

# SQL SERVER 2012 FOR DEVELOPERS

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[www.FaceBook.com/SQLServerGeeks](http://www.FaceBook.com/SQLServerGeeks)

# YOUR SPEAKER

- CTO, eDominator Systems & Peopleware India
- Corporate Trainer/Consultant & Evangelist
- Conducted more than 450+ workshops on SQL Server & BI for top notch IT companies world wide
- Microsoft MVP for SQL Server
- Speaker at TechED India, TechED US & TechED Europe, SQLBits, MCT Summit, Great India Developer Summit
- Technical Reviewer/SME – MSL courses & certifications on SQL Server
- Co-Founder & President – [SQLServerGeeks.com](http://SQLServerGeeks.com)

# INTRODUCING SQL SERVER 2012 TRANSACT-SQL IMPROVEMENTS

- Query Pagination
- OVER Clause Windowing
- Sequences
- Enhanced Function Library
- General T-SQL-Related Enhancements

# QUERY PAGINATION

- Common application requirement to retrieve rows
  - For a given page
  - For a given page length

```
CREATE PROC Production.GetPagedProductsByColor
(
    @PageNumber INT = 1, -- Default to first page
    @RowsPerPage INT = 10 -- Default to 10 rows per page
)
AS BEGIN
    DECLARE @RowsToSkip INT = @RowsPerPage * (@PageNumber - 1);

    SELECT ProductID, Name, Color, Size
    FROM Production.Product
    ORDER BY Color, ProductID ASC
    OFFSET @RowsToSkip ROWS -- New ORDER BY options
    FETCH NEXT @RowsPerPage ROWS ONLY;
END;
```

# OVER CLAUSE WINDOWING

- Some existing queries do not optimize well
- Example: Details of orders and days since previous order of each product

## -- Traditional approach

```
SELECT rs.ProductKey, rs.OrderDateKey, rs.SalesOrderNumber,  
rs.OrderDateKey - (SELECT TOP(1) prev.OrderDateKey  
FROM dbo.FactResellerSales AS prev  
WHERE rs.ProductKey = prev.ProductKey  
AND prev.OrderDateKey <= rs.OrderDateKey  
AND prev.SalesOrderNumber < rs.SalesOrderNumber  
ORDER BY prev.OrderDateKey DESC,  
prev.SalesOrderNumber DESC)  
AS DaysSincePrevOrder  
FROM dbo.FactResellerSales AS rs  
ORDER BY rs.ProductKey, rs.OrderDateKey, rs.SalesOrderNumber;
```

