Overview of RDBMS - PostgreSQL

Spoken Tutorial Project
http://spoken-tutorial.org
National Mission on Education through ICT
http://sakshat.ac.in

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2 Nov 2017

Learning Objectives

We will learn about

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- **RDBMS**

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- **RDBMS**
- **Features of PostgreSQL**

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- **RDBMS**
- **Features of PostgreSQL**
- **Content available in various tutorials under this series**

System Requirements

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- **Ubuntu Linux 14.04 OS**

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- **PostgreSQL 9.3.x**

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- **PostgreSQL 9.3.x**
- **pgAdmin 1.18**

Pre-requisites

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- **Good understanding of basic computer concepts**

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- **Working knowledge of any programming language**

RDBMS

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- RDBMS stands for **Relational Database Management System**

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- RDBMS is a program that helps to create, updata and manage database

RDBMS - Example

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- **MS SQL Server**

RDBMS - Example

- **MS SQL Server**
- **IBM DB2**

RDBMS - Example

- **MS SQL Server**
- **IBM DB2**
- **ORACLE**

RDBMS - Example

- **MS SQL Server**
- **IBM DB2**
- **ORACLE**
- **My-SQL**

RDBMS - Example

- **MS SQL Server**
- **IBM DB2**
- **ORACLE**
- **My-SQL**
- **Microsoft Access**

Features of PostgreSQL

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- **It is the most advanced open source database management system**

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- **Run on various platforms such as Linux, windows and Mac OS**

Features of PostgreSQL

- It is the most advanced open source database management system
- Run on various platforms such as Linux, windows and Mac OS
- Requires very minimum maintenance because of its stability

Features of PostgreSQL

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- **We can define our own data types, index types and develop a custom plugin to meet the requirement**

Features of PostgreSQL

- **We can define our own data types, index types and develop a custom plugin to meet the requirement**
- **An active community support is available to help for the issues when working with PostgreSQL**

Who can use PostgreSQL?

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- **Programmers, Project managers, System Administrators**

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- **Programmers, Project managers, System Administrators**
- **Any software professionals who is working to build products, websites, tools etc.,**

Installation of PostgreSQL

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- **Installation of PostgreSQL in Ubuntu Linux and Windows**

Installation of PostgreSQL

- **Installation of PostgreSQL in Ubuntu Linux and Windows**
- **Installation of pgAdmin**

Installation of PostgreSQL

- **Installation of PostgreSQL in Ubuntu Linux and Windows**
- **Installation of pgAdmin**
- **Setting the password**

Installation of PostgreSQL

- **Installation of PostgreSQL in Ubuntu Linux and Windows**
- **Installation of pgAdmin**
- **Setting the password**
- **How to connect and disconnect from the server**

Create database using PgAdmin

Create database using PgAdmin

- **Connect to the server**

Create database using PgAdmin

- **Connect to the server**
- **Create a new database**

Create database using PgAdmin

- **Connect to the server**
- **Create a new database**
- **Create a new table**

Create database using PgAdmin

- **Connect to the server**
- **Create a new database**
- **Create a new table**
- **Add columns to the table**

Create database using PgAdmin

- **Connect to the server**
- **Create a new database**
- **Create a new table**
- **Add columns to the table**
- **Common data types used in PostgreSQL**

Table with Primary keys

Table with Primary keys

- **Insert data**

Table with Primary keys

- **Insert data**
- **Retrieve data**

Table with Primary keys

- **Insert data**
- **Retrieve data**
- **Data Redundancy**

Table with Primary keys

- **Insert data**
- **Retrieve data**
- **Data Redundancy**
- **Importance of primary keys**

Table with Primary keys

- Insert data
- Retrieve data
- Data Redundancy
- Importance of primary keys
- Create a table with primary keys

Select statement

Select statement

- **Basic Select statement**

Select statement

- **Basic Select statement**
- **Select with WHERE clause**

Select statement

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- **Select with WHERE clause**
- **Select with relational operators**

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- **Select with logical operators**

Select statement

- **Basic Select statement**
- **Select with WHERE clause**
- **Select with relational operators**
- **Select with logical operators**
- **Alias for column names**

Select with Aggregate functions

Select with Aggregate functions

More clauses that can be used with the select statement, such as-

Select with Aggregate functions

More clauses that can be used with the select statement, such as-

- **Distinct**

Select with Aggregate functions

More clauses that can be used with the select statement, such as-

- **Distinct**
- **Between**

Select with Aggregate functions

More clauses that can be used with the select statement, such as-

- **Distinct**
- **Between**
- **Like**

Select with Aggregate functions

More clauses that can be used with the select statement, such as-

- **Distinct**
- **Between**
- **Like**
- **In**

Select with Aggregate functions

More clauses that can be used with the select statement, such as-

- **Distinct**
- **Between**
- **Like**
- **In**
- **Is Null**

Select with Aggregate functions

Select with Aggregate functions

PostgreSQL built-in functions otherwise called as Aggregate functions

Select with Aggregate functions

PostgreSQL built-in functions otherwise called as Aggregate functions

- **Count**

Select with Aggregate functions

PostgreSQL built-in functions otherwise called as Aggregate functions

- **Count**
- **Sum**

Select with Aggregate functions

PostgreSQL built-in functions otherwise called as Aggregate functions

- **Count**
- **Sum**
- **Max**

Select with Aggregate functions

PostgreSQL built-in functions otherwise called as Aggregate functions

- **Count**
- **Sum**
- **Max**
- **Min**

Select with Aggregate functions

PostgreSQL built-in functions otherwise called as Aggregate functions

- **Count**
- **Sum**
- **Max**
- **Min**
- **Avg**

Foreign Key constraint

Foreign Key constraint

- **Importance of using foreign keys**

Foreign Key constraint

- **Importance of using foreign keys**
- **Example to demonstrate the parent and child table relationship**

Foreign Key constraint

- Importance of using foreign keys
- Example to demonstrate the parent and child table relationship
- Alter table command to modify the existing table structure

Foreign Key constraint

- Importance of using foreign keys
- Example to demonstrate the parent and child table relationship
- Alter table command to modify the existing table structure
- Different types of constraints

Aggregation facilities in SQL

Aggregation facilities in SQL

- **Group by**

Aggregation facilities in SQL

- **Group by**
- **Having**

Aggregation facilities in SQL

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

Updating Data

Updating Data

- **Update statement**

Updating Data

- **Update statement**
- **Delete statement**

Summary

In this tutorial we learnt about

- Overview of the RDBMS - PostgreSQL
- Refer to our website http://spoken-tutorial.org for the detailed tutorials on each topic mentioned

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

Forum for specific questions

- **The Spoken Tutorial forum is for specific questions on this tutorial**
- **Please do not post unrelated and general questions on them**
- **This will help reduce the clutter**
- **With less clutter, we can use these discussion as intructional material**

Acknowledgements

- Spoken Tutorial Project is a part of the Talk to a Teacher project
- 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