

SQL Quiz Day : 1 (SELECT statement Basics)

- 1- `SELECT 1+NULL / SELECT 1-NULL / SELECT 1*NULL`
- 2- `SELECT 'A'+1`
- 3- `SELECT '1' 'A'`
- 4- `SELECT 'ABC' + 'XYZ'`
- 5- `SELECT 10/4`
- 6- `SELECT 5.0/2.0 , SELECT 5/1.25`
- 7- `SELECT CAST(10 AS FLOAT)/CAST(4 AS FLOAT)`
- 8- `SELECT 1 | 1 , SELECT 1 | 2 , SELECT 2 | 4 ETC.`
- 9- `SELECT $, SELECT 1/$, SELECT 1+ $`
- 10- A TABLE HAS 5 RECORDS (SIMPLE 1 ID COLUMN) TRY
`SELECT SUM(1) , SUM(2),SUM(3) FROM TABLE A.`

BITWISE OPERATORS SQL

- *Bitwise operators in SQL same as other language, perform bit manipulations between two expressions of the integer data type category (int, smallint, tinyint, bit, bigint, binary & varbinary) Bitwise operators convert two integer values to binary bits, perform the AND, OR, or NOT operation on each bit, producing a result. Then converts the result to an integer*

a-AND (&) b- OR (|) c- XOR (^) d- NOT (~)

- *Use these symbols to perform these operators.*

e.g. SELECT 101 & 75 , SELECT 10 | 20 , Select 20 ^ 30 , Select ~ 20

SQL QUIZ

Write a SQL query to find the percentage for Male and Female . Print the output to nearest integer.

Table Name: #temp

Gender
Male
Male
Male
Female
Male
Female

Output :

Male%	Female%
67	33

```
WITH CTE AS
(
Select count(Gender) as total ,COUNT (CASE WHEN Gender='MALE' THEN 1 ELSE NULL END )
AS CNTM,
COUNT (CASE WHEN GENDER='FEMALE' THEN 1 ELSE NULL END ) AS CNTF from #temp A
)
Select ROUND(CAST (CNTM AS FLOAT)/CAST(TOTAL AS FLOAT),2)*100 as [Male%],
ROUND(CAST (CNTF AS FLOAT)/CAST(TOTAL AS FLOAT),2)*100 as [Female%] from CTE
```

SQL QUIZ

- We have one table Demosailes , write Sql query to get desired output.

Input :Demosailes

OrderId	ProdId	Qty
O1	P1	5
O2	P2	1
O3	P3	3

Desired Output :

OrderId	ProdId	Count
O1	P1	1
O1	P1	1
O1	P1	1
O1	P1	1
O1	P1	1
O2	P2	1
O3	P3	1
O3	P3	1
O3	P3	1

```
WITH CTE (ORDERID,ProdId,QTY,ROWS) AS
( SELECT ORDERID,ProdId,QTY, 1 FROM #demosales
  UNION ALL
  SELECT ORDERID,ProdId,QTY,ROWS+1 FROM CTE
  WHERE ROWS < QTY)
SELECT ORDERID , ProdId , 1 AS [Count] FROM CTE
ORDER BY ORDERID;
```


SQL QUIZ DAY-5

Q:Two Tables A & B are given below, Write a SQL query to generate the desired output.

Input Table A :

Column A
AAABBB
AAABBB
AAABBB

Input Table B :

Column B
CCDDDD
CCDDDD

Desired Output

Column A	Column B
AAABBB	CCDDDD
CCDDDD	AAABBB

```
WITH CTE1 AS (Select ColumnA,ROW_NUMBER() over (order
by ColumnA) as RN from #t1 )
,CTE2 AS (Select ColumnB,ROW_NUMBER() over (order by
ColumnB) as RN from #t2)

Select CASE WHEN CTE1.RN=1 THEN ColumnA ELSE ColumnB
END AS ColumnA,
CASE WHEN CTE1.RN=1 THEN ColumnB ELSE ColumnA END AS
ColumnB from CTE1 inner join CTE2
on CTE1.RN=CTE2.RN
```

SQL QUIZ DAY -6

Q:We have one table sequence, write a SQL query to get the desired output.