# OVER CLAUSE WINDOWING

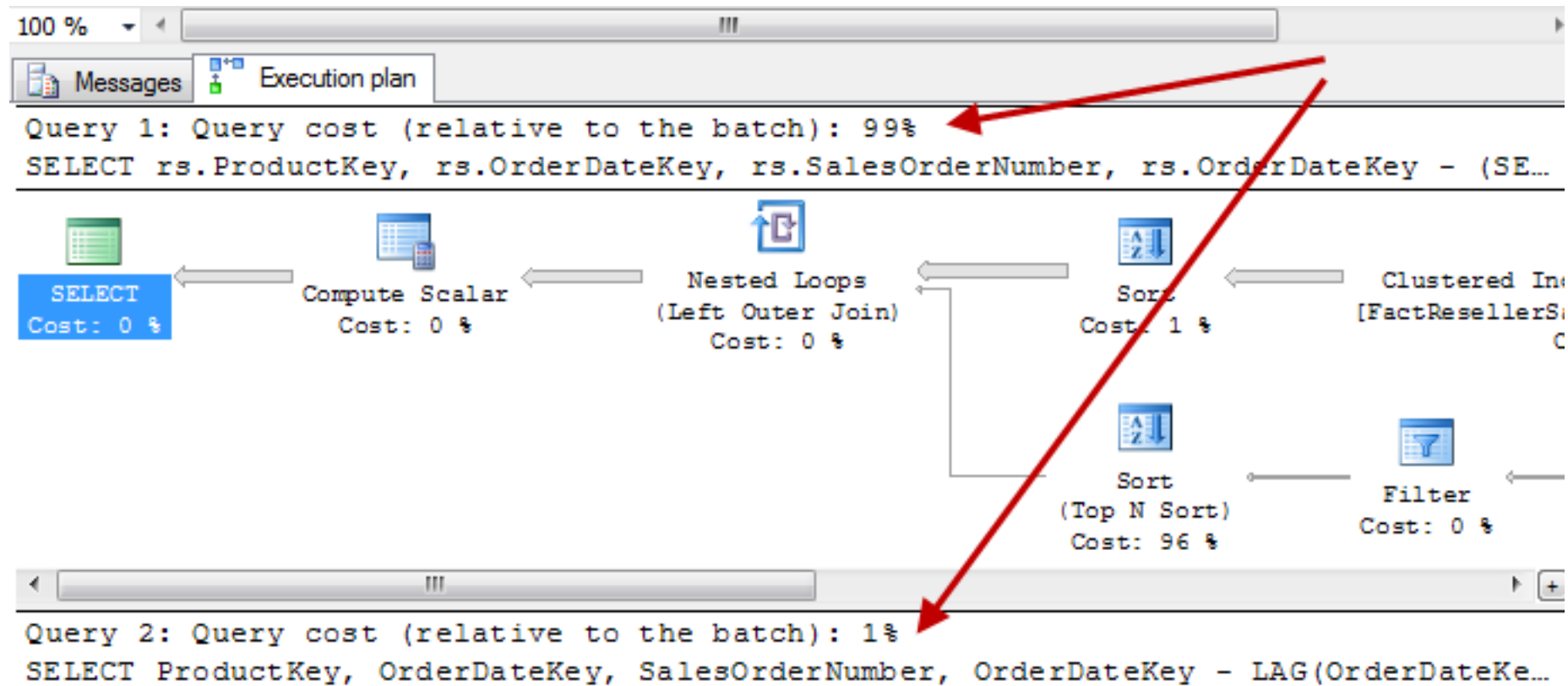
- Some existing queries do not optimize well
- Example: Details of orders and days since previous order of each product

-- windowed approach

```
SELECT ProductKey, OrderDateKey, SalesOrderNumber,  
OrderDateKey - LAG(OrderDateKey)  
OVER (PARTITION BY ProductKey  
ORDER BY OrderDateKey, SalesOrderNumber)  
AS DaysSincePrevOrder  
FROM dbo.FactResellerSales AS rs  
ORDER BY ProductKey, OrderDateKey, SalesOrderNumber;
```

# OVER CLAUSE WINDOWING

- Some existing queries do not optimize well
- Example: Details of orders and days since previous order of each product



# SEQUENCES

- User-defined object
- Not tied to any particular table
- Not restricted to being used in a single table
- Eases migration from other database engines

```
CREATE SEQUENCE Booking.BookingID AS INT  
START WITH 20001  
INCREMENT BY 10;
```

```
CREATE TABLE Booking.FlightBooking  
(FlightBookingID INT PRIMARY KEY CLUSTERED  
DEFAULT (NEXT VALUE FOR Booking.BookingID),  
...)
```



# ENHANCED FUNCTION LIBRARY

- New functions added

Conversion	Date and Time	Logical and String	Analytic
PARSE	DATEFROMPARTS	CHOOSE	CUME_DIST
TRY_PARSE	TIMEFROMPARTS	IIF	PERCENTILE_DIST
TRY_CONVERT	DATETIMEFROMPARTS	CONCAT	PERCENTILE_CONT
	DATETIME2FROMPARTS	FORMAT	PERCENT_RANK
	SMALLDATETIMEFROMPARTS		FIRST_VALUE
	DATETIMEOFFSETFROMPARTS		LAST_VALUE
	EOMONTH		LEAD
			LAG

- LOG function now supports an optional base

# GENERAL T-SQL-RELATED ENHANCEMENTS

- Enhanced UTF-16 Support
  - Support for supplementary character (SC) collations
  - Supported on nchar, nvarchar, nvarchar(max) and sql\_variant
  - Used for characters with codepoint values larger than 0xFFFF
  - Requires two consecutive 16 bit words
  - Example: Japanese\_Bushu\_Kakusu\_100\_CI\_AS\_SC
- THROW statement
  - Can throw user-errors
  - Can rethrow any errors in a CATCH block (including system errors)
- Extended Events supports many new events
  - Mostly relating to memory page allocation

# SUMMARY

- Query Pagination
- OVER Clause Windowing
- Sequences
- Enhanced Function Library
- General T-SQL-Related Enhancements

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Thank you 😊