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SQL SERVER INTERVIEW QUESTIONS ANSWERS

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Here our step by step SQL Server Interview Questions/ TSQL Queries asked during interview.

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Set-1: Sql Server Basic Interview Query

Tables:-

EmployeeDetail table

	EmployeeID	FirstName	LastName	Salary	JoiningDate	Department	Gender
1	1	Vikas	Ahlawat	600000.00	2013-02-15 11:16:28.290	IT	Male
2	2	nikita	Jain	530000.00	2014-01-09 17:31:07.793	HR	Female
3	3	Ashish	Kumar	1000000.00	2014-01-09 10:05:07.793	IT	Male
4	4	Nikhil	Sharma	480000.00	2014-01-09 09:00:07.793	HR	Male
5	5	anish	kadian	500000.00	2014-01-09 09:31:07.793	Payroll	Male

1. Write a query to get all employee detail from "EmployeeDetail" table

ANS:

MS SQL Server: `SELECT * FROM EmployeeDetail`

Oracle: `SELECT * FROM EmployeeDetail`

MySQL: `SELECT * FROM EmployeeDetail`

Results

Messages

	EmployeeID	FirstName	LastName	Salary	JoiningDate	Department	Gender
1	1	Vikas	Ahlawat	600000.00	2013-02-15 11:16:28.290	IT	Male
2	2	nikita	Jain	530000.00	2014-01-09 17:31:07.793	HR	Female
3	3	Ashish	Kumar	1000000.00	2014-01-09 10:05:07.793	IT	Male
4	4	Nikhil	Sharma	480000.00	2014-01-09 09:00:07.793	HR	Male
5	5	anish	kadian	500000.00	2014-01-09 09:31:07.793	Payroll	Male

2. Write a query to get only "FirstName" column from "EmployeeDetail" table

ANS:

MS SQL Server: `SELECT FirstName FROM EmployeeDetail`

Oracle: `SELECT FirstName FROM EmployeeDetail`

MySQL: `SELECT FirstName FROM EmployeeDetail`

	FirstName
1	Vikas
2	nikita
3	Ashish
4	Nikhil
5	anish

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3. Write a query to get FirstName in upper case as "First Name".

ANS:

MS SQL Server: `SELECT UPPER(FirstName) AS [First Name] FROM EmployeeDetail`

Oracle: `SELECT UPPER(FirstName) AS [First Name] FROM EmployeeDetail`

MySQL: `SELECT UPPER(FirstName) AS [First Name] FROM EmployeeDetail`

	First Name
1	VIKAS
2	NIKITA
3	ASHISH
4	NIKHIL
5	ANISH

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4. Write a query to get FirstName in lower case as "First Name".

ANS:

MS SQL Server: `SELECT LOWER(FirstName) AS [First Name] FROM EmployeeDetail`

Oracle: `SELECT LOWER(FirstName) AS [First Name] FROM EmployeeDetail`

MySQL: `SELECT LOWER(FirstName) AS [First Name] FROM EmployeeDetail`

	First Name
1	vikas
2	nikita
3	ashish
4	nikhil
5	anish

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5. Write a query for combine FirstName and LastName and display it as "Name" (also include white space between first name & last name)

ANS:

MS SQL Server: `SELECT FirstName + ' ' + LastName AS [Name] FROM EmployeeDetail`

Oracle: `SELECT FirstName || ' ' || LastName AS [Name] FROM EmployeeDetail`

MySQL: `SELECT CONCAT(FirstName, ' ', LastName) AS [Name] FROM EmployeeDetail`

Results		Messages
	Name	copyright@interviewquestionspdf.com
1	Vikas Ahlawat	
2	nikita Jain	
3	Ashish Kumar	
4	Nikhil Shama	
5	anish kadian	

6. Select employee detail whose name is "Vikas"

ANS:

MS SQL Server: `SELECT * FROM EmployeeDetail WHERE FirstName = 'Vikas'`

Oracle: `SELECT * FROM EmployeeDetail WHERE FirstName = 'Vikas'`

MySQL: `SELECT * FROM EmployeeDetail WHERE FirstName = 'Vikas'`

	EmployeeID	FirstName	LastName	Salary	JoiningDate	Department	Gender
1	1	Vikas	Ahlawat	600000.00	2013-02-15 11:16:28.290	IT	Male

7. Get all employee detail from EmployeeDetail table whose "FirstName" start with latter 'a'.

ANS:

MS SQL Server: `SELECT * FROM EmployeeDetail WHERE FirstName like 'a%'`

Oracle: `SELECT * FROM EmployeeDetail WHERE FirstName like 'a%'`

MySQL: `SELECT * FROM EmployeeDetail WHERE FirstName like 'a%'`

	EmployeeID	FirstName	LastName	Salary	JoiningDate	Department	Gender
1	3	Ashish	Kumar	1000000.00	2014-01-09 10:05:07.793	IT	Male
2	5	anish	kadian	500000.00	2014-01-09 09:31:07.793	Payroll	Male

8. Get all employee details from EmployeeDetail table whose "FirstName" contains 'k'

ANS:

MS SQL Server: `SELECT * FROM EmployeeDetail WHERE FirstName like '%k%'`

Oracle: `SELECT * FROM EmployeeDetail WHERE FirstName like '%k%'`

MySQL: `SELECT * FROM EmployeeDetail WHERE FirstName like '%k%'`

	EmployeeID	FirstName	LastName	Salary	JoiningDate	Department	Gender
1	1	Vikas	Ahlawat	600000.00	2013-02-15 11:16:28.290	IT	Male
2	2	nikita	Jain	530000.00	2014-01-09 17:31:07.793	HR	Female
3	4	Nikhil	Sharma	480000.00	2014-01-09 09:00:07.793	HR	Male

9. Get all employee details from EmployeeDetail table whose "FirstName" end with 'h'

ANS:

MS SQL Server: `SELECT * FROM EmployeeDetail WHERE FirstName like '%h'`

Oracle: `SELECT * FROM EmployeeDetail WHERE FirstName like '%h'`

MySQL: `SELECT * FROM EmployeeDetail WHERE FirstName like '%h'`

	EmployeeID	FirstName	LastName	Salary	JoiningDate	Department	Gender
1	3	Ashish	Kumar	1000000.00	2014-01-09 10:05:07.793	IT	Male
2	5	anish	kadian	500000.00	2014-01-09 09:31:07.793	Payroll	Male

10. Get all employee detail from EmployeeDetail table whose "FirstName" start with any single character between 'a-p'

ANS:

MS SQL Server: `SELECT * FROM EmployeeDetail WHERE FirstName like '[a-p]%'`

Oracle: `SELECT * FROM EmployeeDetail WHERE FirstName like '[a-p]%'`

MySQL: `SELECT * FROM EmployeeDetail WHERE FirstName like '[a-p]%'`

	EmployeeID	FirstName	LastName	Salary	JoiningDate	Department	Gender
1	2	nikita	Jain	530000.00	2014-01-09 17:31:07.793	HR	Female
2	3	Ashish	Kumar	1000000.00	2014-01-09 10:05:07.793	IT	Male
3	4	Nikhil	Sharma	480000.00	2014-01-09 09:00:07.793	HR	Male
4	5	anish	kadian	500000.00	2014-01-09 09:31:07.793	Payroll	Male

Set-2: Sql Server Basic Interview Query

Related Tables:-

EmployeeDetail table

	EmployeeID	FirstName	LastName	Salary	JoiningDate	Department	Gender
1	1	Vikas	Ahlawat	600000.00	2013-02-15 11:16:28.290	IT	Male
2	2	nikita	Jain	530000.00	2014-01-09 17:31:07.793	HR	Female
3	3	Ashish	Kumar	1000000.00	2014-01-09 10:05:07.793	IT	Male
4	4	Nikhil	Shama	480000.00	2014-01-09 09:00:07.793	HR	Male
5	5	anish	kadian	500000.00	2014-01-09 09:31:07.793	Payroll	Male

Questions Answers

11). Get all employee detail from EmployeeDetail table whose "FirstName" not start with any single character between 'a-p'

Ans: `SELECT * FROM [EmployeeDetail] WHERE FirstName like '[^a-p]%'`

	EmployeeID	FirstName	LastName	Salary	JoiningDate	Department	Gender
1	1	Vikas	Ahlawat	600000.00	2013-02-15 11:16:28.290	IT	Male

12). Get all employee detail from EmployeeDetail table whose "Gender" end with 'le' and contain 4 letters. The Underscore(_) Wildcard Character represents any single character.

Ans: `SELECT * FROM [EmployeeDetail] WHERE Gender like '_le' --there are two "_"`

	EmployeeID	FirstName	LastName	Salary	JoiningDate	Department	Gender
1	1	Vikas	Ahlawat	600000.00	2013-02-15 11:16:28.290	IT	Male
2	3	Ashish	Kumar	1000000.00	2014-01-09 10:05:07.793	IT	Male
3	4	Nikhil	Shama	480000.00	2014-01-09 09:00:07.793	HR	Male
4	5	anish	kadian	500000.00	2014-01-09 09:31:07.793	Payroll	Male

13). Get all employee detail from EmployeeDetail table whose "FirstName" start with 'A' and contain 5 letters.

Ans: `SELECT * FROM [EmployeeDetail] WHERE FirstName like 'A____' --there are four "_"`

	EmployeeID	FirstName	LastName	Salary	JoiningDate	Department	Gender
1	5	anish	kadian	500000.00	2014-01-09 09:31:07.793	Payroll	Male

14). Get all employee detail from EmployeeDetail table whose "FirstName" containing '%'. ex:- "Vik%as".

Ans: `SELECT * FROM [EmployeeDetail] WHERE FirstName like '%[%]%'`

--According to our table it would return 0 rows, because no name containing '%'

15). Get all unique "Department" from EmployeeDetail table.

Ans: **SELECT DISTINCT**(Department) **FROM** [EmployeeDetail]

	Department
1	HR
2	IT
3	Payroll

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16). Get the highest "Salary" from EmployeeDetail table.

Ans: **SELECT MAX**(Salary) **FROM** [EmployeeDetail]

	(No column name)
1	1000000.00

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17). Get the lowest "Salary" from EmployeeDetail table.

Ans: **SELECT MIN**(Salary) **FROM** [EmployeeDetail]

	(No column name)
1	480000.00

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SQL SERVER DATE RELATED INTERVIEW QUERY

18). Show "JoiningDate" in "dd mmm yyyy" format, ex- "15 Feb 2013"

Ans: **SELECT CONVERT**(VARCHAR(20),JoiningDate,106) **FROM** [EmployeeDetail]

	(No column name)
1	15 Feb 2013
2	09 Jan 2014
3	09 Jan 2014
4	09 Jan 2014
5	09 Jan 2014

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19). Show "JoiningDate" in "yyyy/mm/dd" format, ex- "2013/02/15"

Ans: **SELECT CONVERT**(VARCHAR(20),JoiningDate,111) **FROM** [EmployeeDetail]

	(No column name)
1	2013/02/15
2	2014/01/09
3	2014/01/09
4	2014/01/09
5	2014/01/09

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20). Show only time part of the "JoiningDate".

Ans: **SELECT CONVERT**(VARCHAR(20),JoiningDate,108) **FROM** [EmployeeDetail]

	(No column name)
1	11:16:28
2	17:31:07
3	10:05:07
4	09:00:07
5	09:31:07

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Set-3: Sql Server Date-Time Interview Query

(Date Time related Queries)

Related Table:-

EmployeeDetail table

	EmployeeID	FirstName	LastName	Salary	JoiningDate	Department	Gender
1	1	Vikas	Ahlawat	600000.00	2013-02-15 11:16:28.290	IT	Male
2	2	nikita	Jain	530000.00	2014-01-09 17:31:07.793	HR	Female
3	3	Ashish	Kumar	1000000.00	2014-01-09 10:05:07.793	IT	Male
4	4	Nikhil	Sharma	480000.00	2014-01-09 09:00:07.793	HR	Male
5	5	anish	kadian	500000.00	2014-01-09 09:31:07.793	Payroll	Male

SQL DATETIME RELATED QUERIES

21). Get only Year part of "JoiningDate".

Ans: `SELECT DATEPART(YEAR, JoiningDate) FROM [EmployeeDetail]`

	(No column name)
1	2013
2	2014
3	2014
4	2014
5	2014

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22). Get only Month part of "JoiningDate".

Ans: `SELECT DATEPART(MONTH,JoiningDate) FROM [EmployeeDetail]`

23). Get system date.

Ans: `SELECT GETDATE()`

24). Get UTC date.

Ans: `SELECT GETUTCDATE()`

25). Get the first name, current date, joiningdate and diff between current date and joining date in months.

Ans: `SELECT FirstName, GETDATE() [Current Date], JoiningDate, DATEDIFF(MM,JoiningDate,GETDATE()) AS [Total Months] FROM [EmployeeDetail]`

	FirstName	Current Date	JoiningDate	Total Months
1	Vikas	2014-07-08 11:50:34.600	2013-02-15 11:16:28.290	17
2	nikita	2014-07-08 11:50:34.600	2014-01-09 17:31:07.793	6
3	Ashish	2014-07-08 11:50:34.600	2014-01-09 10:05:07.793	6
4	Nikhil	2014-07-08 11:50:34.600	2014-01-09 09:00:07.793	6
5	anish	2014-07-08 11:50:34.600	2014-01-09 09:31:07.793	6

26). Get the first name, current date, joiningdate and diff between current date and

joining date in days.

Ans: `SELECT FirstName, GETDATE() [Current Date], JoiningDate, DATEDIFF(DD,JoiningDate,GETDATE()) AS [Total Months] FROM [EmployeeDetail]`

	FirstName	Current Date	JoiningDate	Total Months
1	Vikas	2014-07-08 11:52:09.247	2013-02-15 11:16:28.290	508
2	nikita	2014-07-08 11:52:09.247	2014-01-09 17:31:07.793	180
3	Ashish	2014-07-08 11:52:09.247	2014-01-09 10:05:07.793	180
4	Nikhil	2014-07-08 11:52:09.247	2014-01-09 09:00:07.793	180
5	anish	2014-07-08 11:52:09.247	2014-01-09 09:31:07.793	180

27). Get all employee details from EmployeeDetail table whose joining year is 2013.

Ans: `SELECT * FROM [EmployeeDetail] WHERE DATEPART(YYYY,JoiningDate) = '2013'`

	EmployeeID	FirstName	LastName	Salary	JoiningDate	Department	Gender
1	1	Vikas	Ahlawat	600000.00	2013-02-15 11:16:28.290	IT	Male

28). Get all employee details from EmployeeDetail table whose joining month is Jan(1).

Ans: `SELECT * FROM [EmployeeDetail] WHERE DATEPART(MM,JoiningDate) = '1'`

	EmployeeID	FirstName	LastName	Salary	JoiningDate	Department	Gender
1	2	nikita	Jain	530000.00	2014-01-09 17:31:07.793	HR	Female
2	3	Ashish	Kumar	1000000.00	2014-01-09 10:05:07.793	IT	Male
3	4	Nikhil	Sharma	480000.00	2014-01-09 09:00:07.793	HR	Male
4	5	anish	kadian	500000.00	2014-01-09 09:31:07.793	Payroll	Male

29). Get all employee details from EmployeeDetail table whose joining date between "2013-01-01" and "2013-12-01".

Ans: `SELECT * FROM [EmployeeDetail] WHERE JoiningDate BETWEEN '2013-01-01' AND '2013-12-01'`

	EmployeeID	FirstName	LastName	Salary	JoiningDate	Department	Gender
1	1	Vikas	Ahlawat	600000.00	2013-02-15 11:16:28.290	IT	Male

30). Get how many employee exist in "EmployeeDetail" table.

