

Slide 1: Grouping Data with SQL

Grouping Data with SQL

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Slide 2: Learning Objectives

Learning Objectives

Perform some additional aggregations using the GROUP BY and HAVING clauses

Discuss how NULLs are or aren't affected by the GROUP BY and HAVING clauses

Use the GROUP BY and ORDER BY clauses together to better sort your data

Slide 3: Grouping Data

Grouping Data

Learn how to group data in order to summarize subsets of data

New clauses GROUP BY; HAVING

How to aggregate on a particular value

Slide 4: Grouping Example

Grouping Example

Counts customers after group on region rather than counting the whole table

```
SELECT  
  Region  
  ,COUNT(CustomerID) AS total_customers  
FROM Customers  
GROUP BY Region;
```

Slide 5: Additional GROUP BY Information

Additional GROUP BY Information

GROUP BY clauses can contain multiple columns

Every column in your SELECT statement must be present in a GROUP BY clause, except for aggregated calculations

NULLs will be grouped together if your GROUP BY column contains NULLs

Slide 6: HAVING Clause – Filtering for Groups

HAVING Clause – Filtering for Groups

WHERE does not work for groups

WHERE filters on rows

Instead use HAVING clause to filter for groups

Slide 7: Grouping Example

Grouping Example

```
SELECT  
  CustomerID  
  ,COUNT (*) AS orders  
FROM Orders  
GROUP BY CustomerID  
HAVING COUNT (*) >=2;
```

Slide 8: WHERE vs. HAVING

WHERE vs. HAVING

WHERE filters before data is grouped

HAVING filters after data is grouped

Rows eliminated by the WHERE clause will not be included in the group

Slide 9: ORDER BY with GROUP BY

ORDER BY with GROUP BY

ORDER BY sorts data

GROUP BY does not sort data

```
SELECT SupplierID
, COUNT(*) AS Num_Prod
FROM Products
WHERE UnitPrice >= 4
GROUP BY SupplierID
HAVING COUNT (*) >=2;
```