

# SQL TIPS AND TRICKS




PART 28

## CROSS JOIN

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Example--



prod

| Result Grid   |    |  |  Filter Rows |
|---|----|---|---|
|   | ID | name  |   |
|  | 1  | A   |   |
|   | 2  | B   |   |
|   | 3  | C   |   |
|   | 4  | D   |   |
|   | 5  | E   |   |

colors


| Result Grid |          | Filter Rows |
|-------------|----------|-------------|
|             | color_ID | color       |
| ▶           | 1        | Blue        |
|             | 2        | Green       |
|             | 3        | Orange      |


sizes

| Result Grid   |         |  Filter Rows |
|---|---------|---|
|   | size_ID | size  |
|  | 1       | M   |
|   | 2       | L   |
|   | 3       | XL  |

transactn

Result Grid

 Filter Rows:

Export: 

|   | order_ID | prod_name | color  | size | amount |
|---|----------|-----------|--------|------|--------|
| ▶ | 1        | A         | Blue   | L    | 300    |
|   | 2        | B         | Blue   | XL   | 150    |
|   | 3        | B         | Green  | L    | 250    |
|   | 4        | C         | Blue   | L    | 250    |
|   | 5        | E         | Green  | L    | 270    |
|   | 6        | D         | Orange | L    | 300    |
|   | 7        | D         | Green  | M    | 250    |

## Normal Cross Join

```
9 • SELECT p.*, c.*  
10 FROM prod p, colors c
```

Result Grid   Filter Rows:

|   | ID | name | color_ID | color  |
|---|----|------|----------|--------|
| ▶ | 1  | A    | 3        | Orange |
|   | 1  | A    | 2        | Green  |
|   | 1  | A    | 1        | Blue   |
|   | 2  | B    | 3        | Orange |
|   | 2  | B    | 2        | Green  |
|   | 2  | B    | 1        | Blue   |
|   | 3  | C    | 3        | Orange |
|   | 3  | C    | 2        | Green  |
|   | 3  | C    | 1        | Blue   |
|   | 4  | D    | 3        | Orange |
|   | 4  | D    | 2        | Green  |
|   | 4  | D    | 1        | Blue   |
|   | 5  | E    | 3        | Orange |
|   | 5  | E    | 2        | Green  |
|   | 5  | E    | 1        | Blue   |

USE CASE 1– construct a master list of all product, color, and size combinations and joins it with actual sales data to include combinations with no sales, showing `NULL` or `0` for those.

```
30 • WITH master_data AS (  
31     SELECT p.name, c.color, s.size  
32     FROM prod p, colors c, sizes s  
33 ),  
34 sales AS(  
35     SELECT prod_name, color, size, SUM(amount) AS totalamount  
36     FROM transactn t  
37     GROUP BY prod_name, color, size  
38 )  
39 SELECT md.name, md.color, md.size,  
40     IFNULL(s.totalamount, 0) AS totalamount  
41 FROM master_data md  
42 LEFT JOIN sales s  
43 ON md.name = s.prod_name AND md.color = s.color AND md.size = s.size  
44 ORDER BY totalamount;
```

|   | name | color  | size | totalamount |
|---|------|--------|------|-------------|
| ▶ | A    | Blue   | XL   | 0           |
|   | A    | Green  | XL   | 0           |
|   | A    | Orange | XL   | 0           |
|   | E    | Orange | M    | 0           |
|   | A    | Green  | L    | 0           |
|   | A    | Orange | L    | 0           |
|   | A    | Blue   | M    | 0           |
|   | A    | Green  | M    | 0           |
|   | A    | Orange | M    | 0           |
|   | E    | Orange | L    | 0           |
|   | B    | Green  | XL   | 0           |
|   | B    | Orange | XL   | 0           |
|   | B    | Blue   | L    | 0           |
|   | E    | Blue   | M    | 0           |
|   | B    | Orange | L    | 0           |
|   | B    | Blue   | M    | 0           |
|   | B    | Green  | M    | 0           |
|   | B    | Orange | M    | 0           |
|   | C    | Blue   | XL   | 0           |
|   | C    | Green  | XL   | 0           |
|   | C    | Orange | XL   | 0           |
|   | E    | Green  | M    | 0           |