Ans: `SELECT COUNT(*) FROM [EmployeeDetail]`

Set-4: Sql Server Salary Interview Query (Salary

Related Queries)

Related Tables:-

EmployeeDetail table

	EmployeeID	FirstName	LastName	Salary	JoiningDate	Department	Gender
1	1	Vikas	Ahlawat	600000.00	2013-02-15 11:16:28.290	IT	Male
2	2	nikita	Jain	530000.00	2014-01-09 17:31:07.793	HR	Female
3	3	Ashish	Kumar	1000000.00	2014-01-09 10:05:07.793	IT	Male
4	4	Nikhil	Shama	480000.00	2014-01-09 09:00:07.793	HR	Male
5	5	anish	kadian	500000.00	2014-01-09 09:31:07.793	Payroll	Male

31. Select only one/top 1 record from "EmployeeDetail" table.

Ans: `SELECT TOP 1 * FROM [EmployeeDetail]`

	EmployeeID	FirstName	LastName	Salary	JoiningDate	Department	Gender
1	1	Vikas	Ahlawat	600000.00	2013-02-15 11:16:28.290	IT	Male

32. Select all employee detail with First name "Vikas", "Ashish", and "Nikhil".

Ans: `SELECT * FROM [EmployeeDetail] WHERE FirstName IN('Vikas','Ashish','Nikhil')`

	EmployeeID	FirstName	LastName	Salary	JoiningDate	Department	Gender
1	1	Vikas	Ahlawat	600000.00	2013-02-15 11:16:28.290	IT	Male
2	3	Ashish	Kumar	1000000.00	2014-01-09 10:05:07.793	IT	Male
3	4	Nikhil	Shama	480000.00	2014-01-09 09:00:07.793	HR	Male

33. Select all employee detail with First name not in "Vikas", "Ashish", and "Nikhil".

Ans: `SELECT * FROM [EmployeeDetail] WHERE FirstName NOT IN('Vikas','Ashish','Nikhil')`

	EmployeeID	FirstName	LastName	Salary	JoiningDate	Department	Gender
1	2	nikita	Jain	530000.00	2014-01-09 17:31:07.793	HR	Female
2	5	anish	kadian	500000.00	2014-01-09 09:31:07.793	Payroll	Male

34. Select first name from "EmployeeDetail" table after removing white spaces from right side

Ans: `SELECT RTRIM(FirstName) AS [FirstName] FROM [EmployeeDetail]`

	FirstName
1	Vikas
2	nikita
3	Ashish
4	Nikhil
5	anish

35. Select first name from "EmployeeDetail" table after removing white spaces from

left side

Ans: `SELECT LTRIM(FirstName) AS [FirstName] FROM [EmployeeDetail]`

	FirstName
1	Vikas
2	nikita
3	Ashish
4	Nikhil
5	anish

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36. Display first name and Gender as M/F.(if male then M, if Female then F)

Ans: `SELECT FirstName, CASE WHEN Gender = 'Male' THEN 'M'`
`WHEN Gender = 'Female' THEN 'F' END AS [Gender]`
`FROM [EmployeeDetail]`

	FirstName	Gender
1	Vikas	M
2	nikita	F
3	Ashish	M
4	Nikhil	M
5	anish	M

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37. Select first name from "EmployeeDetail" table prefixed with "Hello "

Ans: `SELECT 'Hello ' + FirstName FROM [EmployeeDetail]`

	(No column name)
1	Hello Vikas
2	Hello nikita
3	Hello Ashish
4	Hello Nikhil
5	Hello anish

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38. Get employee details from "EmployeeDetail" table whose Salary greater than 600000

Ans: `SELECT * FROM [EmployeeDetail] WHERE Salary > 600000`

	EmployeeID	FirstName	LastName	Salary	JoiningDate	Department	Gender
1	3	Ashish	Kumar	1000000.00	2014-01-09 10:05:07.793	IT	Male

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39. Get employee details from "EmployeeDetail" table whose Salary less than 700000

Ans: `SELECT * FROM [EmployeeDetail] WHERE Salary < 700000`

	EmployeeID	FirstName	LastName	Salary	JoiningDate	Department	Gender
1	1	Vikas	Ahlawat	600000.00	2013-02-15 11:16:28.290	IT	Male
2	2	nikita	Jain	530000.00	2014-01-09 17:31:07.793	HR	Female
3	4	Nikhil	Shama	480000.00	2014-01-09 09:00:07.793	HR	Male
4	5	anish	kadian	500000.00	2014-01-09 09:31:07.793	Payroll	Male

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40. Get employee details from "EmployeeDetail" table whose Salary between 500000

than 600000

Ans: `SELECT * FROM [EmployeeDetail] WHERE Salary BETWEEN 500000 AND 600000`

	EmployeeID	FirstName	LastName	Salary	JoiningDate	Department	Gender
1	1	Vikas	Ahlawat	600000.00	2013-02-15 11:16:28.290	IT	Male
2	2	nikita	Jain	530000.00	2014-01-09 17:31:07.793	HR	Female
3	5	anish	kadian	500000.00	2014-01-09 09:31:07.793	Payroll	Male

41. Select second highest salary from "EmployeeDetail" table.

Ans: `SELECT TOP 1 Salary FROM`

`(SELECT TOP 2 Salary FROM [EmployeeDetail] ORDER BY Salary DESC) T ORDER BY Salary ASC`

Results		Messages	
	Salary	copyright@interviewquestionspdf.com	
1	600000.00		

Set-5: Sql Server Group By Interview Query

(Group By Related Queries)

Related Table:

EmployeeDetail table

	EmployeeID	FirstName	LastName	Salary	JoiningDate	Department	Gender
1	1	Vikas	Ahlawat	600000.00	2013-02-15 11:16:28.290	IT	Male
2	2	nikita	Jain	530000.00	2014-01-09 17:31:07.793	HR	Female
3	3	Ashish	Kumar	1000000.00	2014-01-09 10:05:07.793	IT	Male
4	4	Nikhil	Sharma	480000.00	2014-01-09 09:00:07.793	HR	Male
5	5	anish	kadian	500000.00	2014-01-09 09:31:07.793	Payroll	Male

ProjectDetail table

	ProjectDetailID	EmployeeDetailID	ProjectName
1	1	1	Task Track
2	2	1	CLP
3	3	1	Survey Managment
4	4	2	HR Managment
5	5	3	Task Track
6	6	3	GRS
7	7	3	DDS
8	8	4	HR Managment
9	9	6	GL Managment

QUESTIONS ANSWERS

42. Write the query to get the department and department wise total(sum) salary from "EmployeeDetail" table.

Ans: `SELECT Department, SUM(Salary) AS [Total Salary] FROM [EmployeeDetail] GROUP BY Department`

	Department	Total Salary
1	HR	1010000.00
2	IT	1600000.00
3	Payroll	500000.00

43. Write the query to get the department and department wise total(sum) salary, display it in ascending order according to salary.

Ans: `SELECT Department, SUM(Salary) AS [Total Salary] FROM [EmployeeDetail] GROUP BY Department ORDER BY SUM(Salary) ASC`

	Department	Total Salary
1	Payroll	500000.00
2	HR	1010000.00
3	IT	1600000.00

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44. Write the query to get the department and department wise total(sum) salary, display it in descending order according to salary.

Ans: `SELECT Department, SUM(Salary) AS [Total Salary] FROM [EmployeeDetail] GROUP BY Department ORDER BY SUM(Salary) DESC`

	Department	Total Salary
1	IT	1600000.00
2	HR	1010000.00
3	Payroll	500000.00

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45. Write the query to get the department, total no. of departments, total(sum) salary with respect to department from "EmployeeDetail" table.

Ans: `SELECT Department, COUNT(*) AS [Dept Counts], SUM(Salary) AS [Total Salary] FROM [EmployeeDetail] GROUP BY Department`

	Department	Dept Counts	Total Salary
1	HR	2	1010000.00
2	IT	2	1600000.00
3	Payroll	1	500000.00

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46. Get department wise average salary from "EmployeeDetail" table order by salary ascending

Ans: `SELECT Department, AVG(Salary) AS [Average Salary] FROM [EmployeeDetail] GROUP BY Department ORDER BY AVG(Salary) ASC`

	Department	Average Salary
1	Payroll	500000.000000
2	HR	505000.000000
3	IT	800000.000000

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. Get department wise maximum salary from "EmployeeDetail" table order by salary ascending

Ans: `SELECT Department, MAX(Salary) AS [Average Salary] FROM [EmployeeDetail] GROUP BY Department ORDER BY MAX(Salary) ASC`

	Department	Average Salary
1	Payroll	500000.00
2	HR	530000.00
3	IT	1000000.00

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48. Get department wise minimum salary from "EmployeeDetail" table order by

salary ascending

Ans: `SELECT Department, MIN(Salary) AS [Average Salary] FROM [EmployeeDetail] GROUP BY Department ORDER BY MIN(Salary) ASC`

	Department	Average Salary
1	HR	480000.00
2	Payroll	500000.00
3	IT	600000.00

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USE OF HAVING

49. Write down the query to fetch Project name assign to more than one Employee

Ans: `Select ProjectName, Count(*) [NoofEmp] from [ProjectDetail] GROUP BY ProjectName HAVING COUNT(*) > 1`

	ProjectName	NoofEmp
1	HR Managment	2
2	Task Track	2

Set-6: Sql Server Join Interview Query

(Join Related Queries)

Related Tables:

EmployeeDetail table

	EmployeeID	FirstName	LastName	Salary	JoiningDate	Department	Gender
1	1	Vikas	Ahlawat	600000.00	2013-02-15 11:16:28.290	IT	Male
2	2	nikita	Jain	530000.00	2014-01-09 17:31:07.793	HR	Female
3	3	Ashish	Kumar	1000000.00	2014-01-09 10:05:07.793	IT	Male
4	4	Nikhil	Shama	480000.00	2014-01-09 09:00:07.793	HR	Male
5	5	anish	kadian	500000.00	2014-01-09 09:31:07.793	Payroll	Male

ProjectDetail table

	ProjectDetailID	EmployeeDetailID	ProjectName
1	1	1	Task Track
2	2	1	CLP
3	3	1	Survey Managment
4	4	2	HR Managment
5	5	3	Task Track
6	6	3	GRS
7	7	3	DDS
8	8	4	HR Managment
9	9	6	GL Managment

SQL JOINS RELATED INTERVIEW QUERIES

51. Get employee name, project name order by firstname from "EmployeeDetail" and "ProjectDetail" for those employee which have assigned project already.

Ans: `SELECT FirstName,ProjectName FROM [EmployeeDetail] A INNER JOIN [ProjectDetail] B ON A.EmployeeID = B.EmployeeDetailID ORDER BY FirstName`

	FirstName	ProjectName
1	Ashish	Task Track
2	Ashish	GRS
3	Ashish	DDS
4	Nikhil	HR Managment
5	nikita	HR Managment
6	Vikas	Task Track
7	Vikas	CLP
8	Vikas	Survey Managment

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52. Get employee name, project name order by firstname from "EmployeeDetail" and "ProjectDetail" for all employee even they have not assigned project.

Ans: `SELECT FirstName, ProjectName FROM [EmployeeDetail] A LEFT OUTER JOIN [ProjectDetail] B ON A.EmployeeID = B.EmployeeDetailID ORDER BY FirstName`

	FirstName	ProjectName
1	anish	NULL
2	Ashish	Task Track
3	Ashish	GRS
4	Ashish	DDS
5	Nikhil	HR Managment
6	nikita	HR Managment
7	Vikas	Task Track
8	Vikas	CLP
9	Vikas	Survey Managment

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53(35.1) Get employee name, project name order by firstname from "EmployeeDetail" and "ProjectDetail" for all employee if project is not assigned then display "-No Project Assigned".

Ans: `SELECT FirstName, ISNULL(ProjectName, '-No Project Assigned') FROM [EmployeeDetail] A LEFT OUTER JOIN [ProjectDetail] B ON A.EmployeeID = B.EmployeeDetailID ORDER BY FirstName`

	EmployeeID	FirstName	LastName	ProjectName
1	1	Vikas	Ahlawat	Task Track
2	1	Vikas	Ahlawat	CLP
3	1	Vikas	Ahlawat	Survey Management
4	2	nikita	Jain	HR Management
5	3	Ashish	Kumar	Task Track
6	3	Ashish	Kumar	GRS
7	3	Ashish	Kumar	DDS
8	4	Nikhil	Shama	HR Management
9	5	asish	Kadian	-No Project Assigned

54. Get all project name even they have not matching any employeeid, in left table,

order by firstname from "EmployeeDetail" and "ProjectDetail".

Ans: `SELECT FirstName,ProjectName FROM [EmployeeDetail] A RIGHT OUTER JOIN[ProjectDetail] B ON A.EmployeeID = B.EmployeeDetailID ORDER BY FirstName`

	FirstName	ProjectName
1	NULL	GL Managment
2	Ashish	Task Track
3	Ashish	GRS
4	Ashish	DDS
5	Nikhil	HR Managment
6	nikita	HR Managment
7	Vikas	Task Track
8	Vikas	CLP
9	Vikas	Survey Managment

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55. Get complete record (employeename, project name) from both tables ([EmployeeDetail],[ProjectDetail]), if no match found in any table then show NULL.

Ans: `SELECT FirstName,ProjectName FROM [EmployeeDetail] A FULL OUTER JOIN[ProjectDetail] B ON A.EmployeeID = B.EmployeeDetailID ORDER BY FirstName`

	FirstName	ProjectName
1	NULL	GL Managment
2	anish	NULL
3	Ashish	Task Track
4	Ashish	GRS
5	Ashish	DDS
6	Nikhil	HR Managment
7	nikita	HR Managment
8	Vikas	Task Track
9	Vikas	CLP
10	Vikas	Survey Managment

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56. Write a query to find out the employeename who has not assigned any project, and display "-No Project Assigned"(tables :- [EmployeeDetail],[ProjectDetail]).

Ans: `SELECT FirstName, ISNULL(ProjectName,'-No Project Assigned') AS [ProjectName]FROM [EmployeeDetail] A LEFT OUTER JOIN [ProjectDetail] B ON A.EmployeeID =B.EmployeeDetailID WHERE ProjectName IS NULL`

	FirstName	ProjectName
1	anish	-No Project Assigned

57. Write a query to find out the project name which is not assigned to any employee(tables :- [EmployeeDetail],[ProjectDetail]).

