

Part 51 – Recursive CTEs

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In this session we will learn

- Recursive CTEs & the problems they solve

Prerequisite:

Part 49 – CTE (Common Table Expressions)

Part 50 – Updatable CTE

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Recursive CTE

EmployeeId	Name	ManagerId
1	Tom	2
2	Josh	NULL
3	Mike	2
4	John	3
5	Pam	1
6	Mary	3
7	James	1
8	Sam	5
9	Simon	1

Employee Name	Manager Name
Tom	Josh
Josh	Super Boss
Mike	Josh
John	Mike
Pam	Tom
Mary	Mike
James	Tom
Sam	Pam
Simon	Tom

```
-- A simple self join
Select Employee.Name as [Employee Name] ,
IsNull(Manager.Name, 'Super Boss') as [Manager Name]
from tblEmployee Employee
left join tblEmployee Manager
on Employee.ManagerId = Manager.EmployeeId
```

Joining a table with itself is called as self join

Part 14 – Self Join

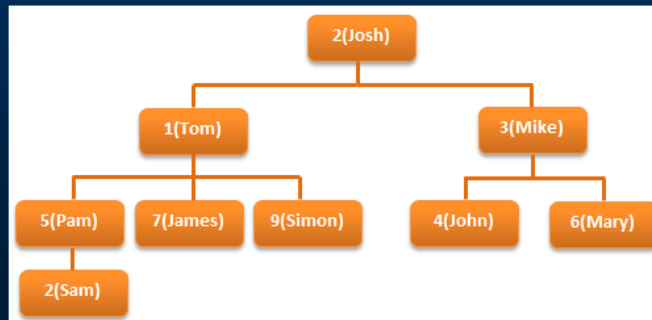
Part 15 – Different ways to replace NULL values

Recursive CTE

Along with Employee and their Manager name, we also want to display their level in the organization

EmployeeId	Name	ManagerId
1	Tom	2
2	Josh	NULL
3	Mike	2
4	John	3
5	Pam	1
6	Mary	3
7	James	1
8	Sam	5
9	Simon	1

Employee	Manager	Level
Josh	Super Boss	1
Tom	Josh	2
Mike	Josh	2
John	Mike	3
Mary	Mike	3
Pam	Tom	3
James	Tom	3
Simon	Tom	3
Sam	Pam	4



Recursive CTE

```
With
  EmployeesCTE (EmployeeId, Name, ManagerId, [Level])
as
(
  Select EmployeeId, Name, ManagerId, 1
  from tblEmployee
  where ManagerId is null

  union all

  Select tblEmployee.EmployeeId, tblEmployee.Name,
  tblEmployee.ManagerId, EmployeesCTE.[Level] + 1
  from tblEmployee
  join EmployeesCTE
  on tblEmployee.ManagerID = EmployeesCTE.EmployeeId
)
Select EmpCTE.Name as Employee, Isnull(MgrCTE.Name, 'Super Boss') as Manager,
EmpCTE.[Level]
from EmployeesCTE EmpCTE
left join EmployeesCTE MgrCTE
on EmpCTE.ManagerId = MgrCTE.EmployeeId
```

Additional Resources

- PRAGIM Home Page:

- www.PragimTech.com

- Resources:

- ASP.NET Interview Questions
 - www.VenkatASPInterview.Blogspot.com
 - C# Interview Questions
 - www.VenkatCSharpInterview.Blogspot.com
 - SQL Server Interview Questions
 - www.venkatsqlinterview.Blogspot.com