

Aggregation facilities in SQL

Spoken Tutorial Project

<http://spoken-tutorial.org>

National Mission on Education through ICT

<http://sakshat.ac.in>

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Learning Objectives

In this tutorial we will learn about



Learning Objectives

In this tutorial we will learn about

- **Group by**



Learning Objectives

In this tutorial we will learn about

- Group by
- Having



Learning Objectives

In this tutorial we will learn about

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- Having
- Order by clause



System Requirements



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- **Ubuntu Linux 14.04 OS**



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- **PostgreSQL 9.3.x**



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- **pgAdmin 1.18**



Pre-requisites



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 - **SELECT** statement and



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 - **Aggregate functions**



Pre-requisites

- To follow this tutorial, you should have basic understanding of
 - **SELECT** statement and
 - **Aggregate functions**
- For more details, refer to the **RDBMS-PostgreSQL** series on <http://www.spoken-tutorial.org>



Aggregate Functions



Aggregate Functions

- **Aggregate functions perform calculations on a set of values and return a single value**



Aggregate Functions

- Aggregate functions perform calculations on a set of values and return a single value
- Aggregate functions are mostly used with the **Group by** clause of the **SELECT** statement



GROUP BY



GROUP BY

- **Group by** clause is used to collect identical data in groups



GROUP BY

- **Group by** clause is used to collect identical data in groups
- It returns one record for each group



GROUP BY

- **Group by** clause is used to collect identical data in groups
- It returns one record for each group
- **Group by** can be done with one or more columns



Syntax: GROUP BY



Syntax: GROUP BY

```
SELECT  
column1, aggregate-function(column2)  
FROM table-name  
[WHERE condition]  
GROUP BY column1, column2
```



HAVING



HAVING

- **HAVING** clause is used to retrieve rows for the specified condition from a grouped result



HAVING

- **HAVING** clause is used to retrieve rows for the specified condition from a grouped result
- Use the **WHERE** clause exclude rows that you don't want to group



HAVING

- **HAVING** clause is used to retrieve rows for the specified condition from a grouped result
- Use the **WHERE** clause exclude rows that you don't want to group
- Use the **HAVING** clause filter rows after they have been grouped



Syntax: HAVING



Syntax: HAVING

```
SELECT  
column1, aggregate-function(column2)  
FROM table-name  
[WHERE condition]  
GROUP BY column1, column2  
HAVING condition
```



ORDER BY



ORDER BY

- Used to sort the records in ascending or descending order



ORDER BY

- Used to sort the records in ascending or descending order
- This clause is always used at the end of the **SELECT** statement



Syntax: ORDER BY



Syntax: ORDER BY

```
SELECT column-list  
FROM table-name  
[WHERE condition]  
ORDER BY column1, column2,..  
[ASC|DESC];
```



Summary

In this tutorial we have learnt about the clauses

- **Group By**
- **Having**
- **Order By**



Assignment

- 1 Write a **SELECT** statement to display the number of students with the same CGPA

Hint: Group the rows by CGPA column



About the Spoken Tutorial Project

- Watch the video available at http://spoken-tutorial.org/What_is_a_Spoken_Tutorial
- It summarises the Spoken Tutorial project
- If you do not have good bandwidth, you can download and watch it



Spoken Tutorial Workshops

The Spoken Tutorial Project Team

- Conducts workshops using spoken tutorials
- Gives certificates on passing online test
- For more details, please write to contact@spoken-tutorial.org



Forum for specific questions

- Do you have questions in THIS Spoken Tutorial?
- Please visit <http://forums.spoken-tutorial.org>
- Choose the minute and second where you have the question
- Explain your question briefly
- Someone from our team will answer them



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- More information on this Mission is available at

<http://spoken-tutorial.org/NMEICT-Intro>

