

A modern conference room with large windows and a long table. The room is empty, with several office chairs arranged around the table. The view outside the windows shows a cityscape. The text "WHERE vs HAVING" is overlaid in the center.

# WHERE vs HAVING

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WHERE

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- WHERE

allows us to set conditions that refer to subsets of *individual* rows

# WHERE vs HAVING

## ● WHERE

allows us to set conditions that refer to subsets of *individual* rows



applied *before* re-organizing the output into groups

# WHERE vs HAVING

1	9/3/2016	1	A_1
2	12/2/2016	2	C_1
3	4/15/2017	3	D_1
4	5/24/2017	1	B_2
5	5/25/2017	4	B_2
6	6/6/2017	2	B_1
7	6/10/2017	4	A_2
8	6/10/2017	3	C_1
9	7/20/2017	1	A_1
10	8/11/2017	2	B_1

# WHERE vs HAVING

WHERE



1	9/3/2016	1	A_1
2	12/2/2016	2	C_1
3	4/15/2017	3	D_1
4	5/24/2017	1	B_2
5	5/25/2017	4	B_2
6	6/6/2017	2	B_1
7	6/10/2017	4	A_2
8	6/10/2017	3	C_1
9	7/20/2017	1	A_1
10	8/11/2017	2	B_1

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9	7/20/2017	1	A_1
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re-organizing the  
output into groups  
(GROUP BY)

# WHERE vs HAVING

WHERE



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3	4/15/2017	3	D_1
4	5/24/2017	1	B_2
6	6/6/2017	2	B_1
8	6/10/2017	3	C_1
9	7/20/2017	1	A_1
10	8/11/2017	2	B_1

re-organizing the  
output into groups  
(GROUP BY)



the output can be further improved, or *filtered*



# WHERE vs HAVING

WHERE

1	9/3/2016	1	A_1
2	12/2/2016	2	C_1
3	4/15/2017	3	D_1
4	5/24/2017	1	B_2
5	5/25/2017	4	B_2
6	6/6/2017	2	B_1
7	6/10/2017	4	A_2
8	6/10/2017	3	C_1
9	7/20/2017	1	A_1
10	8/11/2017	2	B_1


HAVING

1	9/3/2016	1	A_1
2	12/2/2016	2	C_1
3	4/15/2017	3	D_1
4	5/24/2017	1	B_2
6	6/6/2017	2	B_1
8	6/10/2017	3	C_1
9	7/20/2017	1	A_1
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re-organizing the  
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# WHERE vs HAVING


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3	4/15/2017	3	D_1
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7	6/10/2017	4	A_2
8	6/10/2017	3	C_1
9	7/20/2017	1	A_1
10	8/11/2017	2	B_1

re-organizing the  
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HAVING



1	9/3/2016	1	A_1
3	4/15/2017	3	D_1
4	5/24/2017	1	B_2
6	6/6/2017	2	B_1
10	8/11/2017	2	B_1

# WHERE vs HAVING

WHERE

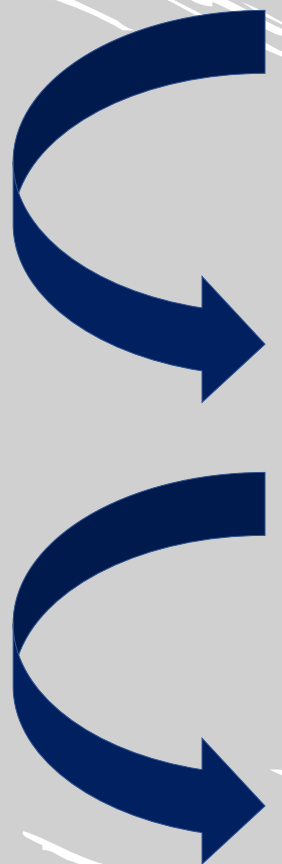


Diagram illustrating the flow of data from the initial table to the WHERE and HAVING filtered results. Two large blue curved arrows point from the initial table to the WHERE and HAVING tables respectively.

1	9/3/2016	1	A_1
2	12/2/2016	2	C_1
3	4/15/2017	3	D_1
4	5/24/2017	1	B_2
5	5/25/2017	4	B_2
6	6/6/2017	2	B_1
7	6/10/2017	4	A_2
8	6/10/2017	3	C_1
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HAVING

1	9/3/2016	1	A_1
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4	5/24/2017	1	B_2
6	6/6/2017	2	B_1
8	6/10/2017	3	C_1
9	7/20/2017	1	A_1
10	8/11/2017	2	B_1

re-organizing the  
output into groups  
(GROUP BY)

ORDER BY...

1	9/3/2016	1	A_1
3	4/15/2017	3	D_1
4	5/24/2017	1	B_2
6	6/6/2017	2	B_1
10	8/11/2017	2	B_1

# WHERE vs HAVING

## ● HAVING

- you *cannot* have both an aggregated and a non-aggregated condition in the HAVING clause

# WHERE vs HAVING

*Aggregate functions – GROUP BY and HAVING*

# WHERE vs HAVING

*Aggregate functions* - GROUP BY and HAVING

*General conditions* - WHERE

# WHERE vs HAVING



SQL

```
SELECT column_name(s)
FROM table_name
WHERE conditions

GROUP BY column_name(s)
HAVING conditions

ORDER BY column_name(s);
```