

## Part 49 – CTE

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# In this session we will learn

- Common table expressions

## **Prerequisite:**

Part 48 - Derived tables & CTE's

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# CTE

**Common table expression (CTE)** is introduced in SQL server 2005. A CTE is a temporary result set, that can be referenced within a SELECT, INSERT, UPDATE, or DELETE statement, that immediately follows the CTE.

Id	Name	Gender	DepartmentId
1	John	Male	3
2	Mike	Male	2
3	Pam	Female	1
4	Todd	Male	4
5	Sara	Female	1
6	Ben	Male	3

--Syntax

```
WITH cte_name (Column1, Column2, ..)  
AS  
( CTE_query )
```

DeptId	DeptName
1	IT
2	Payroll
3	HR
4	Admin



DeptName	TotalEmployees
Payroll	1
Admin	1
IT	2
HR	2

```
With EmployeeCount (DepartmentId, TotalEmployees)  
as  
(  
    Select DepartmentId, COUNT(*) as TotalEmployees  
    from tblEmployee  
    group by DepartmentId  
)  
  
Select DeptName, TotalEmployees  
from tblDepartment  
join EmployeeCount  
on tblDepartment.DeptId = EmployeeCount.DepartmentId  
order by TotalEmployees
```

# CTE

```
With EmployeeCount (DepartmentId, TotalEmployees)
as
(
    Select DepartmentId, COUNT(*) as TotalEmployees
    from tblEmployee
    group by DepartmentId
)

Select 'Hello'

Select DeptName, TotalEmployees
from tblDepartment
join EmployeeCount
on tblDepartment.DeptId = EmployeeCount.DepartmentId
order by TotalEmployees
```

A CTE can only be referenced by a SELECT, INSERT, UPDATE, or DELETE statement, that immediately follows the CTE.

```
--Creating multiple CTE's using a single WITH clause
With EmployeesCountBy_Payroll_IT_Dept (DepartmentName, Total)
as
(
    Select DeptName, COUNT(Id) as TotalEmployees
    from tblEmployee
    join tblDepartment
    on tblEmployee.DepartmentId = tblDepartment.DeptId
    where DeptName IN ('Payroll', 'IT')
    group by DeptName
),
EmployeesCountBy_HR_Admin_Dept (DepartmentName, Total)
as
(
    Select DeptName, COUNT(Id) as TotalEmployees
    from tblEmployee
    join tblDepartment
    on tblEmployee.DepartmentId = tblDepartment.DeptId
    where DeptName IN ('HR', 'Admin')
    group by DeptName
)
Select * from EmployeesCountBy_HR_Admin_Dept
UNION
Select * from EmployeesCountBy_Payroll_IT_Dept
```

# Additional Resources

- PRAGIM Home Page:

- [www.PragimTech.com](http://www.PragimTech.com)

- Resources:

- ASP.NET Interview Questions
  - [www.VenkatASPInterview.Blogspot.com](http://www.VenkatASPInterview.Blogspot.com)
  - C# Interview Questions
  - [www.VenkatCSharpInterview.Blogspot.com](http://www.VenkatCSharpInterview.Blogspot.com)
  - SQL Server Interview Questions
  - [www.venkatsqlinterview.Blogspot.com](http://www.venkatsqlinterview.Blogspot.com)