GKV Dehradun	1



```sql
SELECT SUM(marks) AS sum_marks,AVG(marks) AS avg_marks,MIN(marks) AS min_marks,MAX(marks) AS max_marks,COUNT(*) AS Count_entry
FROM GKV_Dehradun
```

	sum_marks	avg_marks	min_marks	max_marks	Count_entry
1	9900	660.000000	420	720	15

Que2= Write a query to count the total number of rows present in any existing table.



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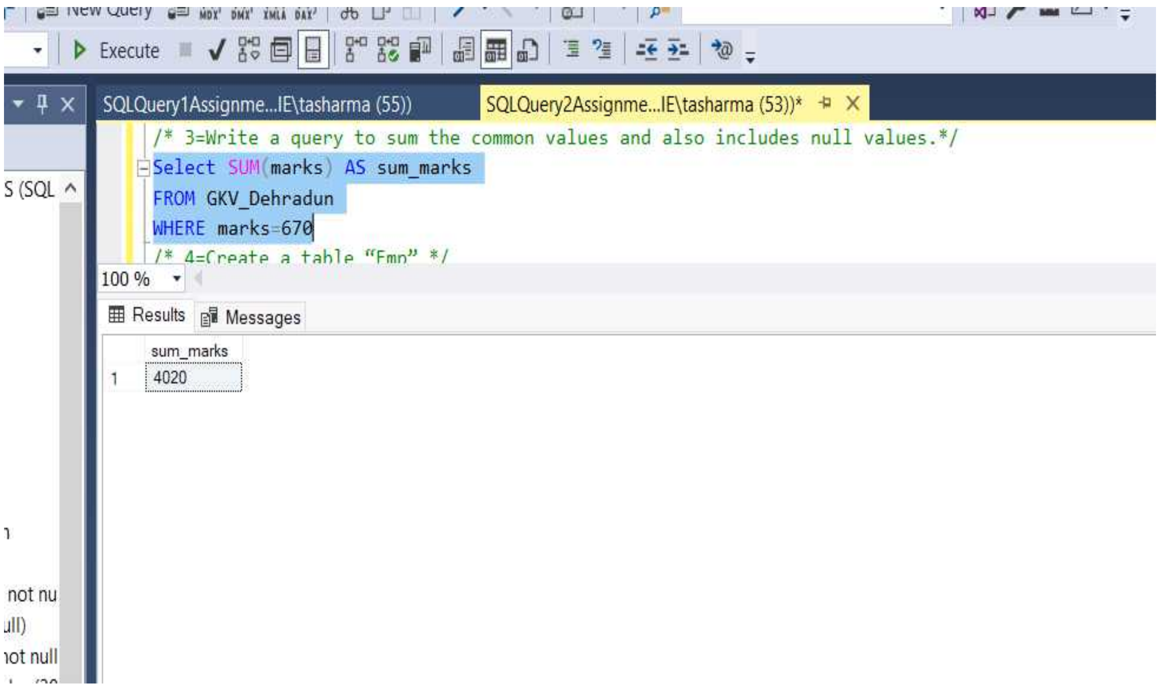
```
/* 2=Write a query to count the total number of rows present in any existing table. */
SELECT COUNT(*) AS Total_rows
FROM GKV_Dehradun
```

```
   Total_rows
1  15
```

Que3= Write a query to sum the common values and also includes null values.



