Cursors and String Functions

Presented by Steve Stedman and Aaron Buma

Welcome

- Welcome to all those joining us remotely.
  - For any questions via Google On Air Broadcasts, we will address most of these at the end of the training.
- Training provided by Emergency Reporting
  - http://EmergencyReporting.com
- Slides and sample code are available at:
  - http://SteveStedman.com

Welcome Viewers From

- Bellingham, WA

Live Broadcast

- Using Google On Air Broadcasts
  - There is about a 40 to 50 second delay from live to what you see.
  - We are still learning how to properly use Google On Air Broadcasts. Please be patient.
  - Session will be available on my YouTube Channel about an hour after the presentation ends.
    - http://SteveStedman.com/YouTube

Questions

- We will have time for questions at the end of the session.
- Q&A available via Google On Air Hangout panel. Click the 3x3 grid icon near the top right, then select Q&A to see what people are asking, or to ask your own question.
- When you ask a question, it shows up for us about 40 to 50 seconds delayed.

Agenda

- Cursors
- String Functions

Cursors

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CURSORs

- A method for iterating over a result set in TSQL
- One row at a time

```sql
DECLARE @BusinessCursor as CURSOR;
SET @BusinessCursor = CURSOR FOR
SELECT TOP 50 BusinessEntityID, Name FROM Sales.Store;

OPEN @BusinessCursor;
FETCH NEXT FROM @BusinessCursor INTO @BusinessEntityID, @BusinessName;

WHILE @@FETCH_STATUS = 0
BEGIN
    PRINT cast(@BusinessEntityID as VARCHAR (50)) + ' ' + @BusinessName;
    FETCH NEXT FROM @BusinessCursor INTO @BusinessEntityID,
@BusinessName;
END

CLOSE @BusinessCursor;
DEALLOCATE @BusinessCursor;
```

sp_describe_cursor

- Get detailed information about your cursor.

FORWARD_ONLY Cursor

- From Books Online:

  FORWARD_ONLY Specifies that the cursor can only be scrolled from the first to the last row. FETCH NEXT is the only supported fetch option.

- Faster than other options

FAST_FORWARD

- Usually the fastest option

SCROLL Cursor

- From Books Online:

  Specifies that all fetch options (FIRST, LAST, PRIOR, NEXT, RELATIVE, ABSOLUTE) are available.

Performance Issues

- Cursors are generally not as performant as a set logic way of approaching a solution.
- There is almost always a better way of doing things than using a cursor.
- Nested cursors become an even bigger performance and blocking issue.

RBAR – Row by Agonizing Row

- Take a system (SQL Server) that is designed to processes massive sets of data with JOINs and other logic.
- Throw out all those set based performance benefits, and look at one row at a time in a result set.

Time and Place

- There is a time and place for CURSORs, it is just that those times and places are few and far between.

- Example: Calculating Prime Numbers. Worked great with set logic for about the first 100,000,000 prime numbers, but became very slow after that. I use a cursor to process batches at a time. Currently at 753,000,000 prime numbers using a cursor.

Demo

CURSORS

String Functions

Presented by Aaron Buma

String Functions

- LEN() – Returns length: SELECT LEN(columnA) AS …

```
SELECT i.Description,
       LEN(i.Description) AS lengthOfDescription
  FROM dbo.Inventory AS i
```

String Functions

- Sections of string:
  - LEFT(), RIGHT() and SUBSTRING()
    - LEFT/RIGHT (columnA, DistanceFromEdge) AS …

```
LEFT(i.Description, 4) AS leftSide
```

```
RIGHT(i.Description, 5) AS rightSide
```

    - SUBSTRING (columnA, StartPosition, Distance) AS …
      - StartPosition can be any number, 0 or 1 is the start character

```
SUBSTRING(i.Description, 5, 5) AS substringSection
```

String Functions

- Changing Strings
  - LTRIM, RTRIM: Removes leading empty spaces from a side

```
LTRIM(i.ItemSKU)
```

```
RTRIM(i.ItemSKU)
```

  - UPPER, LOWER: Forces upper or lower case

```
UPPER(i.Description)
```

```
LOWER(i.ItemSKU)
```

  - REPLACE: Replaces an defined set of characters with another

```
REPLACE(i.ItemSKU, 'SB', 'SL')
```

String Functions – 2012 Intro's

- CONCAT
  - Makes field concatenation cleaner and easier
- FORMAT
  - A simplified way to format
    - Dates (localization too!)
    - Currency
    - Time
    - Numbers (with custom formatting)

Bonus – Table and Field Metadata

- SERVERPROPERTY()
  - Usable for server info
- OBJECTPROPERTY()
  - Easy way to get object properties
  - ISMSSHIPPED – Did it come with SQL server?

Demo

String Functions

Any Questions?

- Cursors
- String Functions

For More Information

- Visit http://EmergencyReporting.com to find out more about Emergency Reporting.
- Aaron on the web
  - http://AaronBuma.com
  - Twitter: @AaronDBuma
- Steve on the web
  - http://SteveStedman.com
  - twitter: @SqlEmt

Tune in next week