Name	Sequence
A	1
A	2
A	3
A	5
A	6
A	8
A	9
B	11
C	1
C	2
C	3

Name	Min_Seq	Max_Seq
A	1	3
A	5	6
A	8	9
B	11	11
C	1	3

```
Select Name,MIN(sequence) as MIN_Seq,MAX(sequence) as  
MAX_Seq from (  
Select Name,sequence,sequence-ROW_NUMBER()over  
(partition by name order by name) as diff  
from #seq  
group by name,sequence  
)t  
group by name,diff  
order by name
```

SQL QUIZ DAY-7

Q- Write a SQL query to get desired output .

Input table : Airport

SOURCE	DESTINATION
DELHI	MUMBAI
MUMBAI	DELHI
DELHI	PATNA
BANGALORE	PUNE
PUNE	BANGALORE
CHANDIGARH	CHENNAI
PUNE	MUMBAI
HYDERABAD	GOA
GOA	HYDERABAD

Output:-

SOURCE	DESTINATION
DELHI	MUMBAI
DELHI	PATNA
BANGALORE	PUNE
CHANDIGARH	CHENNAI
PUNE	MUMBAI
GOA	HYDERABAD

```
SELECT DISTINCT  
CASE WHEN SOURCE < DESTINATION THEN SOURCE ELSE  
DESTINATION END AS SOURCE ,  
CASE WHEN SOURCE > DESTINATION THEN SOURCE ELSE  
DESTINATION END AS DESTINATION  
FROM #AIRPORT
```

SQL QUIZ DAY-8

Q: Write a SQL query to get the desired output.

Input Table : Rough

ID
1
2
3
4
5
6
7
8
9
10

Desired Output:

Column1	Column2
1	10
2	9
3	8
4	7
5	6

```
SELECT T.ID AS COLUMN1, B.ID AS COLUMN2
FROM
( SELECT ID, ROW_NUMBER() OVER ( ORDER BY
ID ) AS ARN FROM #ROUGH A) T INNER JOIN
( SELECT ID, ROW_NUMBER() OVER ( ORDER BY
ID DESC) AS BRN FROM #ROUGH B ) B
ON T.ARN=B.BRN
WHERE T.ID < B.ID
```


SQL QUIZ DAY-9

Q: Write a SQL query to get the desired output (missing number from the input series)

Input :Missing_rows

ID
1
3
4
5
6
9
12

Output :

Seq
2
7
8
10
11

```
WITH CTE
AS
(SELECT 1 AS SEQ ,( SELECT MAX(ID) FROM #MISSING_ROWS)AS
MAXSEQ
UNION ALL
SELECT SEQ+1 ,MAXSEQ FROM CTE WHERE SEQ < MAXSEQ )
SELECT SEQ FROM CTE WHERE SEQ NOT IN (SELECT ID FROM
#MISSING_ROWS)
```

SQL QUIZ DAY-10

Q: Write a SQL query to get desired output ?

Input Table : Salary

ID	Fname	Lname	Salary
1	Vishal	Kaushal	8000
2	Akshay	Kumar	9000
3	Zishan	Khan	3000
4	Khan	Zishan	5000
5	Katrina	Kaif	10000
6	Kaushal	Vishal	4000

Output :

Fname	Lname	Salary
Vishal	Kaushal	12000
Akshay	Kumar	9000
Zishan	Khan	8000
Katrina	Kaif	10000

```
SELECT FNAME, LNAME, S1+S2 AS TOTAL FROM (
SELECT A.ID, A.FNAME, A.LNAME, ISNULL(A.SALARY, 0) AS
S1, ISNULL(B.SALARY, 0) AS S2,
CASE WHEN A.ID < B.ID THEN 1
WHEN A.ID > B.ID THEN 0
ELSE 1 END AS T
FROM #SALARY A
LEFT JOIN #SALARY B ON A.FNAME=B.LNAME AND A.LNAME=B.FNAME
) D
WHERE T=1
```

SQL QUIZ DAY-11

Q: Write SQL query to get desired output.