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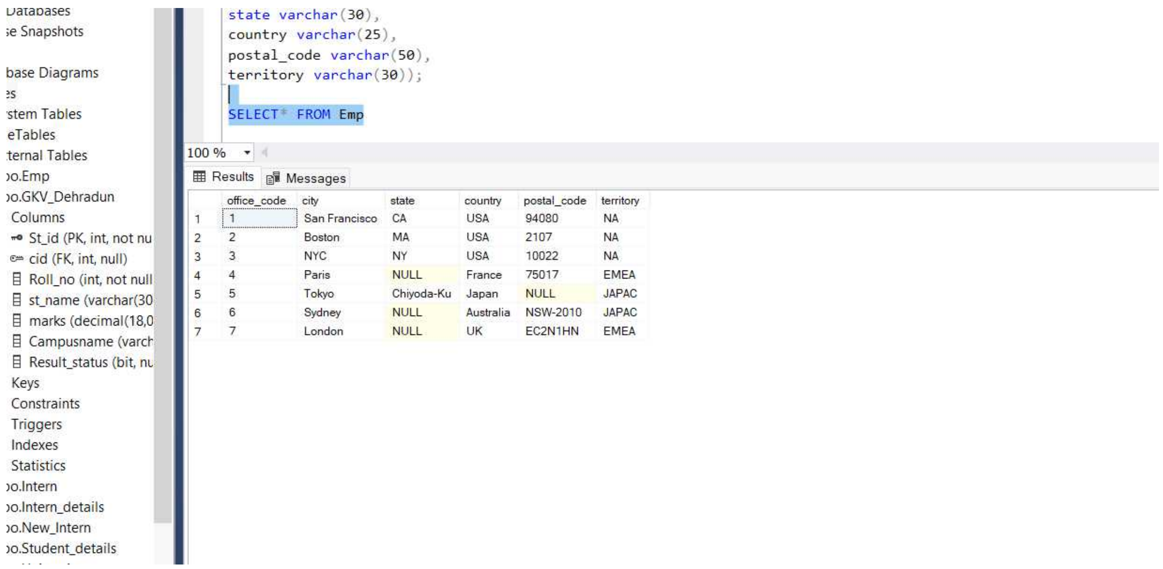
```
/* 3=Write a query to sum the common values and also includes null values.*/
Select SUM(marks) AS sum_marks
FROM GKV_Dehradun
WHERE marks=670
/* 4=Create a table "Emp" */
```

```
   sum_marks
1  4020
```

Que4= Create a table “Emp” as shown below:

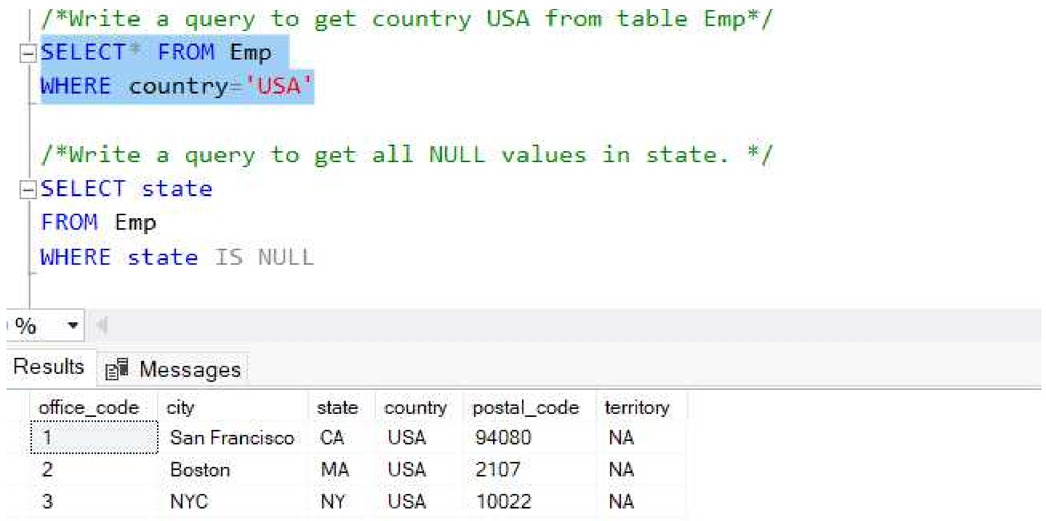
to get country = USA. Write a query to get all NULL values in state.



```sql
state varchar(30),
country varchar(25),
postal_code varchar(50),
territory varchar(30));

SELECT* FROM Emp
```