Ans: `SELECT ProjectName FROM [EmployeeDetail] A RIGHT OUTER JOIN [ProjectDetail] B ON A.EmployeeID = B.EmployeeDetailID`

WHERE FirstName IS NULL

	ProjectName
1	GL Managment

58. Write down the query to fetch EmployeeName & Project who has assign more than one project.

Ans: `Select EmployeeID, FirstName, ProjectName from [EmployeeDetail] E INNER JOIN[ProjectDetail] P`

`ON E.EmployeeID = P.EmployeeDetailID`

`WHERE EmployeeID IN (SELECT EmployeeDetailID FROM [ProjectDetail] GROUP BYEmployeeDetailID HAVING COUNT(*) > 1)`

	EmployeeID	FirstName	ProjectName
1	1	Vikas	Task Track
2	1	Vikas	CLP
3	1	Vikas	Survey Managment
4	3	Ashish	Task Track
5	3	Ashish	GRS
6	3	Ashish	DDS

59. Write down the query to fetch ProjectName on which more than one employee are working along with EmployeeName.

Ans: `Select P.ProjectName, E.FName from ProjectDetails P INNER JOIN EmployeeDetails E`

`on p.EmployeeId = E.Id where P.ProjectName in(select ProjectName from ProjectDetailsgroup by ProjectName having COUNT(1)>1)`

	FirstName	ProjectName
1	Vikas	Task Track
2	nikita	HR Managment
3	Ashish	Task Track
4	Nikhil	HR Managment

Set-7: Sql Server Tricky Join Interview Query

(Tricky Join Queries)

EmployeeDetail table

	EmployeeID	FirstName	LastName	Salary	JoiningDate	Department	Gender
1	1	Vikas	Ahlawat	600000.00	2013-02-15 11:16:28.290	IT	Male
2	2	nikita	Jain	530000.00	2014-01-09 17:31:07.793	HR	Female
3	3	Ashish	Kumar	1000000.00	2014-01-09 10:05:07.793	IT	Male
4	4	Nikhil	Sharma	480000.00	2014-01-09 09:00:07.793	HR	Male
5	5	anish	kadian	500000.00	2014-01-09 09:31:07.793	Payroll	Male

ProjectDetail table

	ProjectDetailID	EmployeeDetailID	ProjectName
1	1	1	Task Track
2	2	1	CLP
3	3	1	Survey Managment
4	4	2	HR Managment
5	5	3	Task Track
6	6	3	GRS
7	7	3	DDS
8	8	4	HR Managment
9	9	6	GL Managment

TBL_1

	ID
1	1
2	1

TBL_2

	ID
1	1
2	1
3	1

Table_1

	ID	Name
1	1	Vikas Ahlawat
2	2	Sachin Aggarwal
3	3	Manoj Kumar

Table_2

	ID	Name
1	1	Vikas Ahlawat
2	4	Sanjay Kumar
3	5	Sachin Aggarwal
4	3	Sandeep Kumar

COMPLEX SQL JOINS INTERVIEW QUERIES SET- 7

--60. What would be the output of the following query(INNER JOIN)

```
SELECT T1.ID, T2.ID FROM TBL_1 T1 INNER JOIN TBL_2 T2 ON T1.ID = T2.ID
```

--ANS:

	ID	ID
1	1	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1

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--61. What would the output of the following query(LEFT OUTER JOIN)

```
SELECT T1.ID, T2.ID FROM TBL_1 T1 LEFT OUTER JOIN TBL_2 T2 ON T1.ID = T2.ID
```

--ANS: Output would be same as 60th Question

--62. What will be the output of the following query(LEFT OUTER JOIN)

```
SELECT T1.ID, T2.ID FROM TBL_1 T1 LEFT OUTER JOIN TBL_2 T2 ON T1.ID = T2.ID
```

--ANS: Output would be same as 60th Question

--63. What would the output of the following query(RIGHT OUTER JOIN)

```
SELECT T1.ID, T2.ID FROM TBL_1 T1 RIGHT OUTER JOIN TBL_2 T2 ON T1.ID = T2.ID
```

--ANS: Output would be same as 60th Question

--64. What would be the output of the following query(FULL OUTER JOIN)

```
SELECT T1.ID, T2.ID FROM TBL_1 T1 FULL OUTER JOIN TBL_2 T2 ON T1.ID = T2.ID
```

--ANS: Output would be same as 60th Question

--65. What would be the output of the following query(CROSS JOIN)

```
SELECT T1.ID, T2.ID FROM TBL_1 T1 CROSS JOIN TBL_2 T2
```

--ANS: Output would be same as 60th Question

--66. What would be the output of the following query.(Related Tables : Table_1,Table_2)

```
SELECT A.[ID] ,A.[Name],B.[ID] ,B.[Name] FROM [Table_1] A INNER JOIN [Table_2] B
ON A.ID = B.ID
```

--ANS:

	ID	Name	ID	Name
1	1	Vikas Ahlawat	1	Vikas Ahlawat
2	3	Manoj Kumar	3	Sandeep Kumar

--67. What would be the output of the following query.(Related Tables : Table_1,Table_2)

```
SELECT A.[ID] ,A.[Name],B.[ID] ,B.[Name] FROM [Table_1] A INNER JOIN [Table_2] B
ON A.ID = B.ID AND A.[Name] = B.[Name]
```

--ANS:

	ID	Name	ID	Name
1	1	Vikas Ahlawat	1	Vikas Ahlawat

--68. What would be the output of the following query.(Related Tables : Table_1,Table_2)

--(INNER JOIN WITH AND)

SELECT A.[ID] ,A.[Name],B.[ID] ,B.[Name] FROM [Table_1] A INNER JOIN [Table_2] B
ON A.ID = B.ID AND A.[Name] = B.[Name]

--ANS:

	ID	Name	ID	Name
1	1	Vikas Ahlawat	1	Vikas Ahlawat

--69. What would be the output of the following query.(Related Tables : Table_1,Table_2)

--(INNER JOIN WITH OR)

SELECT A.[ID], A.[Name],B.[ID], B.[Name] FROM [Table_1] A INNER JOIN [Table_2] B
ON A.ID = B.ID OR A.[Name] = B.[Name]

--ANS:

	ID	Name	ID	Name
1	1	Vikas Ahlawat	1	Vikas Ahlawat
2	2	Sachin Aggarwal	5	Sachin Aggarwal
3	3	Manoj Kumar	3	Sandeep Kumar

--70. What would be the output of the following query.(Related Tables : Table_1,Table_2)

--(INNER JOIN WITH NOT EQUAL !=)

SELECT A.[ID], A.[Name],B.[ID], B.[Name] FROM [Table_1] A INNER JOIN [Table_2] B
ON A.ID != B.ID

--ANS:

	ID	Name	ID	Name
1	1	Vikas Ahlawat	4	Sanjay Kumar
2	1	Vikas Ahlawat	5	Sachin Aggarwal
3	1	Vikas Ahlawat	3	Sandeep Kumar
4	2	Sachin Aggarwal	1	Vikas Ahlawat
5	2	Sachin Aggarwal	4	Sanjay Kumar
6	2	Sachin Aggarwal	5	Sachin Aggarwal
7	2	Sachin Aggarwal	3	Sandeep Kumar
8	3	Manoj Kumar	1	Vikas Ahlawat
9	3	Manoj Kumar	4	Sanjay Kumar
10	3	Manoj Kumar	5	Sachin Aggarwal

--71. Click on the Page no 2 below for continue reading (for 71st and more such Query)

--71. What would be the output of the following query.(Related Tables : Table_1,Table_2)

--(INNER JOIN WITH NOT)

SELECT A.[ID] ,A.[Name],B.[ID] ,B.[Name] FROM [Table_1] A INNER JOIN [Table_2] B
ON NOT(A.ID = B.ID)

--ANS:

	ID	Name	ID	Name
1	1	Vikas Ahlawat	4	Sanjay Kumar
2	1	Vikas Ahlawat	5	Sachin Aggarwal
3	1	Vikas Ahlawat	3	Sandeep Kumar
4	2	Sachin Aggarwal	1	Vikas Ahlawat
5	2	Sachin Aggarwal	4	Sanjay Kumar
6	2	Sachin Aggarwal	5	Sachin Aggarwal
7	2	Sachin Aggarwal	3	Sandeep Kumar
8	3	Manoj Kumar	1	Vikas Ahlawat
9	3	Manoj Kumar	4	Sanjay Kumar
10	3	Manoj Kumar	5	Sachin Aggarwal

--72. What would be the output of the following query.(Related Tables : Table_1,Table_2)

--(INNER JOIN WITH IN)

SELECT A.[ID], A.[Name],B.[ID], B.[Name] FROM [Table_1] A INNER JOIN [Table_2] B
ON A.ID IN(1)

--ANS:

	ID	Name	ID	Name
1	1	Vikas Ahlawat	1	Vikas Ahlawat
2	1	Vikas Ahlawat	4	Sanjay Kumar
3	1	Vikas Ahlawat	5	Sachin Aggarwal
4	1	Vikas Ahlawat	3	Sandeep Kumar

--73. What would be the output of the following query.(Related Tables : Table_1,Table_2)

--(INNER JOIN WITH NOT)

SELECT A.[ID] ,A.[Name],B.[ID] ,B.[Name] FROM [Table_1] A INNER JOIN [Table_2] B
ON NOT(A.ID = B.ID)

--ANS:

	ID	Name	ID	Name
1	1	Vikas Ahlawat	4	Sanjay Kumar
2	1	Vikas Ahlawat	5	Sachin Aggarwal
3	1	Vikas Ahlawat	3	Sandeep Kumar
4	2	Sachin Aggarwal	1	Vikas Ahlawat
5	2	Sachin Aggarwal	4	Sanjay Kumar
6	2	Sachin Aggarwal	5	Sachin Aggarwal
7	2	Sachin Aggarwal	3	Sandeep Kumar
8	3	Manoj Kumar	1	Vikas Ahlawat
9	3	Manoj Kumar	4	Sanjay Kumar
10	3	Manoj Kumar	5	Sachin Aggarwal

--74. What would be the output of the following query.(Related Tables : Table_1,Table_2)

--(LEFT OUTER JOIN)

```
SELECT A.[ID] ,A.[Name],B.[ID] ,B.[Name] FROM [Table_1] A LEFT OUTER JOIN [Table_2] B
ON A.ID = B.ID
```

--ANS:

	ID	Name	ID	Name
1	1	Vikas Ahlawat	1	Vikas Ahlawat
2	2	Sachin Aggarwal	NULL	NULL
3	3	Manoj Kumar	3	Sandeep Kumar

--75. Write down the query to fatch record from Table_1 which not exist in Table_2(based on ID column)

--ANS:

```
SELECT A.[ID] ,A.[Name],B.[ID] ,B.[Name] FROM [Table_1] A LEFT OUTER JOIN [Table_2] B
ON A.ID = B.ID WHERE B.[ID] IS NULL
```

	ID	Name	ID	Name
1	2	Sachin Aggarwal	NULL	NULL

--76. What would be the output of the following query.(Related Tables : Table_1,Table_2)

--(LEFT OUTER JOIN WITH !=)

```
SELECT A.[ID] ,A.[Name],B.[ID] ,B.[Name] FROM [Table_1] A LEFT OUTER JOIN [Table_2] B
ON A.ID != B.ID
```

--ANS:

	ID	Name	ID	Name
1	1	Vikas Ahlawat	4	Sanjay Kumar
2	1	Vikas Ahlawat	5	Sachin Aggarwal
3	1	Vikas Ahlawat	3	Sandeep Kumar
4	2	Sachin Aggarwal	1	Vikas Ahlawat
5	2	Sachin Aggarwal	4	Sanjay Kumar
6	2	Sachin Aggarwal	5	Sachin Aggarwal
7	2	Sachin Aggarwal	3	Sandeep Kumar
8	3	Manoj Kumar	1	Vikas Ahlawat
9	3	Manoj Kumar	4	Sanjay Kumar
10	3	Manoj Kumar	5	Sachin Aggarwal

--77. Write down the query to fatch record from Table_2 which not exist in Table_1(based on ID column)

--ANS:

```
SELECT A.[ID] ,A.[Name],B.[ID] ,B.[Name] FROM [Table_1] A RIGHT OUTER JOIN [Table_2] B
ON A.ID = B.ID WHERE A.[ID] IS NULL
```

	ID	Name	ID	Name
1	NULL	NULL	4	Sanjay Kumar
2	NULL	NULL	5	Sachin Aggarwal

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Set-8: Sql Server DDL Interview Query (DDL Queries)

--78. Write down the query to create employee table with Identity column([EmployeeID])

--ANS:

```
CREATE TABLE EmployeeDetail( [EmployeeID] INT IDENTITY(1,1) NOT NULL, [FirstName] NVARCHAR(50) NULL,
[LastName] NVARCHAR(50) NULL, [Salary] DECIMAL(10, 2) NULL, [JoiningDate] DATETIME NULL,[Department] NVARCHAR(20) NULL,
[Gender] VARCHAR(10) NULL)
```

--79. Write down the query to create employee table with Identity column([EmployeeID])

--ANS:

```
CREATE TABLE EmployeeDetail( [EmployeeID] INT IDENTITY(1,1) NOT NULL PRIMARY KEY, [FirstName] NVARCHAR(50) NULL,
[LastName] NVARCHAR(50) NULL, [Salary] DECIMAL(10, 2) NULL, [JoiningDate] DATETIME NULL,[Department] NVARCHAR(20) NULL,
[Gender] VARCHAR(10) NULL)
```

--80. Write down the query to create employee table with primary key (EmployeeID)

--ANS:

```
CREATE TABLE EmployeeDetail( [EmployeeID] INT IDENTITY(1,1) NOT NULL PRIMARY KEY,  
    [FirstName] NVARCHAR(50) NULL,[LastName] NVARCHAR(50) NULL, [Salary] DECIMAL(10, 2) NULL,[Join  
ingDate] DATETIME NULL, [Department] NVARCHAR(20) NULL,  
    [Gender] VARCHAR(10) NULL)
```

--81. How to set Primary key using Alter command

--ANS:

```
ALTER TABLE EmployeeDetail ADD PRIMARY KEY (P_EmployeeID)
```

--82. How to set primary key and foreignkey relationship using query(set EmployeeID column of ProjectDetail table as a foreignkey)

--ANS:

```
ALTER TABLE ProjectDetail
```

```
ADD CONSTRAINT fk_EmployeeDetailID_Eid FOREIGN KEY(EmployeeDetailID)REFERENCESEmployeeDetail  
(EmployeeID)
```

Set-9: Small but tricky Interview Query

(Very Interesting set)

ANSWERS :

110) D 109) A 108) A 107) A 106) A 105) C 104) D 103) B 102) B 101) C 100) C 99) A 98) D 97) A 96) C
95) C 94) C 93) D 92) B 91) A 90) A 89) C 88) D 87) A 86) D 85) C 84) D 83) B

83). **SELECT** 15

--output of this query would be.

- A). Throw error
- B). 15
- C). 0
- D). 1

84).**SELECT** \$

--output of this query would be.

- A). Throw error
- B). \$
- C). 1
- D). 0.00

85). `SELECT COUNT(*)`

--output of this query would be.

- A). Throw error
- B). 0
- C). 1
- D). *

86). `SELECT COUNT('7')`

--output of this query would be.

- A). Throw error
- B). 7
- C). 0
- D). 1

87). `SELECT 'VIKAS' + 1`

--output of this query would be.

- A). Throw error
- B). 'VIKAS'
- C). VIKAS
- D). VIKAS1

88). `SELECT 'VIKAS' + '1'`

--output of this query would be.

- A). Throw error
- B). 'VIKAS'
- C). VIKAS
- D). VIKAS1

89). `SELECT (SELECT 'VIKAS')`

--output of this query would be.

- A). Throw error
- B). 'VIKAS'
- C). VIKAS
- D). VIKAS1

90). `SELECT SELECT 'VIKAS'`

--output of this query would be.

- A). Throw error
- B). 'VIKAS'
- C). VIKAS
- D). VIKAS1

91). `SELECT * FROM 'Country'`

--output of this query would be.

- A). Throw error
- B). Select all data from country table
- C). Country
- D). Throw error

92). `SELECT * FROM Country , EmployeeDetail`

--output of this query would be.

- A). Throw error
- B). Output will be cross join of both tables
- C). Output will be inner join
- D). Output will be only Country table data

93). `SELECT COUNT(*) + COUNT(*)`

--output of this query would be.

- A). Throw error
- B). 0
- C). 1
- D). 2

94). `SELECT 'VIKAS' FROM Country`

--output of this query would be.

- A). Throw error
- B). Display one time "VIKAS"
- C). Display "VIKAS" as many rows in Country table
- D). Will select country table data

95). `SELECT SUM(1+2*3)`

--output of this query would be.

- A). Throw error
- B). 9
- C). 7
- D). 6

96). `SELECT MAX(1+2*3)`

--output of this query would be.

- A). Throw error
- B). 3
- C). 7
- D). 6

97). `SELECT MAX(1,3,4)`

--output of this query would be.

- A). Throw error
- B). 1
- C). 3
- D). 4

98). `SELECT MAX('VIKAS')`

--output of this query would be.

- A). Throw error
- B). 1
- C). 2
- D). VIKAS

99). `Select Count(SELECT CountryID FROM Country)`

--output of this query would be.

- A). Throw error

- B). Will display count of country table
- C). 0
- D). 1

100). `SELECT 1 + '1'`

--output of this query would be.

- A). Throw error
- B). 1
- C). 2
- D). 11

101). `SELECT '1' + 1`

--output of this query would be.