Input Table : Teams

Teamname
INDIA
AUSTRALIA
ENGLAND
NEWZEALAND

Output:

Matches
AUSTRALIA – INDIA
AUSTRALIA – NEWZEALAND
AUSTRALIA – ENGLAND
ENGLAND- INDIA
ENGLAND – NEWZEALAND
INDIA - NEWZEALAND

```
Select CONCAT(A.Teamname, ' - ', B.Teamname) As MATCHES from #teams
A, #teams B
where A.teamname < B.teamname
order by A.Teamname
```

SQL QUIZ DAY-12

Q: Write SQL query to get the max value from Rows?

Input Table : Maxrows

Name	Amount1	Amount2	Amount3
Vishal	5000	6800	4300
Rahul	3500	1000	2200
Simran	9800	9999	9990
Sukarn	5600	7757	8897
Vijay	6647	9898	10000

Output:

Name	MaxAmt
Vishal	6800
Rahul	3500
Simran	9999
Sukarn	8897
Vijay	10000

```
SELECT Name,  
       (SELECT MAX(Amount)  
        FROM (VALUES  
              (Amount1),(Amount2),(Amount3)) AS  
              A(Amount)) AS Maxamt  
FROM #maxrow
```

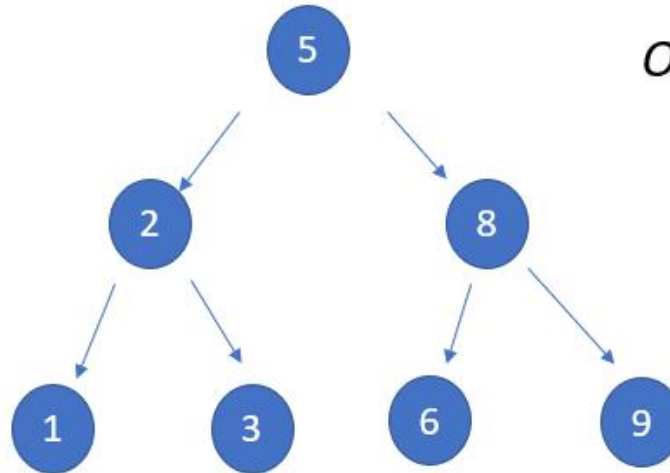
```
Select Name,Max(AMT) as Maxamt from (  
Select Name,Amount1 AS AMT from #maxrow  
union all  
Select Name,amount2 from #maxrow  
union all  
Select name,amount3 from #maxrow ) A  
group by Name
```


SQL QUIZ DAY-13

Q: Write a SQL query to get the nodes of BINARY tree ?

Input Table : Binary

Node	Parent
1	2
3	2
6	8
9	8
2	5
8	5
5	Null



Output:

Node	Type
1	Leaf
2	Inner
3	Leaf
5	Root
6	Leaf
8	Inner
9	Leaf

```
Select Distinct A.node,  
CASE WHEN B.Node is null THEN 'LEAF'  
WHEN A.parent is null THEN 'ROOT'  
ELSE 'INNER' END as node from #binary A  
left join #binary B  
on A.node=B.parent
```

SQL QUIZ DAY-14

Q: Write a SQL query to get the desired output? (Cumulative difference)

Input Table : ABCD

ID	Date	Amount
1	2019-07-01	100
2	2019-07-01	120
3	2019-07-01	110
4	2019-07-02	160
5	2019-07-02	700
6	2019-07-03	200
7	2019-07-03	50

Output:

Date	Difference
2019-07-01	330
2019-07-02	530
2019-07-03	-280

```
WITH CTE AS (  
SELECT TOP 1 RN, DATE, TOTAL, TOTAL AS DIFFERENCE FROM  
(SELECT DATE, SUM(AMOUNT) OVER (PARTITION BY DATE ORDER  
BY DATE ) AS TOTAL,  
DENSE_RANK() OVER (ORDER BY DATE ) AS RN  
FROM #ABCD ) A  
UNION ALL  
SELECT A.RN, A.DATE, A.TOTAL, A.TOTAL - CTE.DIFFERENCE  
FROM (SELECT DATE, SUM(AMOUNT) OVER (PARTITION BY DATE  
ORDER BY DATE ) AS TOTAL,  
DENSE_RANK() OVER (ORDER BY DATE ) AS RN  
FROM #ABCD ) A INNER JOIN CTE  
ON A.RN-1= CTE.RN  
)  
SELECT DISTINCT DATE, DIFFERENCE FROM CTE
```

SQL QUIZ DAY-15

Q: Write SQL query to get the desired output.

