

# Common table expressions (CTE's)

- CTE table names are declared with the prefix **cte**
- Used to simplify complex joins and subqueries.
- Use a Common Table Expression for paging instead of Dynamic SQL.
- Always start with a semi-colon before the WITH.
- Chaining CTE's must be limited to 3 instances.
- CTE's must be filtered as soon as possible to limit the number of records stored in memory.
- CTEs can only be used when data is only required for a single use in the procedure.
- CTEs must always be provided named column and not use the \* selector.

```
;WITH cteEmployees
  AS (SELECT
        Name
        , Surname
        , EmployeeNumber
      FROM
        prsEmployees WITH(NOLOCK))
  SELECT
    *
  FROM
    cteEmployees
```

## The use of recursive CTEs

- Always ensure a termination condition is defined.
- For an example view [this site](#)
- e.g.

```
WITH Managers AS
(
  --initialization
  SELECT EmployeeID, LastName, ReportsTo
  FROM Employees
  WHERE ReportsTo IS NULL
```

```
UNION ALL
--recursive execution
SELECT e.employeeID,e.LastName, e.ReportsTo
FROM Employees e INNER JOIN Managers m
ON e.ReportsTo = m.employeeID
)
SELECT * FROM Managers
```

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