|  | name | color  | size | totalamount |
|--|------|--------|------|-------------|
|  | C    | Orange | L    | 0           |
|  | C    | Blue   | M    | 0           |
|  | C    | Green  | M    | 0           |
|  | C    | Orange | M    | 0           |
|  | D    | Blue   | XL   | 0           |
|  | D    | Green  | XL   | 0           |
|  | D    | Orange | XL   | 0           |
|  | D    | Blue   | L    | 0           |
|  | D    | Green  | L    | 0           |
|  | D    | Blue   | M    | 0           |
|  | E    | Blue   | L    | 0           |
|  | D    | Orange | M    | 0           |
|  | E    | Blue   | XL   | 0           |
|  | E    | Green  | XL   | 0           |
|  | E    | Orange | XL   | 0           |
|  | B    | Blue   | XL   | 150         |
|  | B    | Green  | L    | 250         |
|  | C    | Blue   | L    | 250         |
|  | D    | Green  | M    | 250         |
|  | E    | Green  | L    | 270         |
|  | A    | Blue   | L    | 300         |
|  | D    | Orange | L    | 300         |

USE CASE 2-- Generate a large dataset by cross joining two tables and assigning row numbers to the resulting rows, which is useful for performance testing purposes.

```
48 • SELECT ROW_NUMBER() OVER(ORDER BY t.order_ID) as order_id,  
49      t.prod_name, t.color, t.size, t.amount  
50 FROM transactn t , stock s;
```

Output



Action Output



| #   | Time     | Action   | Message             |
|-----|----------|--|---------------------|
| ✓ 1 | 20:53:10 | SELECT ROW_NUMBER() OVER(ORDER BY t.order_ID) as order_id, t.prod_name, t.color, t.... | 133 row(s) returned |



|   | order_id | prod_name | color | size | amount |
|---|----------|-----------|-------|------|--------|
| ▶ | 1        | A         | Blue  | L    | 300    |
|   | 2        | A         | Blue  | L    | 300    |
|   | 3        | A         | Blue  | L    | 300    |
|   | 4        | A         | Blue  | L    | 300    |
|   | 5        | A         | Blue  | L    | 300    |
|   | 6        | A         | Blue  | L    | 300    |
|   | 7        | A         | Blue  | L    | 300    |
|   | 8        | A         | Blue  | L    | 300    |
|   | 9        | A         | Blue  | L    | 300    |
|   | 10       | A         | Blue  | L    | 300    |
|   | 11       | A         | Blue  | L    | 300    |
|   | 12       | A         | Blue  | L    | 300    |
|   | 13       | A         | Blue  | L    | 300    |
|   | 14       | A         | Blue  | L    | 300    |
|   | 15       | A         | Blue  | L    | 300    |
|   | 16       | A         | Blue  | L    | 300    |
|   | 17       | A         | Blue  | L    | 300    |
|   | 18       | A         | Blue  | L    | 300    |
|   | 19       | A         | Blue  | L    | 300    |
|   | 20       | B         | Blue  | XL   | 150    |
|   | 21       | B         | Blue  | XL   | 150    |
|   | 22       | B         | Blue  | XL   | 150    |

|  | order_id | prod_name | color  | size | amount |
|--|----------|-----------|--------|------|--------|
|  | 112      | D         | Orange | L    | 300    |
|  | 113      | D         | Orange | L    | 300    |
|  | 114      | D         | Orange | L    | 300    |
|  | 115      | D         | Green  | M    | 250    |
|  | 116      | D         | Green  | M    | 250    |
|  | 117      | D         | Green  | M    | 250    |
|  | 118      | D         | Green  | M    | 250    |
|  | 119      | D         | Green  | M    | 250    |
|  | 120      | D         | Green  | M    | 250    |
|  | 121      | D         | Green  | M    | 250    |
|  | 122      | D         | Green  | M    | 250    |
|  | 123      | D         | Green  | M    | 250    |
|  | 124      | D         | Green  | M    | 250    |
|  | 125      | D         | Green  | M    | 250    |
|  | 126      | D         | Green  | M    | 250    |
|  | 127      | D         | Green  | M    | 250    |
|  | 128      | D         | Green  | M    | 250    |
|  | 129      | D         | Green  | M    | 250    |
|  | 130      | D         | Green  | M    | 250    |
|  | 131      | D         | Green  | M    | 250    |
|  | 132      | D         | Green  | M    | 250    |
|  | 133      | D         | Green  | M    | 250    |



# THANK YOU

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