

# Aggregation facilities in SQL

Spoken Tutorial Project

<http://spoken-tutorial.org>

National Mission on Education through ICT

<http://sakshat.ac.in>

Nirmala Venkat

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# Learning Objectives

**In this tutorial we will learn about**



# Learning Objectives

In this tutorial we will learn about

- **Group by**



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- **Having**



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- **Group by**
- **Having**
- **Order by clause**



# System Requirements



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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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# 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**



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- **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



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



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- It returns one record for each group



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- **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



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



# HAVING



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



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- **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](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](mailto: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



# Acknowledgements

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- It is supported by the National Mission on Education through ICT, MHRD, Government of India
- More information on this Mission is available at

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