Input Table : Attendance

Date	Attendance
2021-07-01	1,2,3,4,6
2021-07-02	1,3,4,5
2021-07-03	1,2,3,4,5,6
2021-07-04	1,2,5

Output:

Date	Present count
2021-07-01	5
2021-07-02	4
2021-07-03	6
2021-07-04	3

```
Select Date, LEN(Attendance)-LEN(REPLACE(Attendance,',',''))+1  
as [Present count] from #attendance
```

SQL QUIZ DAY-16

Q: Write the SQL query to get the desired Output ?

Input Table : Name

ID	Name
1	VISHAL
2	VISHAL
3	VISHAL
4	KAUSHAL
5	KAUSHAL
6	KAUSHAL

Output :

NAME
VISHAL
KAUSHAL
VISHAL
KAUSHAL
VISHAL
KAUSHAL

```
WITH CTE AS (  
  Select Name, ROW_NUMBER() over (Partition by Name  
  order by name) as RN  
  from #ab  
)  
select Name from CTE order by RN, NAME desc
```

SQL WITH VISHAL KAUSHAL

SQL QUIZ DAY-17

Q: Write the SQL query to get desired output.

Input table : Employee

Empid	Name	MonthID	Bonus
1	VISHAL	1	20000
2	VISHAL	6	45000
3	RAHUL	2	73000
4	RAHUL	9	15000

Table : Month

MonthID	Month
1	Jan
2	Feb
3	Mar
4	Apr
5	May
6	Jun
7	Jul
8	Aug
9	Sep
10	Oct
11	Nov
12	Dec

Output:

Empid	Name	Month	Bonus
1	VISHAL	Jan	20000
2	VISHAL	Feb	Null
3	VISHAL	Mar	Null
4	VISHAL	Apr	Null
5	VISHAL	May	Null
6	VISHAL	Jun	45000
7	VISHAL	July	Null
8	VISHAL	Aug	Null
9	VISHAL	Sep	Null
10	VISHAL	Oct	Null
11	VISHAL	Nov	Null
12	VISHAL	Dec	Null
13	RAHUL	Jan	Null
14	RAHUL	Feb	73000
15	RAHUL	Mar	Null
16	RAHUL	Apr	Null
17	RAHUL	May	Null
18	RAHUL	Jun	Null
19	RAHUL	July	Null
20	RAHUL	Aug	Null
21	RAHUL	Sep	15000
22	RAHUL	Oct	Null
23	RAHUL	Nov	Null
24	RAHUL	Dec	Null

```
With CTE As
(
Select distinct
A.Empid,A.Name,B.Monthname,B.Monthid from #employee
A , #month B
)
Select C.EMPID,C.NAME,Monthname,E.Bonus from CTE C
left join #employee E
on C.EMPid=E.empid
and C.MOnthid=E.monthid
order by EMPID,C.Monthid
```

SQL QUIZ DAY-18

Q: Write the SQL query to get the desired output.

Input Table A, B

ID	ID
1	1
1	1
1	1
1	1
1	1
2	0
2	0
2	0
2	0
2	0

Desired Output:

ID
0
0
0
0
0
1
1
1
1
1
2
2
2
2
2

```
SELECT * FROM #B WHERE ID NOT IN (SELECT ID  
FROM #A)  
UNION ALL  
SELECT * FROM #B WHERE ID IN (SELECT ID FROM #A)  
UNION ALL  
SELECT * FROM #A WHERE ID NOT IN (SELECT ID FROM  
#B)
```

SQL QUIZ DAY-19

Q: Write the SQL query to get the desired output.