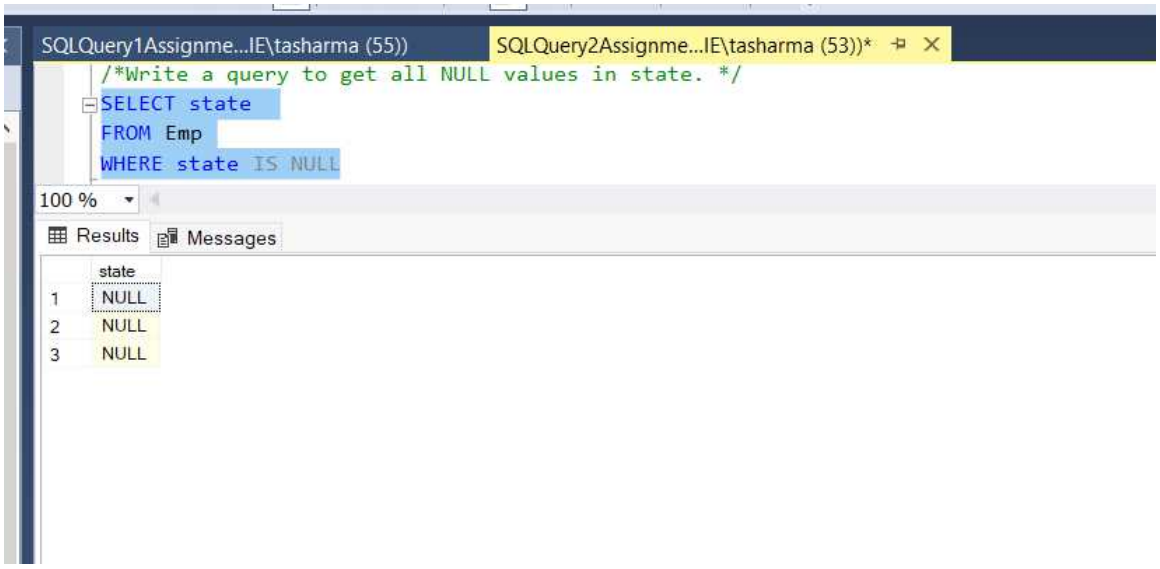
	office_code	city	state	country	postal_code	territory
1	1	San Francisco	CA	USA	94080	NA
2	2	Boston	MA	USA	2107	NA
3	3	NYC	NY	USA	10022	NA
4	4	Paris	NULL	France	75017	EMEA
5	5	Tokyo	Chiyoda-Ku	Japan	NULL	JAPAC
6	6	Sydney	NULL	Australia	NSW-2010	JAPAC
7	7	London	NULL	UK	EC2N1HN	EMEA



```sql
/*Write a query to get country USA from table Emp*/
SELECT* FROM Emp
WHERE country='USA'

/*Write a query to get all NULL values in state. */
SELECT state
FROM Emp
WHERE state IS NULL
```

office_code	city	state	country	postal_code	territory
1	San Francisco	CA	USA	94080	NA
2	Boston	MA	USA	2107	NA
3	NYC	NY	USA	10022	NA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SQLQuery2Assignme...IE\tasharma (53))*
100 %
Results
Messages

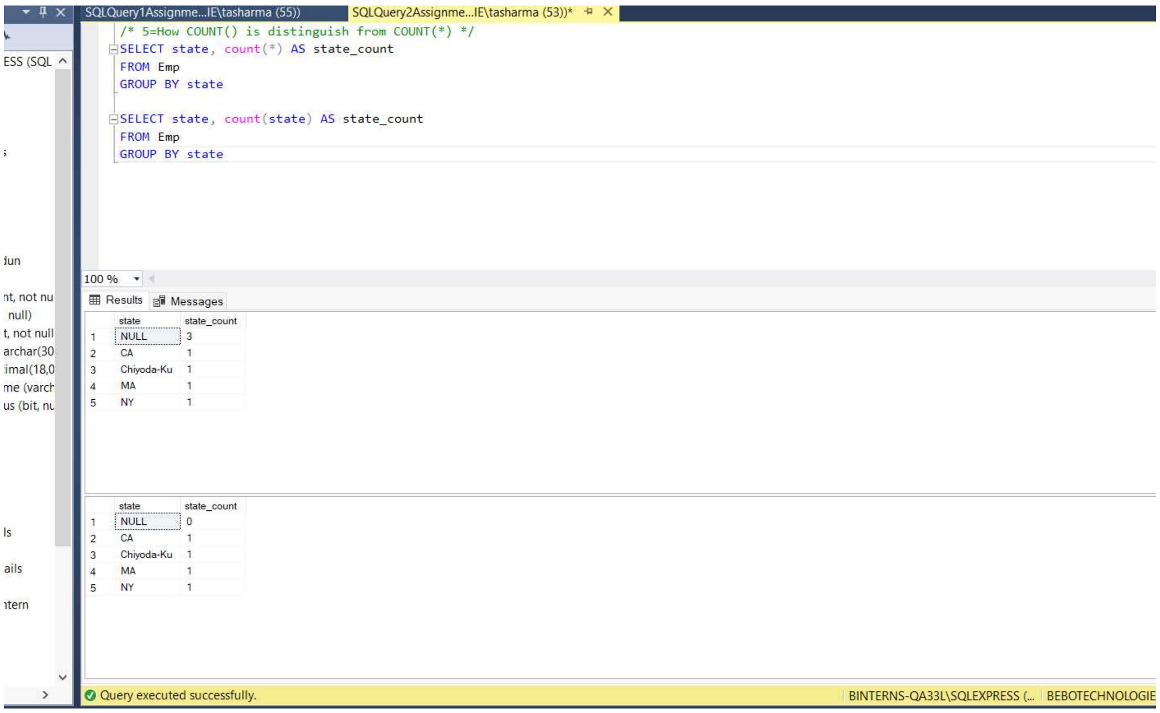
```sql
/*Write a query to get all NULL values in state. */
SELECT state
FROM Emp
WHERE state IS NULL
```