- A). Throw error
- B). 1
- C). 2
- D). 11

102). `SELECT NULL + 5`

--output of this query would be.

- A). Throw error
- B). NULL
- C). 5
- D). 0

103). `SELECT NULL + '1'`

--output of this query would be.

- A). Throw error
- B). NULL
- C). 1
- D). 0

104). `SELECT 1 WHERE NULL = NULL`

--output of this query would be.

- A). Throw error
- B). NULL
- C). 1
- D). NOTHING WILL RETURN BY This (0 rows will be returned by this) because the condition is false

105). `SELECT SUM(1)`

--output of this query would be.

- A). Throw error
- B). NULL
- C). 1
- D). 0

106). `SELECT SUM('1')`

--output of this query would be.

- A). Throw error
- B). NULL
- C). 1
- D). 0

107). **SELECT SUM**(NULL)
 --output of this query would be.
 A). Throw error
 B). NULL
 C). 1
 D). 0

108). **SELECT** 6/0
 --output of this query would be.
 A). Throw error(Divide by zero error encountered.)
 B). NULL
 C). 1
 D). 0

109). **SELECT** 0/0
 --output of this query would be.
 A). Throw error(Divide by zero error encountered.)
 B). NULL
 C). 1
 D). 0

110). **SELECT** 0/9
 --output of this query would be.
 A). Throw error(Divide by zero error encountered.)
 B). NULL C). 1
 D). 0

Set-10: Very much Tricky(not 4 freshers)Query (Very Much Tricky Query)

Related Tables :

EmployeeDetail table

	EmployeeID	FirstName	LastName	Salary	JoiningDate	Department	Gender
1	1	Vikas	Ahlawat	600000.00	2013-02-15 11:16:28.290	IT	Male
2	2	nikita	Jain	530000.00	2014-01-09 17:31:07.793	HR	Female
3	3	Ashish	Kumar	1000000.00	2014-01-09 10:05:07.793	IT	Male
4	4	Nikhil	Sharma	480000.00	2014-01-09 09:00:07.793	HR	Male
5	5	anish	kadian	500000.00	2014-01-09 09:31:07.793	Payroll	Male

ProjectDetail table

	ProjectDetailID	EmployeeDetailID	ProjectName
1	1	1	Task Track
2	2	1	CLP
3	3	1	Survey Managment
4	4	2	HR Managment
5	5	3	Task Track
6	6	3	GRS
7	7	3	DDS
8	8	4	HR Managment
9	9	6	GL Managment

FuelDetail Table

	ID	Fuel	Date
1	1	10	2014-04-25 10:00:00.000
2	2	9	2014-04-25 11:00:00.000
3	3	8	2014-04-25 12:00:00.000
4	4	6	2014-04-25 13:00:00.000
5	5	12	2014-04-25 14:00:00.000
6	6	11	2014-04-25 15:00:00.000
7	7	10	2014-04-25 16:00:00.000
8	8	9	2014-04-25 17:00:00.000
9	9	8	2014-04-25 18:00:00.000
10	10	10	2014-04-25 19:00:00.000
11	11	9	2014-04-25 20:00:00.000
12	12	8	2014-04-25 21:00:00.000
13	13	7	2014-04-25 22:00:00.000
14	14	15	2014-04-25 23:00:00.000

fuel increased

--100. Write down the query to print first letter of a Name in Upper Case and all other letter in Lower Case.(EmployDetail table)

ANS:

`SELECT UPPER(SUBSTRING(FirstName,1,1))+ LOWER(SUBSTRING(FirstName,2,LEN(FirstName)-1)) AS [FirstName]`

Output:-

	FirstName
1	Vikas
2	Nikita
3	Ashish
4	Nikhil
5	Anish

--101. Write down the query to display all employee name in one cell separated by ',' ex:-"Vikas, nikita, Ashish, Nikhil , anish"(EmployeeDetail table)

ANS:

Solution 1:

```
SELECT STUFF(( SELECT ',' + E.FirstName FROM [EmployeeDetail] AS E FOR XML PATH(''), 1, 2, '' ) AS [All  
Emp Name]
```

Output:-

All Emp Name	
1	Vikas, nikita, Ashish, Nikhil , anish

Solution 2:

```
DECLARE @name VARCHAR(MAX) = ''  
SELECT @name = @name + FirstName + ',' FROM [TMSDB].[dbo].[EmployeeDetail]  
SELECT SUBSTRING(@name,1,LEN(@name)-1)
```

100 %

Results Messages

(No column name)	
1	Vikas,nikita,Ashish,Nikhil,anish

--102. Write down the query to get ProjectName and respective EmployeeName(firstname) which are working on the project,

--if more then one employee working on same project, then it should be in same cell separated by comma

--for example :- Task Tracker : Vikas, Ashish

ANS:

```
SELECT ProjectName, STUFF((SELECT ',' + FirstName FROM EmployeeDetail  
E1 INNER JOIN [ProjectDetail] P1 ON E1.EmployeeID = P1.EmployeeDetailID  
WHERE P1.ProjectName = P2.ProjectName FOR XML PATH(''),1,2, '' ) AS [Employee  
Name] FROM EmployeeDetail E2  
INNER JOIN [ProjectDetail] P2 ON E2.EmployeeID = P2.EmployeeDetailID  
GROUP BY ProjectName
```

Output:-

	ProjectName	Employee Name
1	CLP	Vikas
2	DDS	Ashish
3	GRS	Ashish
4	HR Managment	nikita, Nikhil
5	Survey Managment	Vikas
6	Task Track	Vikas, Ashish

AND THE VERY VERY COMPLEX QUERY HERE

--103: You have a table(FuelDetail) with ID, Fuel, And Date columns.

--Fuel column is contain fuel quantity at a particular time when car start traveling. So we need to find out that when the driver fill Petrol in his/her car.

--By FuelDetail Table image on the top of this post, you can understand the query.

--Car start driving at 10 Am on 25th April with petrol(10 liter)

--at 11 AM Petrol was 9 liters

--at 12 AM petrol was 8 liters

--at 2 PM (14) petrol was 12 liters...

--This means that he/she fill the petrol at 25th April 2014 at 2PM

--Next time he fill petrol at 7PM 25th April 2014

--and Next time he fill petrol at 11PM 25th April 2014

ANS:

Solution 1:

SELECT c1.fuel AS [Fuel quantity Now],c1.[Date],c.fuel AS [Fuel quantity Before],c.[Date]

FROM FuelDetail c

JOIN

FuelDetail c1 ON c1.[Date] =(SELECT MIN([Date]) FROM FuelDetail WHERE [Date]>c.[Date])

WHERE c1.fuel>c.fuel

Solution 2:(by Eduardo Ramires) see in comment section

Select FD.ID, FD.Fuel, FD.Date,FD1.Fuel [Fuel Quantity Before],FD1.Date

from FuelDetail FD inner join FuelDetail FD1 on FD1.ID = (FD.ID-1)

and FD1.Fuel < FD.Fuel

Output will be:

	Fuel quantity Now	Date	Fuel quantity Before	Date
1	12	2014-04-25 14:00:00.000	6	2014-04-25 13:00:00.000
2	10	2014-04-25 19:00:00.000	8	2014-04-25 18:00:00.000
3	15	2014-04-25 23:00:00.000	7	2014-04-25 22:00:00.000

Set-11: Sql Server Complex Interview Query

(Tricky queries)

HARD/TRICKY/COMPLEX SQL JOIN QUERIES EXAMPLES

Answers: 104) C, 105) C, 106) B, 107) E, 108) D

104) . What would be the out-put of the following Sql query?

`SELECT A.A FROM (SELECT 1 A, 2 B) A
JOIN (SELECT 1 A, 1 B) B ON A.A = B.B`

Options:

A).

Error

B).

	A
1	1

C).

	A
1	1

D).

	A	A	B
1	2	1	2

E).

	A	A	B
1	2	1	2
2	1	1	1

105). What would be the out-put of the following Sql query?

`SELECT B.A FROM (SELECT 1 A) A
JOIN (SELECT 1 A, 2 B) B ON A.A = B.A`

Options:

A).
Error

B).

	A

C).

	A
1	1

D).

	A	A	B
1	2	1	2

E).

	A	A	B
1	2	1	2
2	1	1	1

106). What would be the out-put of the following Sql query?

SELECT B.A FROM (SELECT 1 A) A
JOIN (SELECT 1 A, 2 B)B ON A.A = B.B

Options:

A).
Error

B).

	A

C).

	A
1	1

D).

	A	A	B
1	2	1	2

E).

	A	A	B
1	2	1	2
2	1	1	1

107). What would be the out-put of the following Sql query?

SELECT * FROM (SELECT 1 A UNION ALL SELECT 2 B) A
JOIN (SELECT 1 A, 2 B UNION ALL SELECT 1 A, 1 B)B ON A.A = B.B

Options:

A).
Error

B).

	A

C).

	A
1	1

D).

	A	A	B
1	2	1	2

E).

	A	A	B
1	2	1	2
2	1	1	1

108). What would be the out-put of the following Sql query?

SELECT * FROM (SELECT 1 A UNION ALL SELECT 2 B) A
JOIN (SELECT 1 A, 2 B)B ON A.A = B.B

Options:

A).

Error

B).

	A
1	1

C).

	A
1	1

D).

	A	A	B
1	2	1	2

E).

	A	A	B
1	2	1	2
2	1	1	1

Now let's start Mix Interview questions (Theoretical + Queries)

Set-12: Sql Server Datatype Interview Questions

So let's first go through SQL Server Data types

DATATYPE	DESCRIPTION
bigint	Integer data from -2^{63} to $2^{63}-1$
binary	Fixed-length binary data with a maximum length of 8,000 bytes
bit	Integer data with either a 1 or 0 value (often for a true or false reading)
char	Fixed-length non-unicode character data with a maximum length of 8,000 characters
cursor	A reference to a cursor
datetime	Date and time data from January 1, 1753, through December 31, 9999, with an accuracy of 3.33 milliseconds (but use datetime2 instead)

decimal	Fixed precision and scale numeric data from $-10^{38} + 1$ through $10^{38} - 1$ (same as 'numeric(9,2)) = max value 9999999.99)
float	Floating precision number data from $-1.79E + 308$ through $1.79E + 308$
image	Variable-length binary data with a maximum length of $2^{31} - 1$ bytes
int	Integer data from -2^{31} through $2^{31} - 1$ (-2 billion to 2 billion approx)
money	Monetary data values from -2^{63} through $2^{63} - 1$
nchar	Fixed-length Unicode data with a maximum length of 4,000 characters
ntext	Variable-length Unicode data with a maximum length of $2^{30} - 1$ characters (Deprecated - don't use!)
numeric	Fixed precision and scale numeric data from $-10^{38} + 1$ through $10^{38} - 1$ (same as 'decimal')
nvarchar	Variable-length Unicode data with a maximum length of 4,000 characters
real	Floating precision number data from $-3.40E + 38$ through $3.40E + 38$
smalldatetime	Date and time data from January 1, 1900, through June 6, 2079, with an accuracy of one minute
smallint	Integer data from -2^{15} through $2^{15} - 1$ (-32000 to 32000 approx)
smallmoney	Monetary data values from -214,748.3648 to +214,748.3647
sql_variant	A data type that stores values of various data types, except text, ntext, timestamp, and sql_variant
table	A special data type used to store a result set for later processing
text	Variable-length data with a maximum length of $2^{31} - 1$ characters (Deprecated - don't use)
timestamp	A database-wide unique number that gets updated every time a row gets updated
tinyint	Integer data from 0 to 255
uniqueidentifier	A globally unique identifier
varbinary	Variable-length binary data with a maximum length of 8,000 bytes
varchar	Variable-length non-unicode data with a maximum of 8,000 characters
date	holds date
time	holds time
datetime2	Date and time data from January 1, 1753, through December 31, 9999, with an accuracy of about 100 nanoseconds, plus more compactly stored
datetimeoffset	takes international time into account in reading
xml	for storing or even parsing raw xml data

SQL SERVER DATATYPES INTERVIEW QUESTIONS

What do you understand by Data-types in sql server?

Ans: SQL Server data types defines the characteristic of the data that is stored in a column. Each column, variable and expression has related data type in SQL.

How you should choose data type for particular column when you create a table?

Ans: The data type should be chosen based on the information you wish to store. for example you would not use an integer data type for storing employee name.

What is the very useful datatype introduced in SQL Server 2016?

Ans: JSON datatype

What are the two types of character data SQL Server supports?

Ans: Regular and Unicode

What are the Regular character data types?

Ans: Char and VarChar

What are the Unicode character data types?

Ans: NChar and NVarChar

How are literal strings expressed with Regular character column?

Ans: Single quote 'text'.

How are literal strings expressed with Unicode character column?

Ans: Must Start with N'text'.

What can you define with variable length character data types?

Ans: VARCHAR(MAX)

How large is VARCHAR(MAX)?

Ans: 8000 Bytes in line.

Name any five date and time data types?

Ans: 1.) DATETIME

2.) SMALLDATETIME

3.) DATE

4.) TIME

5.) DATETIME2

6.) DATETIMEOFFSET

What does the PARSE function do?

Ans: Parse a value as a requested type and indicate a culture.

Syntax?

PARSE('date' AS datatype USING culture)

What happens when you only want to work with time in a DATETIME data type?

Ans: SQL Server stores the date as Jan 1 1900.

What do you understand by Timestamp, Difference between Datetime and Timestamp datatypes?

Ans: Datetime: Datetime is a datatype.

Timestamp: Timestamp is a data type that exposes automatically generated binary numbers, which are guaranteed to be unique within a database. timestamp is used typically as a mechanism for version-stamping table rows. The storage size is 8 bytes.

In fact, in sql server 2008 this column type was renamed (i.e. timestamp is deprecated) to rowversion. It basically means that every time a row is changed, this value is increased. This is done with a database counter, i.e. two different rows that were updated in the same transaction have the same row version.

Set-13: TCS Sql Server Tricky Interview Queries

1). How to select random record from a table?

Ans: `Select top 1 * from <TableName> order by newid()`

2). Suppose that you have table Employee with a column EName which contain Records Employee name(EName) as A,B,A,A,B,D,C,M,A, Write a query which will change/Swap the EName A to B and B to A.

Ans: `UPDATE Employee`

`set EName = (CASE`

`WHEN EName='A' THEN 'B'`

`WHEN EName='B' THEN 'A'`

`ELSE EName`

`END)`

3). Write a query to create a clone of existing table without using Create Command.

Ans: `SELECT * INTO <NewTable> FROM <ExistingTable> WHERE 1=2`
`SELECT TOP 0 * INTO <NewTable> FROM <ExistingTable>`

4). Table Tbl1 has 100 rows, Table Tbl2 has 0 rows so number of rows returned by the below query?

`SELECT Tbl1.* from Tbl1, Tbl2;`

Ans : No row will be returned by this query

5). Write a query to print 1 to 100 in sql server without using loops?

Ans: Use Recursive common table expression:

```
WITH CTE
AS
(
    SELECT 1 [Sequence]
    UNION ALL
    SELECT [Sequence] + 1 FROM CTE WHERE [Sequence] < 100
)
SELECT * FROM CTE
```

Using Loop:

```
DECLARE @i INT
SET @i = 0
WHILE (@i < 100)
BEGIN
    SELECT @i = @i + 1
    PRINT @i
END
```

6). Write a query to calculate number of A in string 'VIKASAAA'?

Ans: `SELECT LEN('VIKASAAA') - LEN(REPLACE('VIKASAAA', 'A', ''))`

7). What would be the output of below query?

`SELECT * FROM (SELECT 1 UNION ALL SELECT 2) M`

Ans: It will throw error because in sub query no column name specified

8). What would be the output of below query?