Input Table: Gender

ID	Name	Gender
1	Anita	Male
2	Rakesh	Female
3	Arjun	Female
4	John	Female
5	Deepika	Male
6	Shivani	Male

Output :

ID	Name	Gender
1	Anita	Female
2	Rakesh	Male
3	Arjun	Male
4	John	Male
5	Deepika	Female
6	Shivani	Female

```
Select ID,NAME, CASE WHEN GENDER='MALE' THEN 'FEMALE'
WHEN GENDER='Female' THEN 'MALE' END AS GENDER from
#gender - Select records

--Update table
Update #gender
Set Gender =(CASE WHEN GENDER='MALE' THEN 'FEMALE'
WHEN GENDER='Female' THEN 'MALE' END )
```

SQL QUIZ DAY-20

Q: Write a SQL query to get the Desired output from Input Table.

Input Table: Employee

Empid	Name	Gender	Department
1	Alexa	Female	IT
2	Naman	Male	Finance
3	Rita	Female	Finance
4	Priya	Female	HR
5	Shivangi	Female	HR
6	Rahul	Male	IT
7	Tanya	Female	Finance
8	Arun	Male	HR
9	Lakshya	Male	IT
10	Deepika	Female	HR

Output :

Department	TotalMale	TotalFemale
Finance	1	2
HR	1	3
IT	2	1

```
SELECT DEPARTMENT , SUM(CASE WHEN GENDER = 'MALE' THEN 1 ELSE 0 END) AS TOTALMALE, SUM(CASE WHEN GENDER = 'FEMALE' THEN 1 ELSE 0 END) AS TOTALFEMALE FROM #EMPLOYEE GROUP BY DEPARTMENT
```


SQL QUIZ DAY-21

Q: Write a SQL query to get the desired output?

Input Table : Transaction

ID	Transaction_date	Amount
1001	2021-07-15 13:03:25	2000CR
1001	2021-07-15 13:10:39	3000CR
1001	2021-07-15 13:20:47	2000DR
1005	2021-07-15 13:08:20	11550DR
1005	2021-07-15 13:33:32	23650CR

Desired Output :

ID	Avail_Amount
1001	3000
1005	12100

```
WITH CTE AS (  
  SELECT ID, TRANSACTION_DATE, AMOUNT,  
         REVERSE(SUBSTRING(REVERSE(AMOUNT), 0, 3)) AS STR,  
         CAST(REVERSE(SUBSTRING(REVERSE(AMOUNT), 3, LEN(AMOUNT))) AS INT) AS AMOUNT1  
  FROM #TRANSACTION  
)  
SELECT ID, AMT1-AMT2 AS AVAIL_AMOUNT FROM(  
  SELECT ID, SUM(CASE WHEN STR='CR' THEN AMOUNT1  
END ) AS AMT1,  
  SUM(CASE WHEN STR='DR' THEN AMOUNT1 END) AS AMT2  
FROM CTE  
GROUP BY ID)A
```

SQL QUIZ DAY-22

Q: Write the SQL Query to get the desired output .

Input Table: Employee

ID	Name	Salary	Manager_Id
10	Anil	50,000	18
11	Vikas	75,000	16
12	Nisha	40,000	18
13	Nidhi	60,000	17
14	Priya	80,000	18
15	Mohit	45,000	18
16	Rajesh	90,000	-
17	Raman	55,000	16
18	Santosh	65,000	17

Output :

Manager_id	Manager	Avg_salary_under_manager
16	Rajesh	65000
17	Raman	62500
18	Santosh	53750

```
SELECT  
A.MANAGER_ID,B.NAME,A.AVG_SALARY_UNDER_MANAGER  
FROM #EMPLOYEE B JOIN  
(  
SELECT MANAGER_ID , AVG(Salary) AS  
AVG_SALARY_UNDER_MANAGER FROM #EMPLOYEE  
GROUP BY MANAGER_ID ) A  
ON B.ID=A.MANAGER_ID
```

SQL QUIZ DAY-23

Q: Write the SQL Query to get the desired output .

Input String :

AAA,,,BCDW,,,,,DEF,,GHI,,,,,,,,,,,,LMN,,,,XY

Output String :

AAA,BCDW,DEF,GHI,LMN,XY

Solution:

```
Declare @string Varchar(1000)
= 'AAA,,,BCDW,,,,,DEF,,GHI,,,,,,,,,,,,LMN,,,,XY'
Select REPLACE(REPLACE(REPLACE(@string, ',', '*'), '*', ''), '*', ',')
```


SQL DAY QUIZ-24

Q:Write the SQL query to get desired output.

