SQL Server Tutorial

Part 120 - Reverse PIVOT table in SQL Server

Venkat
PRAGIM Technologies
kudvenkat@gmail.com
http://csharp-video-tutorials.blogspot.com
PragimTech.com | facebook.com/pragimtech | twitter.com/kudvenkat | 91 99456 99393

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In this session we will learn

- Is it always possible to reverse what PIVOT operator has done using UNPIVOT operator

Link to Dot Net Basics, ASP.NET, C#, ADO.NET and SQL Server video series
http://www.youtube.com/user/kudvenkat/playlists

Suggested Videos
Part 117 - Difference between ROWS and RANGE
Part 118 - LAST_VALUE function in SQL Server
Part 119 - UNPIVOT in SQL Server

Reverse PIVOT table in SQL Server

Is it always possible to reverse what PIVOT operator has done using UNPIVOT operator
No, not always. If the PIVOT operator has not aggregated the data, you can get your
original data back using the UNPIVOT operator but not if the data is aggregated.

PIVOT operator turns ROWS into COLUMNS

SalesAgent	Country	SalesAmount
David	India	960
David	US	520
John	India	970
John	US	540

```sql
SELECT SalesAgent, India, US
FROM tblProductSales
PIVOT
(
    SUM(SalesAmount)
    FOR Country IN (India, US)
) AS PivotTable
```

SalesAgent	India	US
David	960	520
John	970	540

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Reverse PIVOT table in SQL Server

UNPIVOT operator reverses what PIVOT operator has done (turn COLUMNS into ROWS)

SalesAgent	India	US
David	960	520
John	970	540

```sql
SELECT SalesAgent, Country, SalesAmount
FROM
(SELECT SalesAgent, India, US
FROM tblProductSales
PIVOT
(
    SUM(SalesAmount)
    FOR Country IN (India, US)
) AS PivotTable) P
UNPIVOT
(
    SalesAmount
    FOR Country IN (India, US)
) AS UnpivotTable
```

We are able to get the original data back, because the SUM aggregate function that we used with the PIVOT operator did not perform any aggregation

SalesAgent	Country	SalesAmount
David	India	960
David	US	520
John	India	970
John	US	540

Reverse PIVOT table in SQL Server

Notice that for SalesAgent - David and Country - India we have 2 rows. These rows are aggregated in the result-set.

SalesAgent	Country	SalesAmount
David	India	960
David	US	520
John	India	970
John	US	540
David	India	100

```
SELECT SalesAgent, India, US
FROM tblProductSales
PIVOT
(
    SUM(SalesAmount)
    FOR Country IN (India, US)
) AS PivotTable
```

SalesAgent	India	US
David	1060	520
John	970	540

Reverse PIVOT table in SQL Server

UNPIVOT operator reverses what PIVOT operator has done

SalesAgent	India	US
David	1060	520
John	970	540

```
SELECT SalesAgent, Country, SalesAmount
FROM
(SELECT SalesAgent, India, US
FROM tblProductSales
PIVOT
(
    SUM(SalesAmount)
    FOR Country IN (India, US)
) AS PivotTable) P
UNPIVOT
(
    SalesAmount
    FOR Country IN (India, US)
) AS UnpivotTable
```
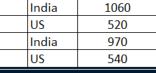
We are unable to get the original data back, because the SUM aggregate function that we used with the PIVOT operator has aggregated the data, and there is no way for SQL Server to know how to undo the aggregation

SalesAgent	Country	SalesAmount
David	India	1060
David	US	520
John	India	970
John	US	540

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Additional Resources

PRAGIM Home Page:

www.PragimTech.com

Resources:

C#, ADO.NET, ASP.NET, SQL Server & MVC youtube Playlists
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