Ans: `SELECT SUM(A) AS [Sum] FROM (SELECT 1 A UNION ALL SELECT NULL A) M`



Sum	
1	1

9). For 5/2, I want result as 2.5, How you will do that in SQL Server?

```
SELECT CAST(MyIntField1 AS float) / CAST(MyIntField2 AS float)
```

10). You have two tables with blank value in both table as shown in below image, Then what would be the output of the following Query based on the tables shown in image?

```
SELECT T1.*, T2.* FROM Table1 T1 INNER JOIN Table2 T2  
ON T1.Name = T2.Name
```

Table1, Containing blank " in second row

	Name
1	Vikas
2	

Table2, Containing blank " in first row

	Name
1	

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What would be the output of Inner join?

How many row/s would be return by inner join?

Ans: Output of the above query would be as below, Inner join will join both blank values

	Name	Name
1		

11). What will be the output of the following query?

```
SELECT CASE WHEN 1=1 THEN 'Vikas Ahlawat1'  
            WHEN 2=2 THEN 'Vikas Ahlawat2'  
            ELSE 'Vikas Ahlawat3' END AS Name
```

Set-14: HCL Sql Server Interview Queries

- 1). [What is @@ERROR?](#) (click on the questions to see answer)
- 2). [What is a linked server?](#)
- 3). [Will Non-Clustered Index used every time by SQL Server Engine?](#) (HCL/Unitedhealth Group)
- 4). [What are different part of a SQL Page?](#)
- 5). [What are the types of database recovery models?](#)
- 6). [What are different types of Collation Sensitivity?](#)

- 7). [What are the disadvantages of using Stored Procedure?](#)
- 8). [Can we call Stored Procedure in a View?](#)
- 9). [What is FILL Factor?](#)
- 10). [How Fixed Length and Variable Length Data types affect performance in Sql server Explain with example?](#)
- 11). [What would be the output of the following script?](#)
`SELECT NULL + 5`
- 12). [What do you understand by index id = 0 and Index id = 1, related to `sys.indexes` table? What they represent?](#)
- 13). [Can a stored procedure call itself or recursive stored procedure? How much level SP nesting is possible?](#)
- 14). [What would be the output of following query?](#)

```
CREATE TABLE Test(ID INT)
GO

BEGIN TRAN T1
INSERT INTO Test VALUES(1)

BEGIN TRAN T2
INSERT INTO Test VALUES(2)

BEGIN TRAN T3
INSERT INTO Test VALUES(3)

ROLLBACK TRAN T3
ROLLBACK TRAN T2
COMMIT TRAN T1

SELECT * FROM Test
```

- 15). [What is forwarding pointer in SQL Server? How it is helpful in performance optimization?](#)
- 16). [What would be the output of the following script?](#)
`SELECT COUNT(*)`

17). [How do you optimize Stored Procedures?](#)

18). [What would be the output of the following script?](#)

```
DECLARE @Name VARCHAR(20)  
SET @Name = 'विकास अहलावत'  
SELECT @Name
```

19). [What would be the output of following SQL Script.](#)

```
IF(NULL = NULL)  
    PRINT 'True'  
ELSE  
    PRINT 'False'
```

20). [What would be the output of the following query?](#)

```
SELECT CASE WHEN 1=1 THEN 'Vikas Ahlawat1'  
            WHEN 2=2 THEN 'Vikas Ahlawat2'  
            ELSE 'Vikas Ahlawat3' END AS Name
```

21). [What Execute in SQL Server First?](#)

- A) WHERE
- B) SELECT
- C) ON
- D) FROM
- E) TOP

22). [Sql server difference between session and connection?](#)

23). [Suppose you have following table "TestUpdate".](#)

SELECT * FROM Testupdate


Results		Messages	
ID			
1	1		
2	2		
3	3		
4	4		
5	5		

[What would be the output of following query?](#)

```
UPDATE Testupdate SET ID = ID + (SELECT MAX(ID) FROM Testupdate)  
SELECT * FROM Testupdate
```

24). [Repeat Rows N Times According to Column Value in SQL Server?](#)

Name	NTimes
Vikas	4
Rohit	1
Vinod	3



Name	NTimes
Vikas	4
Vikas	4
Vikas	4
Vikas	4
Rohit	1
Vinod	3
Vinod	3
Vinod	3

Set-15: [Sql Server View Interview Questions](#)

NEW

1). What do you understand by View in SQL Server?

Ans: A view is a virtual table whose contents are defined by a query. or a view is a stored SELECT statement that works like a virtual table.

2). What are the types of view?

Ans:

- Indexed Views
- Partitioned Views
- System Views
- [Click here for more detail](#)

3). How many column a view can contain?

Ans: 1024

4). The tables that makes up a view are called as?

Ans: Base tables

5). Can you create a view by using temporary table?

Ans: No

6). Can you create a view by using another view(nesting views)?

Ans: Yes! you can build view on other views and nest them up to 32 levels, Basing a view on another view is known as nesting views.

7). What are the limitations of a View?

8). How you will encrypt a view, so that people can utilize view to run reports, but can't see the underlying code?

Ans: We can encrypt our view by using WITH ENCRYPTION keyword

Ex:

Create View vEmployeeDetail

WITH ENCRYPTION

AS

Select EmpID, Sum(Amount) as Total From Emp Group by EmpID

9). If you are going to change or drop a table, but you don't know how many views/proc etc are depend on this particular table, then how you will you find dependencies?

Ans: To check dependencies there is a system-supplied stored procedure, sp_depends, which will list all dependent objects for the object name you pass in.

10). What is the purpose of the WITH SCHEMABINDING clause and where can it be used?

Ans: WITH SCHEMABINDING can be used in Views and T-SQL Functions.

Objects that are schema bound can have their definition changed, but objects that are referenced by schema bound objects cannot have their definition changed.

Schema binding effectively states that the meta-data which is created at object creation time can then be relied upon to be accurate at all times, and use of sp_refreshsqlmodule is not necessary. Schema binding can also significantly increase the performance of user defined functions in SQL Server 2005 and above. However, caution should be applied, as this is definitely not always the case.

11). Can we use WITH SCHEMABINDING in Stored Procedures?

Ans: WITH SCHEMABINDING can't be used in Stored Procedures.

12). Will below script correct or not? If not what is wrong with it?

CREATE VIEW vProduct_WithSchemabinding

WITH SCHEMABINDING

AS

SELECT * FROM [Person].[Person]

Ans: If we are using WITH SCHEMABINDING then we can't use "Select *";

This will throw "Syntax '*' is not allowed in schema-bound objects." error

Correct:

CREATE VIEW vProduct_WithSchemabinding

WITH SCHEMABINDING

AS

SELECT FirstName, LastName FROM [Person].[Person]

13). Is view store data physically apart from table or not?

Ans: A view is just a macro, it has no persistent storage. The underlying table data is stored in the MDF file. But it's not always true, Creating a clustered index on the view materializes its data on disk, giving the view a physical dimension, as opposed to its normal virtual role.

14). What are the purpose of creating view?

Ans: View is used for the following purposes:

- a) Security
- b) Faster Response
- c) Complex Query solve

Set-16: Sql Server Index Interview Questions

NEW

Let's Start :

What is an Index?

Indexes of SQL Server are similar to the indexes in books. They help SQL Server retrieve the data quicker. Index is a database object, which can be created on one or more columns. When creating the index will read the column(s) and forms a relevant data structure to minimize the number of data comparisons. The index will improve the performance of data retrieval and adds some overhead on data modification such as create, delete and modify. So it depends on how much data retrieval can be performed on table versus how much of DML (Insert, Delete and Update) operations.

How many clustered indexes there can be in one table?

Only one.

How many non-clustered indexes there can be in one table?

For SQL Server 2005: 249 Nonclustered Index

For SQL Server 2008: 999 Nonclustered Index

What is clustered table?

A table having clustered index also called as clustered table.

Disadvantages of the Indexes?

Inserts and updates takes longer time with clustered index.
It takes some disk space to create Non-Clustered index

How many columns can we include in non clustered index?

Max 16 columns can be combined to make a single composite index key, with a cap that the max size of the combined values is 900 bytes.

Why Use an Index?

Use of SQL server indexes provide many facilities such as:

- * Rapid access of information
- * Efficient access of information
- * Enforcement of uniqueness constraints

Types of Indexes?

SQL Server has two major types of indexes:

Clustered

Non-Clustered

What is Clustered index?

A clustered index sorts and stores the data rows of the table or view in order based on the clustered index key. The clustered index is implemented as a B-tree index structure that supports fast retrieval of the rows, based on their clustered index key values.

What is Non-Clustered index?

A nonclustered index can be defined on a table or view with a clustered index or on a heap. Each index row in the nonclustered index contains the nonclustered key value and a row locator. This locator points to the data row in the clustered index or heap having the key value. The rows in the index are stored in the order of the index key values, but the data rows are not guaranteed to be in any particular order unless a clustered index is created on the table.

For understand deeply follow the link

<http://blog.sqlauthority.com/2013/02/10/sql-server-primary-key-and-nonclustered-index-in-simple-words/>

Write the T-Sql statement/syntax for create and index?

Creates an index on a table. Duplicate values are allowed:

CREATE INDEX index_name

ON table_name (column_name)

SQL CREATE UNIQUE INDEX Syntax

Creates a unique index on a table. Duplicate values are not allowed:

CREATE UNIQUE INDEX index_name

ON table_name (column_name)

Difference Between Unique Index vs Unique Constraint?

Unique Index and Unique Constraint are the same. They achieve same goal. SQL

Performance is same for both.

What is the difference between a Clustered and Non-Clustered Index?

Clustered Index

1. There can be only one Clustered index for a table
2. Usually made on the primary key
3. The leaf nodes of a clustered index contain the data pages.
4. A clustered index actually describes the order in which records are physically stored on the disk, hence the reason you can only have one.

Non-Clustered Index

1. There can be only 249/999(2005/2008) Non-Clustered index for a table
2. Usually made on the any key
3. The leaf node of a nonclustered index does not consist of the data pages. Instead, the leaf nodes contain index rows
4. A Non-Clustered Index defines a logical order that does not match the physical order on disk.

Is Clustered index store the table data in sorted order?

Yes!

When you create an index on a column or number of columns in MS SQL Server, you can specify that the index on each column be either ascending or descending.

Generally which index perform faster Clustered or Non-Clustered?

Generally it is faster to read from a clustered index if you want to get back all the columns. You do not have to go first to the index and then to the table.

But not its not always true, have a look on the following article

<http://www.mssqltips.com/sqlservertip/3041/when-sql-server-nonclustered-indexes-are-faster-than-clustered-indexes/>

What is Fill Factor and What is the Best Value for Fill Factor?

Fill factor is the value that determines the percentage of space on each leaf-level page to be filled with data. In an SQL Server, the smallest unit is a page, which is made of Page with size 8K. Every page can store one or more rows based on the size of the row. The default value of the Fill Factor is 100, which is same as value 0. The default Fill Factor (100 or 0) will allow the SQL Server to fill the leaf-level pages of an index with the maximum numbers of the rows it can fit. There will be no or very little empty space left in the page, when the fill factor is 100.

Ref. <http://blog.sqlauthority.com/2011/01/31/sql-server-what-is-fill-factor-and-what-is-the-best-value-for-fill-factor/>

Set-17: Sql Server SP Interview Questions

1). What is Stored Procedure?

Ans: A stored procedure is a named group of SQL statements that have been previously created and stored in the server database. Stored procedures accept input parameters so that a single procedure can be used over the network by several clients using different input data. And when the procedure is modified, all clients automatically get the new version. Stored procedures reduce network traffic and improve performance. Stored procedures can be used to help ensure the integrity of the database.

2). What are the uses of stored procedure?

Ans: Stored procedures are often used for data validation and as access control mechanism. Logic applied in applications can be centralized and stored in applications. Complex procedures and functionalities which require huge amount of data processing and logic implementation access their data by procedures. Data is stored in these procedures and accessed by procedures.

3). What are the type of Stored procedure in SQL Server?

Ans:

- System Defined Stored Procedure

- Extended Procedure
- User Defined Stored Procedure
- CLR Stored Procedure

[click here](#) for more detail

4). What is the difference between a user defined function and a Stored procedure?

Ans: [Click here for answer](#)

5). Explain about recursive stored procedures?

Ans: Recursive stored procedures are used for performing repetitive tasks. Recursive feature is disabled by default but can be activated by using the following command on the server `max_sp_recursion_depth`, also don't forget to rename the system variable to a non zero variable.

6). Can a stored procedure call itself or recursive stored procedure? How much level SP nesting is possible?

Ans: Yes. Because Transact-SQL supports recursion, you can write stored procedures that call themselves. You can nest stored procedures and managed code references up to 32 levels.

7). Have you ever created or used recursive stored procedure? Give example?

Ans: I created a recursive stored procedure for calculating the factorial of a number.

```
CREATE PROCEDURE [dbo].[Factorial_ap]
( @Number Integer,@RetVal Integer OUTPUT )
```

AS

```
    DECLARE @In Integer
    DECLARE @Out Integer
    IF @Number != 1
    BEGIN
        SELECT @In = @Number - 1
        EXEC Factorial_ap @In, @Out OUTPUT
        SELECT @RetVal = @Number * @Out
    END
    ELSE
    BEGIN
        SELECT @RetVal = 1
    END
RETURN
GO
```

8). What are the advantages of using a Stored Procedures?

Ans: Following are the main advantage of using a SP

- Reduce network usage between clients and servers – stored procedures perform intermediate processing on the database server reducing unnecessary data transfer across the network
- Improved security – database administrator can control the users who access the stored procedure
- Reduced development cost and increased reliability
- Stored procedures are tunable to improve the performance. When same stored procedure executed again, it can use the previously cached execution plans
- Separate or abstract server side functions from the client side
- Stored procedures can encapsulate logic. You can change stored procedure code without affecting clients.
- Access to other database objects in a secure and uniform way
- Can prevent SQL injection attacks
- Unit testable
- Encapsulation of business logic – less chances to data become corrupted through faulty client programs.

9). What are the disadvantages of using a Stored Procedures?

Ans: Following are the main disadvantage of using a SP

- Writing and maintaining stored procedures requires more specialized skills.
- There are no debuggers available for stored procedures
- Stored procedure language may differ from one database system to another.
- Poor exception handling
- Tightly coupled to the database system
- Not possible to use objects
- Sometimes it is hard to understand the logic written in dynamic SQL

10). How do we recompile a stored procedure at run time?

Ans: Add the WITH RECOMPILE hint when creating or executing the stored procedure

11). How to Optimize Stored Procedure Optimization?

Ans: There are many tips and tricks for the same. Here are few:

- Include SET NOCOUNT ON statement.
- Use schema name with object name.
- Do not use the prefix "sp_" in the stored procedure name.
- Use IF EXISTS (SELECT 1) instead of (SELECT *).
- Use the sp_executesql stored procedure instead of the EXECUTE statement.
- Try to avoid using SQL Server cursors whenever possible.
- Keep the Transaction as short as possible.
- Use TRY-Catch for error handling.

12). How you will execute the stored procedure as a different user?

Ans: I will use EXECUTE AS

Example-

```
EXECUTE AS user = 'special_user'
EXECUTE YourProcedure
```

13). What is the difference between stored procedure and view in SQL Server?

Ans: **Views** : They are the virtual table which consists of one or more rows and columns from different real tables of the Database. It is the template of rows and columns of multiple tables. You cannot pass any parameters here.

Stored Procedures : They are a collection of pre-executed sql Statements where you can send the parameters as input and retrieve the output data.

Summary difference of Stored procedure and View:

Stored Procedure:

1. Accept parameters
2. Can not be used as a building block in large query.
3. Can contain several statement like if, else, loop etc.
4. Can perform modification to one or several tables.
5. Can not be used as the target for Insert, update, delete queries.
6. We can use view inside stored procedure.

Views:

1. Does not accept parameters
2. Can be used as a building block in large query.
3. Can contain only one single Select query.
4. Can not perform modification to any table.
5. Can be used (sometimes) as the target for Insert, update, delete queries.
6. We can't use stored procedure inside view.

14). How do we recompile a stored procedure at run time?