Input Table : Name

Output :

ID	Name
1	RAJA RAMMOHAN RAI
2	SACHIN RAMESH TENDULKAR
3	ABDUL KALAM SAHIB
4	MICROSOFT SQL SERVER
5	YEDURAPPA V REDDY

FIRSTNAME	MIDDLENAME	LASTNAME
RAJA	RAMMOHAN	RAI
SACHIN	RAMESH	TENDULKAR
ABDUL	KALAM	SAHIB
MICROSOFT	SQL	SERVER
YEDURAPP	V	REDDY

```
SELECT NAME, LEFT(NAME, CHARINDEX(' ', NAME)) AS FIRSTNAME,
RTRIM(LTRIM(REPLACE(REPLACE(NAME, SUBSTRING(NAME, 1, CHARINDEX(' ', NAME) - 1), ' '),
REVERSE( LEFT( REVERSE(NAME), CHARINDEX(' ', REVERSE(NAME)) - 1 ) ), ' '))) AS
MIDDLENAME,
RIGHT(NAME, CHARINDEX(' ', REVERSE(NAME))) AS LASTNAME
FROM #NAME
```


SQL QUIZ DAY-25

Q: Write the SQL query to get the desired output. **Get the Employee Name who joined before Manager.**

Input Table : Employee

Name	MgrName	DOJ
Vishal	Rashmi	2021-01-01
Rashmi	Ankit	2021-01-02
Anand	Ankit	2021-01-06
Ankit	Swapnil	2021-01-05
Arjun	Ankit	2021-01-04

Output:

Name
Vishal
Rashmi
Arjun

```
Select A.Name,A.Doj from #employee A
join #employee b on A.MgrName=B.Name
where A.Doj < B.Doj
order by DOJ
```

SQL QUIZ DAY-26

Q: Write the SQL query to get desired output.

Input Table: Retail

Retailers	Brand
AMAZON	ONEPLUS
WALMART	REALME
SNAPDEAL	CELKON
FLIPKART	MI

Output :

Retailers	ONEPLUS	REALME	CELKON	MI
AMAZON	YES	NO	NO	NO
FLIPKART	NO	NO	NO	YES
SNAPDEAL	NO	NO	YES	NO
WALMART	NO	YES	NO	NO

```
SELECT RETAILERS, CASE WHEN ONEPLUS IS NOT NULL THEN 'YES' ELSE 'NO' END
AS ONEPLUS ,
CASE WHEN REALME IS NOT NULL THEN 'YES' ELSE 'NO' END AS REALME,
CASE WHEN CELKON IS NOT NULL THEN 'YES' ELSE 'NO' END AS CELKON,
CASE WHEN MI IS NOT NULL THEN 'YES' ELSE 'NO' END AS MI FROM (
SELECT RETAILERS, ONEPLUS, REALME, CELKON, MI AS MI FROM
( SELECT RETAILERS, BRAND FROM #RETAIL ) AS ST
PIVOT
(MAX(BRAND) FOR BRAND IN (ONEPLUS, REALME, CELKON, MI)
) AS PT
) T
```

SQL QUIZ DAY-27

Q: Write the SQL Query to get 2nd highest sale for every customer without using window functions.

Input Table: Customer

Cust_ID	Customer	Sale
1	Ravi	2000
1	Ravi	5000
1	Ravi	3500
2	Ashwin	650
2	Ashwin	930
2	Ashwin	700
3	Robby	8000
3	Robby	7500
3	Robby	9500

Output:

Customer	Second_max
Ravi	3500
Ashwin	700
Robby	8000

```
SELECT S.CUSTOMER, MAX(S.SALE) AS Second_max
FROM #SALES S WHERE S.SALE <
(SELECT MAX(SALE) FROM #SALES S1
WHERE S1.CUSTOMER = S.CUSTOMER
)
GROUP BY S.CUSTOMER;
```