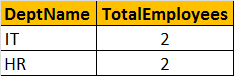
**In this video we will learn about, Derived tables and common table expressions**(CTE's). We will also explore the differences between Views, Table Variable, Local and Global Temp Tables, Derived tables and common table expressions.   
  
   
  
   
  
   
  
Let's create the required Employee and Department tables, that we will be using for this demo.   
  
**SQL Script to create tblEmployee table:**  
CREATE TABLE tblEmployee  
(  
  Id int Primary Key,  
  Name nvarchar(30),  
  Gender nvarchar(10),  
  DepartmentId int  
)  
  
**SQL Script to create tblDepartment table**  
CREATE TABLE tblDepartment  
(  
 DeptId int Primary Key,  
 DeptName nvarchar(20)  
)  
  
**Insert data into tblDepartment table**  
Insert into tblDepartment values (1,'IT')  
Insert into tblDepartment values (2,'Payroll')  
Insert into tblDepartment values (3,'HR')  
Insert into tblDepartment values (4,'Admin')  
  
**Insert data into tblEmployee table**  
Insert into tblEmployee values (1,'John', 'Male', 3)  
Insert into tblEmployee values (2,'Mike', 'Male', 2)  
Insert into tblEmployee values (3,'Pam', 'Female', 1)  
Insert into tblEmployee values (4,'Todd', 'Male', 4)  
Insert into tblEmployee values (5,'Sara', 'Female', 1)  
Insert into tblEmployee values (6,'Ben', 'Male', 3)   
  
**Now, we want to write a query which would return the following output**. The query should return, the Department Name and Total Number of employees, with in the department. The departments with greatar than or equal to 2 employee should only be returned.  
   
  
  
**Obviously, there are severl ways to do this**. Let's see how to achieve this, with the help of a view  
**Script to create the View**  
Create view vWEmployeeCount  
as  
Select DeptName, DepartmentId, COUNT(\*) as TotalEmployees  
from tblEmployee  
join tblDepartment  
on tblEmployee.DepartmentId = tblDepartment.DeptId  
group by DeptName, DepartmentId  
  
**Query using the view:**  
Select DeptName, TotalEmployees   
from vWEmployeeCount  
where  TotalEmployees >= 2  
  
**Note:** Views get saved in the database, and can be available to other queries and stored procedures. However, if this view is only used at this one place, it can be easily eliminated using other options, like CTE, Derived Tables, Temp Tables, Table Variable etc.  
  
**Now, let's see, how to achieve the same using, temporary tables**. We are using local temporary tables here.

Select DeptName, DepartmentId, COUNT(\*) as TotalEmployees  
into #TempEmployeeCount  
from tblEmployee  
join tblDepartment  
on tblEmployee.DepartmentId = tblDepartment.DeptId  
group by DeptName, DepartmentId  
  
Select DeptName, TotalEmployees  
From #TempEmployeeCount  
where TotalEmployees >= 2  
  
Drop Table #TempEmployeeCount  
  
**Note:** Temporary tables are stored in TempDB. Local temporary tables are visible only in the current session, and can be shared between nested stored procedure calls. Global temporary tables are visible to other sessions and are destroyed, when the last connection referencing the table is closed.  
  
**Using Table Variable:**  
Declare @tblEmployeeCount table  
(DeptName nvarchar(20),DepartmentId int, TotalEmployees int)  
  
Insert @tblEmployeeCount  
Select DeptName, DepartmentId, COUNT(\*) as TotalEmployees  
from tblEmployee  
join tblDepartment  
on tblEmployee.DepartmentId = tblDepartment.DeptId  
group by DeptName, DepartmentId  
  
Select DeptName, TotalEmployees  
From @tblEmployeeCount  
where  TotalEmployees >= 2  
  
**Note**: Just like TempTables, a table variable is also created in TempDB. The scope of a table variable is the batch, stored procedure, or statement block in which it is declared. They can be passed as parameters between procedures.  
  
**Using Derived Tables**  
Select DeptName, TotalEmployees  
from   
 (  
 Select DeptName, DepartmentId, COUNT(\*) as TotalEmployees  
 from tblEmployee  
 join tblDepartment  
 on tblEmployee.DepartmentId = tblDepartment.DeptId  
 group by DeptName, DepartmentId  
 )   
as EmployeeCount  
where TotalEmployees >= 2  
  
**Note**: Derived tables are available only in the context of the current query.  
  
**Using CTE**  
With EmployeeCount(DeptName, DepartmentId, TotalEmployees)  
as  
(  
 Select DeptName, DepartmentId, COUNT(\*) as TotalEmployees  
 from tblEmployee  
 join tblDepartment  
 on tblEmployee.DepartmentId = tblDepartment.DeptId  
 group by DeptName, DepartmentId  
)  
  
Select DeptName, TotalEmployees  
from EmployeeCount  
where TotalEmployees >= 2  
  
**Note:** A CTE can be thought of as a temporary result set that is defined within the execution scope of a single SELECT, INSERT, UPDATE, DELETE, or CREATE VIEW statement. A CTE is similar to a derived table in that it is not stored as an object and lasts only for the duration of the query.