Ans: By adding the WITH RECOMPILE hint when creating or executing the stored procedure.

15). Explain the differences between Stored Procedures and triggers?

Ans: 1. When you create a trigger you have to identify event and action of your trigger but when you create s.p you don't identify event and action
2. Trigger is run automatically if the event is occurred but s.p don't run automatically but you have to run it manually
3. Within a trigger you can call specific s.p but within a sp you cannot call a trigger
4. Trigger execute implicitly whereas store procedure execute via procedure call from another block.
5. We can call a stored procedure from front end (.asp files, .aspx files, .ascx files etc.) but we can't call a trigger from these files.
6. Stored procedure can take the input parameters, but we can't pass the parameters as an input to a trigger.

16). When would you use stored procedure or functions ?

Ans: Functions are computed values and cannot perform permanent environmental changes to SQL Server (i.e. no INSERT or UPDATE statements allowed).

A Function can be used inline in SQL Statements if it returns a scalar value or can be joined upon if it returns a result set.

for more see the difference between them, and use according to that.

17). Why use functions instead of stored procedure in SQL?

Ans: If you want perform some calculation base on some column value, then you can use function instead of stored proc because you can not call a procedure in a select statement but you can call function in a select statement.

18). Can we use try and catch in stored procedure and function both? give and example?

Ans: We can use try and catch block in stored procedure, but not in user defined function(UDF)

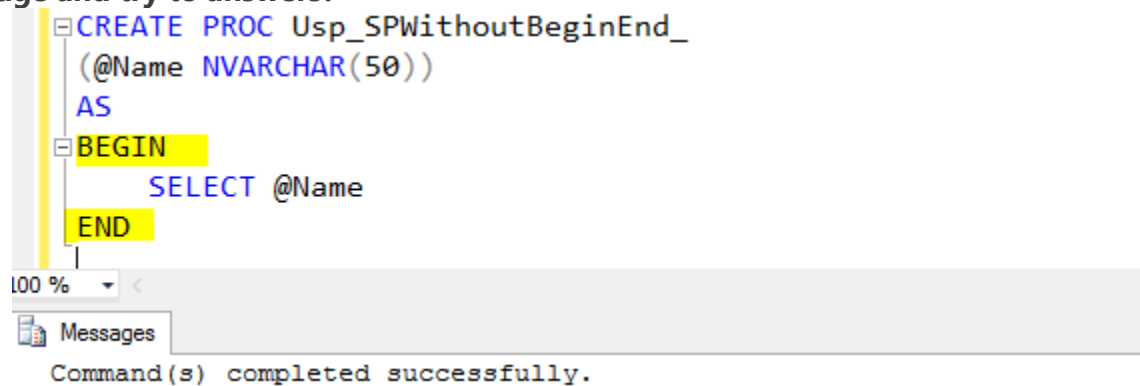
Example(try catch in SP)

```
CREATE PROCEDURE USP_TryCatch_Test
AS
BEGIN TRY
    SELECT 1/0
END TRY
BEGIN CATCH
    SELECT ERROR_NUMBER() AS ErrorNumber
    ,ERROR_SEVERITY() AS ErrorSeverity
    ,ERROR_STATE() AS ErrorState
    ,ERROR_PROCEDURE() AS ErrorProcedure
    ,ERROR_LINE() AS ErrorLine
    ,ERROR_MESSAGE() AS ErrorMessage;
END CATCH
```

19). Can we use multiple select statements in a Stored Procedure SQL Server?

Ans: Yes, we can use multiple select statements in a SP.

20). Can we create Stored Procedure without "Begin" and "End" refer the below image and try to answers?



Ans: Yes, We can


```
CREATE PROC Usp_SPWithoutBeginEnd
(@Name NVARCHAR(50))
AS
SELECT @Name
```

100 % <

Messages

Command(s) completed successfully.

21). Can we return NULL value using stored proc?

```
CREATE PROC Test
AS
BEGIN
    RETURN NULL
END
EXEC Test
```

100 % < |||

Messages

The 'Test' procedure attempted to return a status of NULL, which is not allowed. A status of 0 will be returned instead.

Ans: No, Stored procedures are not allowed to return the NULL value. If you will try to return null value the you will get message as shown in the above screenshot.

Set-18: Sql Server Temp Table Interview Questions NEW

*TEMPORARY TABLE Interview Questions

1). What are the 2 types of Temporary Tables in SQL Server?

1. Local Temporary Tables
2. Global Temporary Tables

2). What is the difference between Local and Global Temporary Tables?

- **Local Temporary Tables:**

1. Prefixed with a single pound sign (#).
2. Local temporary tables are visible to that session of SQL Server which has created it/Exists only for duration of the connection/compound statement.
3. Local temporary tables are automatically dropped, when the session that created the temporary tables is closed.

- **Global Temporary Tables:**

1. Prefixed with two pound signs (##).
2. Global temporary tables are visible to any user and any connection after being created.
3. Global temporary tables are also automatically dropped, when the session that created the temporary tables is closed.

4). In which database, the temporary tables get created?

TEMPDB database.

5). How can I check for the existence of a temporary table?

IF object_id('tempdb..##TEMPTABLE') IS NOT NULL

6). Table Variables vs. Temp Tables?

- Table var doesn't have to be memory-resident. Its pages can be moved to tempdb if memory is low
- Rollback doesn't affect table vars
- Table vars don't participate in transactions or locking
- Any DML operations done on table variables are not logged
- No statistics are maintained on table variables

7). Can you create foreign key constraints on temporary tables?

No

8). Do you have to manually delete temporary tables?

No, temporary tables are automatically dropped, when the session that created the temporary tables is closed. But if you maintain a persistent connection or if connection pooling is enabled, then it is better to explicitly drop the temporary tables you have created. However, It is generally considered a good coding practice to explicitly drop every temporary table you create.

Set-19: Sql Server 2016 Interview Questions

NEW

Q 1 : What are the new features of sql server 2016?

Ans: Here are the Great Features of SQL server 2016

* [Query Store](#)

* Live Query Statistics

- * Native JSON Support
 - * [Temporal Database support](#)
 - * Always Encrypted
 - * [Row Level Security](#)
 - * PolyBase into SQL Server
 - * Column Store
 - * BI for Mobile Devices
 - * [Data Stretch to MS Azure](#)
 - * SSDT (All in One)
- [For more Click here](#)(detailed)

Q 2 : What is Query Store in Sql Server 2016?

Ans : [Click here](#) to see answers

Q 3: Name any three view which are related to Query Store?

Ans : All data that query store stores is available through the following views:

- * sys.query_store_query_text
- * sys.query_store_plan
- * sys.query_context_settings
- * sys.query_store_query
- * sys.query_store_runtime_stats_interval
- * sys.query_store_runtime_stats

Q 4 : What do you understand by LQS?

Ans : LQS stand for Live Query Statistics, SQL Server 2016 has a new feature, called LQS, that allows you to view what is happening during the query execution. LQS lets you view a list of active queries and associated statistics such as current CPU/memory usage, execution time, query progress, and so on.

Q 5 : SQL Server 2016 coming with XML alternate which is known as?

Ans : JSON

Q 6 : Why JSON is becoming important than XML, even for MS SQL Server?

Ans : One of the biggest reasons JSON is becoming more important than XML is that XML has to be parsed with an XML parser, while JSON can be parsed by a standard JavaScript function. And it is very light-weight, this makes it easier and faster than working with XML.

Q 7 : What do you understand by Temporal data support, a new feature introduce in SQL Server 2016?

Ans : SQL Server 2016 introduces support for temporal tables as a database feature that provides built-in support for provide information about data stored in the table at any point in time rather than only the data that is correct at the current moment in time. Temporal is a database feature that was introduced in ANSI SQL 2011 and is now supported in SQL Server 2016

Q 8 : What is Row-Level Security, in SQL Server 2016(new feature)?

Ans : Row-Level Security (RLS) enables developers and DBAs to control access to rows in a

database table. Using RLS, you can store data for different customers, departments, or tenants in the same table, while restricting access to rows based on a query's execution context. For example, you could filter rows returned by "SELECT * FROM myTable" according to the identity of the logged-in user or the value of a session-scoped variable like CONTEXT_INFO.

Q 9 : [What are the difference between SQL Server 2014 and 2016?](#)

Q 10 : [What do you understand by Polybase in SQL Server?](#)

Q 11 : [SQL Server 2016 came with new way to drop object if exist, Explain it.\(DROP IF EXIST\)](#)

Q 12 : **What are the benefits/advantages of this release(SQL Server 2016)? Can you summarize?**

Ans:

Enhanced in-memory performance provides up to 30x faster transactions, more than 100x faster queries than disk-based relational databases and real-time operational analytics.

New Always Encrypted technology helps protect your data at rest and in motion, on-premises and in the cloud, with master keys sitting with the application, without application changes.

#Stretch Database technology keeps more of your customer's historical data at your fingertips by transparently stretching your warm and cold OLTP data to Microsoft Azure in a secure manner without application changes.

#Built-in advanced analytics provide the scalability and performance benefits of building and running your advanced analytics algorithms directly in the core SQL Server transactional database.

#Business insights through rich visualizations on mobile devices with native apps for Windows, iOS and Android.

#Simplify management of relational and non-relational data by querying both with T-SQL using PolyBase.

#Faster hybrid backups, high availability and disaster recovery scenarios to back up and restore your on-premises databases to Microsoft Azure and place your SQL Server AlwaysOn secondaries in Azure.

Set-20: [Sql Server Constraints Interview Questions](#)

SQL Constraints

NOT NULL - Surely field gets value for every row

DEFAULT- If u didnt give a value it default value will be given to field.

PRIMARY KEY- not null+unique

FOREIGN KEY- references a column of another table(mostly primary key)

UNIQUE- All the field values must be different, but it allow one null value.

CHECK CONSTRAINT-kinda integrity constraint (specifies a requirement that must be met by each row in database)

1). Define Constraints?

A constraint is a table column property with performs data validation. Using constraints, you can maintain data integrity by preventing invalid data from being entered.

2). What do you understand by Data integrity?

Data integrity is the consistency and accuracy of the data which is stored in a database.

3). Can you add constraints to a table that already has data?

Yes, But it also depend on data, like if a column containing null values and you adding not null constraint then first you need to replace all alues.

4). How many primary keys can exist on a table?

One

5). What is a Foeign Key?

A FK in one table points to a PK in another table

It prevents any actions that would destroy links between tables with the corresponding data values

FK are used to enforce referential integrity

6). Difference between Primary key and Unique key constraints?

1) Unique constraints will allow a null value. If a field is nullable then a unique constraint will allow at most one null value.

2) SQL server allows many unique constraints per table where it allows just primary key per table.

7). Can we apply Uniquey key constraints on multiple columns?

Yes! Unique key constraints can be applied on a composi of multiple fields to ensure quiqueness of records.

Example : City + State in the StateList table

8). When you create an Unique key constraints then by default which index will be created by DB?

Nonclustered index would be created automatically when you will create a unique key constraints.

9). When you create an Primary key constraints then by default which index will be created by DB?

Clustered index would be created automatically when you will create a Primary key constraints.

10). What do you understand by Default constraints?

A default constraint enters a value in a column when one is not specified in the Insert or Update statement.

11). What are the type of data integrity?

In relational database, there are three type of integrity

1. Domain Integrity(data type, check constraints)
2. Entity Integrity (primary key, unique constraints)
3. Referential Integrity (handled by foreign key constraints)

12). If you doesn't want to check the referential integrity at the time you create the foreign key then which keyword you will use?

Then I will use WITH NOCHECK

Set-21: Sql Server Storage/Size Interview Questions

1). What is the fundamental unit of storage in SQL Server data files and its size?

Ans: A page with a size of 8k

2). How many (maximum) no. of columns can be created in a MS SQL Table?

Ans: Max Columns per 'narrow' table: 1,024

Max Columns per 'wide' table: 30,000

3). What is the difference between Wide and Nonwide tables in SQL Server?

Ans: 1) Wide table can contain 30,000 columns, Non-wide table(basic table) can contain only 1024 columns.

2) Wide Tables are considered to be denormalized tables, Non-wide tables are considered to be Normalized tables.

3) Wide tables are used in OLAP systems, Narrow tables are used in OLTP system.

4) Wide table is new feature in SQL Server 2008. To overcome the problem of having only 1024 columns in Narrow tables.

5) Wide tables don't work with transactional or merge replication, but Non-wide can work.

4). Maximum how many rows can be in the SQL Server tables?

Ans: According to Microsoft specification:

Rows per table: Limited by available storage

But there are some cases where SQL Server will prevent you from adding more rows

- If you have an IDENTITY column and you hit the end of the range for the data type, e.g. 255 for TINYINT, 2,147,483,647 for INT, some ungodly number then possibly the number of inches to the sun and back - for BIGINT, etc. When you try to insert the next row, you'll get error message 815 about overflowing the type.
- If you have a heap with a non-unique index, or a clustered index that is not unique, you won't be able to store more than $2 * 2,147,483,647$ unique index key combinations. When you try to insert $(2 * 2,147,483,647) + 1$ rows with a value of 1 in an INT column that is the only column in a clustered index, you will get error message 666 about exhausting the uniqueifier. This is because the uniqueifier (which helps SQL Server identify a row when there is no true key) is only 4 bytes, which means it can't exceed the capacity of an INT (it does use both positive and negative, unlike IDENTITY unless configured it as such, which is why you get double). Now why you would ever do this, <shrug>... but you could.
- In the VLDB space, a database can only be 524,272 terabytes. Again a very edge case, but if you have a humongous data warehouse then obviously at some point the number of rows - depending on row size - will put you near this limit.

5). What is the maximum size of a varchar(max) variable?

Ans: Maximum size for a varchar(max) is 2GB, or looked up a more exact figure ($2^{31}-1$, or 2147483647).

6). What are the difference Between varchar(8000) and varchar(max)?

- Varchar(8000) stores a maximum of 8000 characters. Varchar(max) stores a maximum of 2 147 483 647 characters.

- VARCHAR(MAX) uses the normal datapages until the content actually fills 8k of data as varchar(8000). When overflow happens, data is stored as old TEXT, IMAGE and a pointer is replacing the old content.
- Columns that are of the large object (LOB) data types ntext, text, varchar(max), nvarchar(max), varbinary(max), xml, or image cannot be specified as key columns for an index
- VARCHAR(MAX) has some ambiguity, if the size of the cell is < 8000 chars, it will be treated as Row data. If it's greater, it will be treated as a LOB for storage purposes. You can know this by querying RBAR.

7). How can i query my sql server to only get the size of database?

Ans: Use "YourDatabaseName"

exec sp_spaceused

8). What would be the LEN and DATALENGTH of NULL value in SQL Server?

Ans: Both above function will return NULL as the length of NULL.

9). How much size "Null" value takes in SQL Server?

Ans:

- If the field is fixed width storing NULL takes the same space as any other value - the width of the field.
- If the field is variable width the NULL value takes up no space.

10). What would be the output of the following script?

Select LEN('A value') --Without space at end

Select LEN('A value ') --With 2 space at end

Ans: Both will return 7 because LEN function not including trailing spaces in SQL Server.

11). How you will find the LEN in above case?

Ans: We can use following tick

Select LEN('A value ' + 'x') - 1

12). Difference between Len() and DataLength()?

Ans: DATALENGTH()- returns the length of the string in bytes, including trailing spaces.

LEN()- returns the length in characters, excluding trailing spaces.

For example

SELECT LEN('string'), LEN('string '), DATALENGTH('string'), DATALENGTH('string '),
LEN(N'string'), LEN(N'string '), DATALENGTH(N'string'), DATALENGTH(N'string ')

will return 6, 6, 6, 9, 6, 6, 12, 18

Set-22: Sql Server Very Basic Interview Questions

1). What are the different locks in Sql Server?

Ans: There are six types of locks

- Intent
- Shared
- Update
- Exclusive
- Schema
- Bulk Update

2). What are the different types of BACKUPS available in SQL Server 2005?