	state
1	NULL
2	NULL
3	NULL

Que5= How COUNT() is distinguish from COUNT(*).

Ans5= The main difference between **COUNT()** and **COUNT(*)** are:

The **count(*)** returns all rows whether column contains null value or not while **count(columnName)** returns the number of rows except null rows.


SQLQuery1Assignme...IE\tasharma (55))
SQLQuery2Assignme...IE\tasharma (53))*
100 %
Results
Messages

```sql
/* 5=How COUNT() is distinguish from COUNT(*) */
SELECT state, count(*) AS state_count
FROM Emp
GROUP BY state

SELECT state, count(state) AS state_count
FROM Emp
GROUP BY state
```

	state	state_count
1	NULL	3
2	CA	1
3	Chiyoda-Ku	1
4	MA	1
5	NY	1

	state	state_count
1	NULL	0
2	CA	1
3	Chiyoda-Ku	1
4	MA	1
5	NY	1

Query executed successfully. BINTERNS-QA33L\SQLEXPRESS (... BEBOTECHNOLOGIE

Que6= Write the difference between Group By and Having clause.

Ans6= Difference between Having clause and Group by clause :

Having Clause:

1. It is used for applying some extra condition to the query.

2. Having cannot be used without groupby clause,in aggregate function,in that case it behaves like where clause.

3. The having clause can contain aggregate functions.

4. It restrict the query output by using some conditions.

GroupBy Clause:

1. The groupby clause is used to group the data according to particular column or row.

2. Groupby can be used without having clause with the select statement.

3. It cannot contain aggregate functions.

4. It groups the output on basis of some rows or columns.

Que7= Write the difference between rank() and Dense Rank().

Ans7= The main differences are:

1. The difference between these two functions comes down to how they handle identical values.

2. RANK and DENSE_RANK will assign the grades the same rank depending on how they fall compared to the other values.

3. However, RANK will then skip the next available ranking value whereas DENSE_RANK would still use the next chronological ranking value.

eg= we have two students who have the same marks,

So with RANK, if the two 90s are given a ranking of 1, the next lowest value would be assigned a rank of 3 skipping over 2. With DENSE_RANK, the next lowest value would be assigned a rank of 2, not skipping over any values.

Que8= Define Lag() and Lead () functions.

Ans8= Lag(): The LAG() function is used to get value from row that precedes the current row.

Lead(): The LEAD() function is used to get value from row that succeeds the current row.

These are the window functions, which perform operations for each row of the partition or window. These functions produce the result for each query row unlikely to the aggregate functions that group them and results in a single row.

The row on which operation occur is termed as current row.

The set of rows which are related to current row or using which function operates on current row is termed as Window.

Que9= Comment: Use proper comments as places.

Ans9= see the sql query file where I use the comments single line and multiline.

Single line notation: --Comment

Multiline notation: /* Comment */