Ans: In SQL Server 2005 Backup Types are

- Full
- Transaction Log
- Differential
- Partial
- Differential Partial
- File and Filegroup
- Copy Only Database Backups

3). What are Data files?

Ans: This is the physical storage for all of the data on disk. Pages are read into the buffer cache when users request data for viewing or modification. After data has been modified in memory (the buffer cache), it is written back to the data file during the checkpoint process.

4). What is SQL Profiler?

Ans: SQL Profiler is a graphical tool that allows system administrators to monitor events in an instance of Microsoft SQL Server. You can capture and save data about each event to a file or SQL Server table to analyze later.

5). What is the difference between DELETE and TRUNCATE statement?

Ans: A DELETE statement enables you to selectively remove data from a table, whereas The TRUNCATE statement unconditionally removes all rows from a table.

6). What are the types of transaction levels in SQL SERVER?

Ans: There are four transaction levels in SQL SERVER.

- Read committed
- Read uncommitted
- Repeatable read
- Serializable

7). What is the difference between a DDL trigger and a DML trigger?

Ans: A DDL trigger executes in response to a change to the structure of a database (for example, CREATE, ALTER, DROP).

A DML trigger executes in response to a change in data (INSERT, UPDATE, DELETE).

8). What database does SQL Server use for temporary tables?

Ans: TempDB

9). What is a linked server?

Ans: A linked server enables you to work with other SQL Servers as well as databases other than SQL Server databases, right from within Management Studio.

10). Define Synonym?

Ans: Synonym is an alternative method to creating a view that includes the entire table or view from another user it to create a synonym.

A synonym is a name assigned to a table or view that may thereafter be used to refer to it.

11). What is an active database?

Ans: Active database is a database that includes active rules, mostly in the form of ECA rules(Event Condition rules). Active database systems enhance traditional database functionality with powerful rule processing capabilities, providing a uniform and efficient mechanism for database system applications

12). What is the difference between a HAVING CLAUSE and a WHERE CLAUSE?

Ans: HAVING can be used only with the SELECT statement. HAVING is typically used in a GROUP BY clause. When GROUP BY is not used, HAVING behaves like a WHERE clause.

Having Clause is basically used only with the GROUP BY function in a query whereas WHERE Clause is applied to each row before they are part of the GROUP BY function in a query.

13). What are the purpose of Normalization?

Ans: Minimize redundancy in data.

Remove insert, delete and update anomaly during the database activities.

Reduce the need to reorganize data it is modified or enhanced.

Normalization reduces a complex user view to a set of small and stable subgroups of fields or relations.

14). What are the types of database recovery models?

Ans: There are 3 types of database recovery models available

- Full
- Simple
- Bulk Logged

15). What the difference between UNION and UNIONALL?

Ans: Union will remove the duplicate rows from the result set while Union all does'nt.

16). What is the difference between a local and a global variable?

Ans: A Local temporary table exists only for the duration of a connection or, if defined inside a compound statement, for the duration of the compound statement.

A Global temporary table remains in the database permanently, but the rows exist only within a given connection. When connection are closed, the data in the global temporary table disappears. However, the table definition remains with the database for access when database is opened next time.

17). What is NOT NULL Constraint?

Ans: A NOT NULL constraint enforces that the column will not accept null values. The not null constraints are used to enforce domain integrity, as the check constraints.

18). What is log shipping?

Ans: Log shipping is the process of automating the backup of database and transaction log files on a production SQL server, and then restoring them onto a standby server. Enterprise Editions only supports log shipping. In log shipping the transactional log file from one server is automatically updated into the backup database on the other server.

19). Define Joins?

Ans: A Join combines columns and data from two or more tables (and in rare cases, of one table with itself).

20). What is Cross Join?

Ans: A cross join that does not have a WHERE clause produces the Cartesian product of the tables involved in the join. The size of a Cartesian product result set is the number of rows in the first table multiplied by the number of rows in the second table.

Set-23: Sql Server 2017 Interview Questions

NEW

What do you understand by Adaptive query processing launched in SQL Server 2017?

SQL Server 2017 and Azure SQL Database introduce a new generation of query processing improvements that will adapt optimization strategies to your application workload's runtime conditions.

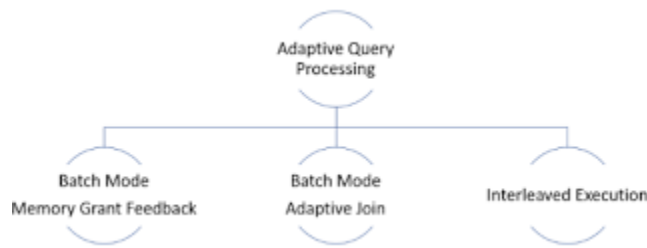
Name all three Adaptive query processing features?

In SQL Server 2017 and Azure SQL Database there are three adaptive query processing features by which you can improve your query performance:

Batch mode memory grant feedback.

Batch mode adaptive join.

Interleaved execution.



Write T-SQL statement to enable adaptive query processing?

You can make workloads automatically

adaptive query processing by enabling compatibility level 140 for the database. You can set this using Transact-SQL. For example:

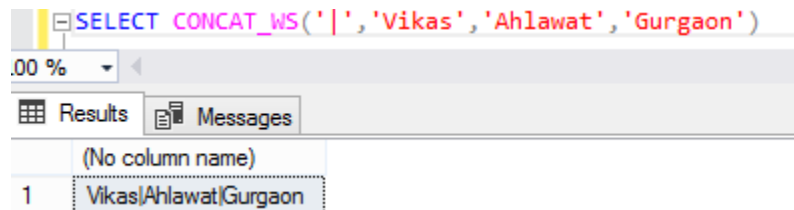
```
ALTER DATABASE [WideWorldImportersDW] SET COMPATIBILITY_LEVEL = 140;
```

Name the new string function which is very useful to generate csv file from a table?

CONCAT_WS is new function launched in SQL Server 2017 it takes a variable number of arguments and concatenates them into a single string using the first argument as separator. It requires a separator and a minimum of two arguments.

It is very helpful in generate comma or pipe separated csv file content.

Example:



What do you understand by TRANSLATE in SQL Server 2017?

TRANSLATE is a new string function launched in SQL Server 2017, It is very helpful to

replace multiple character with multiple character respectively. It will return an error if characters and translations have different lengths.
In below example we are using traditional REPLACE function, and for same task we will use TRANSLATE function lets see the difference.

```
--Then
SELECT REPLACE(REPLACE(REPLACE(REPLACE('2*[3+4]/{7-2}','[','('),']',')'), '{','('),'}',''))

--Now doing same thing as above
SELECT TRANSLATE('2*[3+4]/{7-2}','[{','('),'}','('))
```

By Replace	
1	2*(3+4)/(7-2)

By Translate	
1	2*(3+4)/(7-2)

What is the use of new TRIM function?

It Removes the space character char(32) or other specified characters from the start or end of a string.

```
SELECT TRIM('.,!' FROM '.,!, Vikas .') AS Result;
```

Result
1 Vikas

Is SQL Server 2017 support Python?

Yes

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PART 1 : SQL SERVER INTERVIEW QUESTIONS ANSWERS

- 1). [What is RDBMS?](#)
- 2). [What are the properties of the relational tables?](#)
- 3). [What is Normalization?](#)
- 4). [What is De-Normalization?](#)
- 5). [What is Self Join?](#)
- 6). [What is Cross Join?](#)
- 7). [What are the different types of cursor?](#)
- 8). [What is a default constraint?](#)
- 9). [How to strip all non-alphabetic characters from string in SQL Server?](#)

10). How do I find a value anywhere in a SQL Server Database?

11). [Suppose that you have a table with AreaID but for that column you forgot set Identity. later you got it. Now you want to set identity without effecting the current records, and you only enabled Identity with seed 1. Then what would be the next value for AreaID in our below table example?](#)

AreaID	AreaName	ReasonDesc
12	34	432
100	rt	rt
101	gfd	fd
20	fd	ghf
102	fds	fd
111	fds	fds
90	d	gf
81	tg	r
NULL	NULL	NULL

11.1). [How to pass an array\(or a table variable\) into a SQL Server stored procedure?](#)

12). When should you use "with (nolock)"?

13). [Is it possible to insert into two tables at the same time?](#)

14). Preferred Method of Storing Passwords In Database?

15). [Can a view be updated/inserted/deleted? If Yes – under what conditions?](#)

16). Where the integrity constraints are stored in data dictionary?

17). [How many LONG columns are allowed in a table? Is it possible to use LONG columns in WHERE clause or ORDER BY?](#)

18). [What is Collation?](#)

19). [What is SQL Server Agent?](#)

20). How to convert Rows to Columns in SQL Server?

21). What is the difference between ROW_NUMBER and Ranking function in SQL SERVER?

22). Difference between Where clause and Having clause in SQL Server?

- 23). What is data dictionary?
- 24). Explain the use of SSIS in BI?
- 25). In Linq Query why from clause come first as select statement ?
- 26). [What is collation?](#)
- 27). How to convert a table data in XML format in sql server?
- 28). What are the different types of locks?
- 29). What are Pessimistic and optimistic Locks?
- 30). What is the difference between an Update and Exclusive lock?
- 31). What is the difference between table and view in sql server?
- 32). What is NOLOCK hint?
- 33). What is NOT NULL Constraint?
- 34). What is the difference between DATETIME2 and DATETIME?
- 35). [Explain Geography datatype in SQL Server?](#)
- 36). What is nolock hint in sql server 2008?
- 37). What are the different types of SQL Commands?
- 38). What is the difference between a DDL trigger and a DML trigger?
- 39). What are the types of transaction levels in SQL SERVER?
- 40). Which TCP/IP port does SQL Server run on? How can it be changed?
- 41). [What is @@ERROR?](#)
- 42). what is the difference between count(*) and count(1)?
- 43). What are the difference between clustered and a non-clustered index?
- 44). What's the maximum size of a row?
- 45). What is HINT?
- 46). How do you delete duplicate records?

47). How do you delete all tables?

48). What is Aggregate function?

49). What is the difference between a query and stored procedure?

50). What will be the result of this query. select * from TableName order by 1 .Will this query throw an error?

[50.1\). How to get specific string/Date from a string in SQL Server using TSQL?](#)

```
DECLARE @S VARCHAR(MAX) =  
'09/14/2017:Your SR is ON HOLD - This is the final reminder to provide 09/15/2017e 09/13/2017:Your  
09/12/2017:Your SR is ON HOLD - We require the clarification from you on 254119.  
A SR has been received by DMS and its execution 09/18/2017 is in progress.  
A SR has been received by SDS and 09/25/2017 execution has not yet started on it.  
A SR has been received by SDS and execution has not yet started on it.'
```



Results		Messages
		Date
1	09/14/2017	
2	09/15/2017	
3	09/13/2017	
4	09/12/2017	
5	09/18/2017	
6	09/25/2017	

51). What are the different index configurations a table can have?

52). What are the different types of BACKUPS available in SQL Server 2005?

53). What are the different locks in Sql Server?

54). What is OLTP (Online Transaction Processing)?

55). What's the difference between a primary key and a unique key?

56). What is the difference between DELETE and TRUNCATE statement?

57). [What is SQL Profiler?](#)

58). [What are Data files?](#)

- 59). What is difference between DELETE and TRUNCATE commands?
- 60). When is the use of UPDATE_STATISTICS command?
- 61). What is the default port of Microsoft SQL Server?
- 62). What is Data Compression in sql server 2012?
- 63). What is the difference between a HAVING CLAUSE and a WHERE CLAUSE?
- 64). [What is a linked server?](#)
- 65). What database does SQL Server use for temporary tables?
- 66). What are different Types of Sub-Queries?
- 67). What are the authentication modes in SQL Server? How can it be changed?
- 68). Which command using Query Analyzer will give you the version of SQL server and operating system?
- 69). What is service Broker?
- 70). What is the difference between HAVING and WHERE clause?
- 71). What is a B-Tree?
- 72). What is the difference between a HAVING CLAUSE and a WHERE CLAUSE?
- 73). What is an active database?
- 74).?
- 75). [Can a stored procedure call itself or recursive stored procedure? How much level SP nesting is possible?](#)
- 76). [What is Log Shipping?](#)
- 77). Name 3 ways to get an accurate count of the number of records in a table?
- 78). What does it mean to have QUOTED_IDENTIFIER ON? What are the implications of having it OFF?
- 79). What is the difference between a Local and a Global temporary table?
- 80). What is the STUFF function and how does it differ from the REPLACE function?

- 81). What is the difference between TEMP tables and Variable Tables?
- 82). What are the different String Functions in SQL Server?
- 83). What are the different Index configurations a table can have?
- 84). What is a Filtered Index?
- 85). What are indexed views?
- 86). What is the restriction on Indexed view?
- 87). What are Statistics? How can you find it in SQL Server?
- 88). How you can remove time part of datetime in SQL Server?
- 89). NOT IN vs NOT EXISTS?
- 90). What are the different Mathematical Functions in SQL Server?
- 91). What is the difference between COUNT and COUNT_BIG?
- 92). What is WITH CHECK OPTION on view?
- 93). What is the difference between INSTEAD OF TRIGGER and AFTER Trigger?
- 94). How is the ACID property related to the database?
- 95). What are the different normalization forms?
- 96). [What are different part of a SQL Page?](#)
- 97). What is the difference between a local and a global variable?
- 98). What is PRIMARY KEY?
- 99). What is UNIQUE KEY constraint?
- 100). What is FOREIGN KEY?
- 101). What is CHECK Constraint?
- 102). What is the real time example of RIGHT Outer Join?
- 103). [What are the types of database recovery models?](#)
- 104). What is NOT NULL Constraint?

- 105). What are the different data types in SQL Server?
- 106). What is blocking?
- 107). What are the different Date functions in SQL Server?
- 108). How to get @@ERROR and @@ROWCOUNT at the same time?
- 109). What is a Scheduled Jobs or what is a Scheduled Tasks?
- 110). [What are the advantages of using Stored Procedures?](#)
- 111). What is a table called, if it has neither Cluster nor Non-cluster Index? What is it used for?
- 112). Can SQL Servers linked to other servers like Oracle?
- 113). What is BCP? When does it used?
- 114). How to implement one-to-one, one-to-many and many-to-many relationships while designing tables?
- 115). What is an execution plan? When would you use it? How would you view the execution plan?
- 116). What is the difference between CHAR and VARCHAR?
- 117). What is the difference between VARCHAR and VARCHAR (max)?
- 118). ...?
- 119). [What are different types of Collation Sensitivity?](#)
- 120). [What is a Stored Procedure?](#)
- 121). [What are the different types of collation sensitivity?](#)
- 122). [What is dirty read?](#)
- 123). How do you check collation and compatibility level for a database?
- 124). What is a covered Index?
- 125). What is the maximum row size for a table?
- 126). When I delete data from a table, Does SQL Server reduce the size of table?

- 127). How do you rebuild master database?
- 128). What is PIVOT and UN-PIVOT?
- 129). What is EXCEPT operation?
- 130). What are GROUPING Sets?
- 131). What are the row constructors inside SQL Server?
- 132). What are table valued parameters?
- 133). How do you identify and resolve deadlock?
- 134). What are Spare columns?
- 135). How to get last inserted id?
- 136). Which is database shrinking?
- 137). What is the maximum number of columns a table can have?
- 138). What are included columns?
- 139). What is INTERSECT operation?
- 140). What is RAID?
- 141). What are the limitations of Select Into clause?
- 142). What is FileStream in SQL Server?
- 143). What do you mean by TableSample?
- 144). [What are the disadvantages of using Stored Procedure?](#)
- 145). What is the difference between COMMIT and ROLLBACK?
- 146). What is Transaction?
- 147). How do you do Error Handling in SQL server?
- 148). What is RAISEERROR?
- 149). What is SQL INJECTION?

- 150). How do you find list of schema names and table names from the database?
- 151). Why can be there only one clustered index?
- 152). Can we create view on TEMP table?
- 153). Can we use constraints on TEMP Table?
- 154). How to recompile a stored procedure at run time?
- 155). Does the order of columns in UPDATE statement matters?
- 156). What are the different types of System database inside SQL Server?
- 157). What is the use of Transaction Log file?
- 158). What is the difference between view and Materialized view?
- 159). What is database mirroring?
- 160). How does SQL Server database engine work?
- 161). What is the maximum number of indices per table?
- 162). What are the purpose of Normalisation?
- 163). What does the Merge Statement do?
- 164). What are the new data types introduced in SQL Server 2012?
- 165). Define Hierarchyid data type?
- 166). [What are synonyms?](#)
- 167). What is CTE?
- 168). What are the advantages of CTE?
- 169). Can we write Sub Queries into Simple Select Using join and CTE?
- 170). Can CTE be recursive? Till what level it can be nested?
- 171). What is LINQ?
- 172). What is XML?
- 173). How can you find tables without Indexes?

- 174). How do you find the size of index?
- 175). How do you copy data from one table to another table?
- 176). What is ROW_NUMBER()?
- 177). What is ROLLUP clause?
- 178). What are ranking functions?
- 179). How do you stop a log file from growing too big?
- 180). How do we use DBCC commands?
- 181). What is CDC?
- 182). What are the main performance differences between varchar and nvarchar SQL Server data types?
- 183). [What is the difference between varchar and nvarchar?](#)
- 184). How do I insert multiple rows WITHOUT repeating the "INSERT INTO dbo.Blah" part of the statement?
- 185). What is the difference between Index Seek and Index Scan?
- 186). Can we insert data if the clustered index is disabled?
- 187). What is standby server?
- 188). How do you disable Index?
- 189). How do you enable index?
- 190). What are the steps to create a Table Partition?
- 191). What are the basics of Table Partitioning in SQL Server?
- 192). How do you copy tables, schemas, and views from one sql server to another SQL Server?
- 193). Where are SQL Server user names and passwords stored in?
- 194). Can we have Triggers on Temp table and Variable Table?
- 195). What is the syntax for encrypting a column in SQL Server?

- 196). How do you send email on SQL Server?
- 197). What is query optimization ?
- 198). How many maximum Identity columns we can have in a single table?
- 199). How to find all Triggers in database?
- 200). Can we add constraint on Variable Table?
- 201). What is Schema?
- 202). Can we create multiple constraints on a single column?
- 203). Can we rename table and column using ALTER command?
- 204). How to rename Table and Column?
- 205). How to rename Database?
- 206). What is the disadvantage of Index?
- 207). How can we find the table size?
- 208). How to find N highest salary?
- 209). What is the difference between data mirroring and log shipping?
- 210). What are the different backup options within SQL Server?
- 211). How to add DEFAULT constraint on existing column? Write query
- 212). How to add NOT NULL constraint on existing column? Write query
- 213). How do you find why query is running slow?
- 214). How to create foreign key constraints on temporary table?
- 215). What is Dynamic SQL?
- 216). Can we create a table name as Table?
- 217). What is the difference between CAST and CONVERT Function?
- 218). What Are Binary String Data Types?

- 219). How to execute Dynamic SQL?
- 220). Can we use Variable table in Dynamic SQL?
- 221). How to execute queries stored in a table?
- 222). How can you capture the length of column when it is text, image and ntext data type?
- 223). Is it possible to import data using TSQL?
- 224). How can you prevent TSQL code from running on a Production server?
- 225). Define Unique Key?
- 226). What is the use of SP_Helptext , SP_HelpIndex stored procedure?
- 227). Can we change order of triggers?
- 228). What do you understand by Joins in SQL Server?
- 229). How to disable Auto Commit in SQL Server?
- 230). Can we recover deleted data?
- 231). How to delete Top 100 records from a table?
- 232). How to delete two tables using one Drop command?
- 233). Can I create CTE in Trigger?
- 234). Can we create Variable table in Trigger?
- 235). Can we use cursors in Trigger?
- 236). Can we call Stored Procedure in Trigger?
- 236). Can we call Stored Procedure in Trigger?
- 236.1). [Can we call Stored Procedure in a View?](#)
- 237). Can I create Triggers on TEMP table?
- 238). Can we use PRINT Command in Triggers?
- 239). How Triggers are fired?
- 240). Why do we use DECLARE for cursor and Variable table?

- 241). How to take database online –offline?
- 242). How to copy data using Bulk copy when columns data type doesn't match?
- 243). What is SP_Configure commands and SET commands?
- 244). Can Inserted table have multiple records?
- 245). Can we perform DML & DDL operation on Inserted and Deleted tables?
- 246). What is the advantage of Index?
- 247). Which is fast UNION or UNION ALL?
- 248). Can we create clustered index on view?
- 249). Can we create computed columns?
- 250). Can we change the Column Sequence order inside table?
- 251). [Truncate is DDL or DML?](#)
- 252). Can we create view from view?
- 253). What the difference between UNION and UNIONALL?
- 254). How to join two tables from different database?
- 255). Can we use ORDER BY Clause in UNION?
- 256). What is difference between Deterministic and Non Deterministic Functions?
- 257). What is Synchronous and asynchronous function?
- 258). Can we add Identity column after creating the table?
- 259). Can we drop Identity column?
- 260). Can we store Image, MP3 and binary data in SQL Server?
- 261). How can we disable Identity column?
- 262). Can Foreign key column have NULL?
- 263). How to find column description of a table?

- 264). How to delete Duplicate records?
- 265). How to find employees hired in last month?
- 266). How to find all rows that contains only numeric data?
- 267). How to find primary key name if not given by the user for a particular column?
- 268). Can we add two columns using ALTER command?
- 269). How to get row number without ROW_NUMBER function?
- 270). What is Partitioned View?
- 271). What is the difference between UNIQUE Key and Primary Key?
- 272). How to find who deleted/ dropped from Transaction log?
- 273). Can we ALTER two columns using ALTER command?
- 274). How to clean Buffer in SQL Server?
- 275). How to clear Execution Plan cache?
- 276). How can we check for existence of any object in database?
- 277). What is meant by differed name resolution in SQL Server?
- 278). How to find Organization Employee Hierarchy using SQL?
- 279). How does a recursive CTE works?
- 280). What is Auditing inside SQL Server?
- 281). What is the difference between GETDATE() and SYSDATETIME()?
- 282). How do you check if Automatic Statistic Update is enabled for a database?
- 283). What are the limitations of view?
- 284). How to find department with highest number of employees?
- 285). What are different operation available on ONDELETE and ONUPDATE?
- 286). What are the uses of System tables?
- 287). What are WAIT Types?

- 288). [What is Data Page?](#)
- 289). [What is FILL Factor?](#)
- 290). Sql server difference between view and stored procedure?
- 291). Sql server difference between unique and nonunique index?
- 292). Sql server difference between update lock and exclusive lock?
- 293). Sql server difference between windows authentication and sql server authentication?
- 294). Sql server difference between sysobjects and sys.objects?
- 295). [Sql server difference between session and connection?](#)
- 296). Sql server difference between set and select variable?
- 297). Sql server difference between shrink database and shrink files?
- 298). Sql server difference between revoke and deny?
- 299). Sql server difference between rank and dense_rank?
- 300). Sql server difference between gdr and qfe?
- 301). Sql server difference between db_owner and dbo?
- 302). Sql server difference between log shipping and mirroring?
- 303). Sql server difference between isnull and coalesce?
- 304). Differences between ISNULL and IS NULL?
- 305). Difference between hadoop and sql server?
- 306). Difference between PatIndex and CharIndex function in SQL SERVER?
- 307). What is the difference between SQL Server standard and web edition?
- 308). Difference between numeric,float and decimal in sql server?
- 309). Difference between binary and varbinary datatype in Sql server?
- 310). Sql server difference between count(*) and count(1)

- 311). Sql server difference between exec and sp_executesql?
- 312). Difference between blocking and deadlock sql server?
- 313). Difference between detach and take offline in sql server?
- 314). Difference between Index Scan / Index Seek in sql server?
- 315). [What is the difference between TRY CONVERT and Convert?](#)
- 316). [Write down the query to get the list of tables changed with in the database in last 5 days?](#)
- 317). [Write a query to insert your name 1000 times without Using While Loop in SQL Server?](#)
- 318). [SQL Server 2016 came with new way to drop object if exist, Explain it.\(DROP IF EXIST\)](#)
- 319). [Can you drop the database on which you are using/working currently, in same session?](#)
- 320). [Write down the T-SQL Script to print then number from 1 to 10?](#)
- 321). [What is the difference between Wide and Nonwide tables in SQL Server?](#)
- 322). [What do you understand by index id = 0 and Index id = 1, related to sys.indexes table? What they represent?](#)
- 323). [What are NDF files in SQL Server?](#)
- 324). [What is the difference between DateTime and DateTimeOffset data types in SQL Server?](#)
- 325). [What is Slot Array in Sql Server? How it is related to Database Page?](#)
- 326). [What is the extension for trace file in SQL Server Profiler?](#)
- 327). [How to pass an array\(or a table variable\) into a SQL Server stored procedure?](#)
- 328). [What is forwarding pointer in SQL Server? How it is helpful in performance optimization?](#)
- 329). [How you will trace all event only from a selected Database or Procedure using SQL Server Profiler?](#)
- 330). [What is the difference between SQL, PL-SQL and T-SQL?](#)

- 331). [Name any three standard trace templates provided by SQL Server Profiler?](#)
- 332). [Can you edit Sql Profiler existing/default templates?](#)
- 333). [How to strip all non-alphabetic characters from string in SQL Server?](#)
- 334). [Database dot dot TableName\(Database,TableName\) will point to which schema in SQL Server, Is this way to select data will fail or not?](#)
- 335). [Write down the query to get list of all supported language by SQL Server?](#)
- 336). [Name the SQL Server functions used to encrypt and decrypt password?](#)
- 337). [What would be the output of the following script?](#)
DECLARE @Name **VARCHAR**(20)
SET @Name = 'विकास अहलावत'
SELECT @Name
- 338). [What is the backup strategy in your organization? \(TCS\)](#)
- 339). [How to split a comma-separated value to columns?](#)

'First,Second,Third'

↓

	Column1	Column2	Column3
1	First	Second	Third

- 340). [What would be the output of following SQL Script.](#)

```
IF(NULL = NULL)
    PRINT 'True'
ELSE
    PRINT 'False'
```

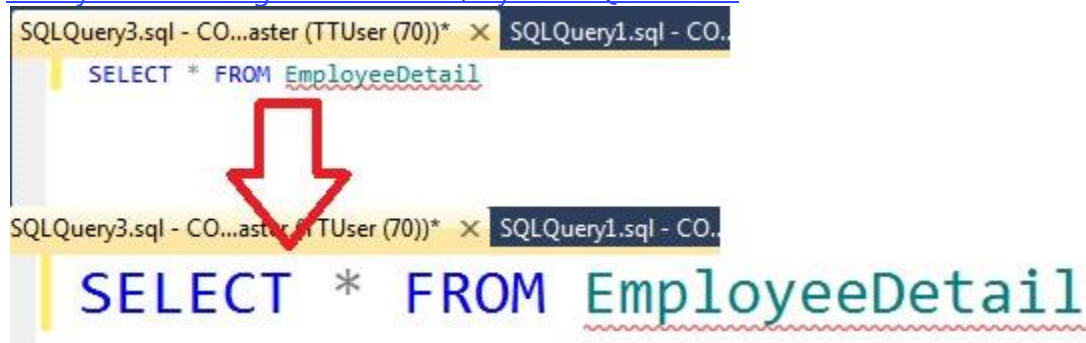
341). [What is the difference between Master, MSDB,TempDB and Model Databases?](#)

342). [What is the main rule of first normal form? second form ? third form?](#)

343). [What is the difference between Data files and Log Files in Sql Server?](#)

344). [How you will select all records using TOP keyword in SQL Statement, even you don't know the count of table?](#)

345). [How you will change the font size/style in SQL Server?](#)



346). [What will be the output of the following query?](#)

```
SELECT CASE WHEN 1=1 THEN 'Vikas Ahlawat1'
           WHEN 2=2 THEN 'Vikas Ahlawat2'
           ELSE 'Vikas Ahlawat3' END AS Name
```

347.) [Suppose you have following table"TestUpdate".](#)

SELECT * FROM Testupdate

Results		Messages	
		ID	
1	1		
2	2		
3	3		
4	4		
5	5		

[What would be the output of following query?](#)

```
UPDATE Testupdate SET ID = ID + (SELECT MAX(ID) FROM Testupdate)
SELECT * FROM Testupdate
```

348). [Suppose you have above table "TestUpdate". then what would be the output of following query?](#)

```
UPDATE Testupdate SET ID = ID + (SELECT MAX(ID) FROM Testupdate)
GO 2
SELECT * FROM Testupdate
```

349). [Will Non-Clustered Index used every time by SQL Server Engine?](#) Asked in HCL/Unitedhealth Group

350). [What do you understand by Column Density in SQL Server?](#)

351). [How column Density is effect to Index?](#)

352). [What Execute in SQL Server First?](#)

- A) WHERE
- B) SELECT
- C) ON
- D) FROM
- E) TOP

353). [What do you understand by "sql variant" datatype in SQL Server?](#)

354). [What do you understand by "Sp_MSforeachtable", Please explain?](#)


355). [What will execute first tell the order of every keyword used in below query?](#) (Wipro/Sapient)

Order of Query Process Phases-SQL Server

```
SELECT
TOP 10 E.FirstName,
SUM(E.Salary)
From EmployeeDetail E
INNER JOIN ProjectDetail P ON E.EID = P.EID
WHERE E.Salary IS NOT NULL
GROUP BY FirstName
HAVING SUM(E.Salary) > 500000
ORDER BY E.FirstName
```

356). [Write query to show marks as below](#)

Results				Messages			
	RN	Subject	Marks				
1	100	Math	87				
2	100	Hindi	56				
3	100	English	97				
4	101	Math	87				
5	101	Hindi	45				
6	101	English	78				
7	102	Math	56				
8	102	Hindi	78				
9	102	English	49				



	RN	Math	Hindi	English	MaxMarks_Subject
1	100	87	56	97	97-English
2	101	87	45	78	87-Math
3	102	56	78	49	78-Hindi

357). [What do you understand by sp_MSForEachTable?](#)

358). [How you will replace "A" with "B" and "B" with "A" in following string "ABAB"?\(HCL\)](#)

'ABAB' → 'BABA'


359). [How you will print table using SQL query?\(HCL\)](#)

Results		Messages								
	TableOf1	TableOf2	TableOf3	TableOf4	TableOf5	TableOf6	TableOf7	TableOf8	TableOf9	TableOf10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100


360). [What would be the output of following script. \(asked in TCS with more nested question\)](#)

```
SELECT 'Vikas'+ NULL +'Ahlawat' AS [FullName]
```

361). [How to Generate Sequence without using Ranking functions in SQL Server?](#)

	A			RN	A
1	1		1	1	1
2	1		2	2	1
3	3		3	3	3
4	5		4	4	5
5	7		5	5	7
6	9		6	6	9
7	11		7	7	11
8	13		8	8	13
9	15		9	9	15
10	17		10	10	17
11	19		11	11	19
12	21		12	12	21

362). [Repeat Rows N Times According to Column Value in SQL Server?](#)

Name	NTimes		Name	NTimes
Vikas	4		Vikas	4
Rohit	1		Vikas	4
Vinod	3		Vikas	4
			Vikas	4
			Rohit	1
			Vinod	3
			Vinod	3
			Vinod	3

363). [Which built-in function returns the number of active transactions?](#)

What Do you think this is ending of SQL Server Interview Questions?
NO

PART 2: SQL SERVER INTERVIEW QUERIES QUESTIONS ANSWERS

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