

Creating a database

CREATING POSTGRESQL DATABASES



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Course topics

- Commands for building databases
- PostgreSQL data types
- Database normalization
- Database access management

The PostgreSQL Database Management System

- object-relational database management system
- system components are objects
- database is top-level object

The CREATE DATABASE command

```
CREATE DATABASE db_name;
```

```
CREATE DATABASE my_db;
```

```
CREATE DATABASE _my_db;
```

```
CREATE DATABASE 321_db; -- Invalid
```

Scenarios for new database creation

```
CREATE DATABASE ncaa_bb;
```

```
CREATE DATABASE auto_depot;
```

```
CREATE DATABASE pod;
```

Let's practice!

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Creating tables

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The database table

- Variable number of rows
- Fixed number of columns (structure can be altered)
- Columns have specific data type
- Each row is a record

The CREATE TABLE command

```
CREATE TABLE table_name (  
    column1_name column1_datatype [col1_constraints],  
    column2_name column2_datatype [col2_constraints],  
    ...  
    columnN_name columnN_datatype [colN_constraints]  
);
```

Name Restrictions

- maximum length of 31 characters
- must begin with letter or underscore ("_")

Example table 1

```
CREATE TABLE school (  
    id serial PRIMARY KEY,  
    name TEXT NOT NULL,  
    mascot_name TEXT  
);
```

Example table 2

```
CREATE TABLE topic (  
    id SERIAL PRIMARY KEY,  
    description TEXT NOT NULL  
);
```

Table organization

- Which fields should I use?
- How many tables should I add?
- Which data types are best to use for the fields of my table?

Let's practice!

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Creating schemas

CREATING POSTGRESQL DATABASES

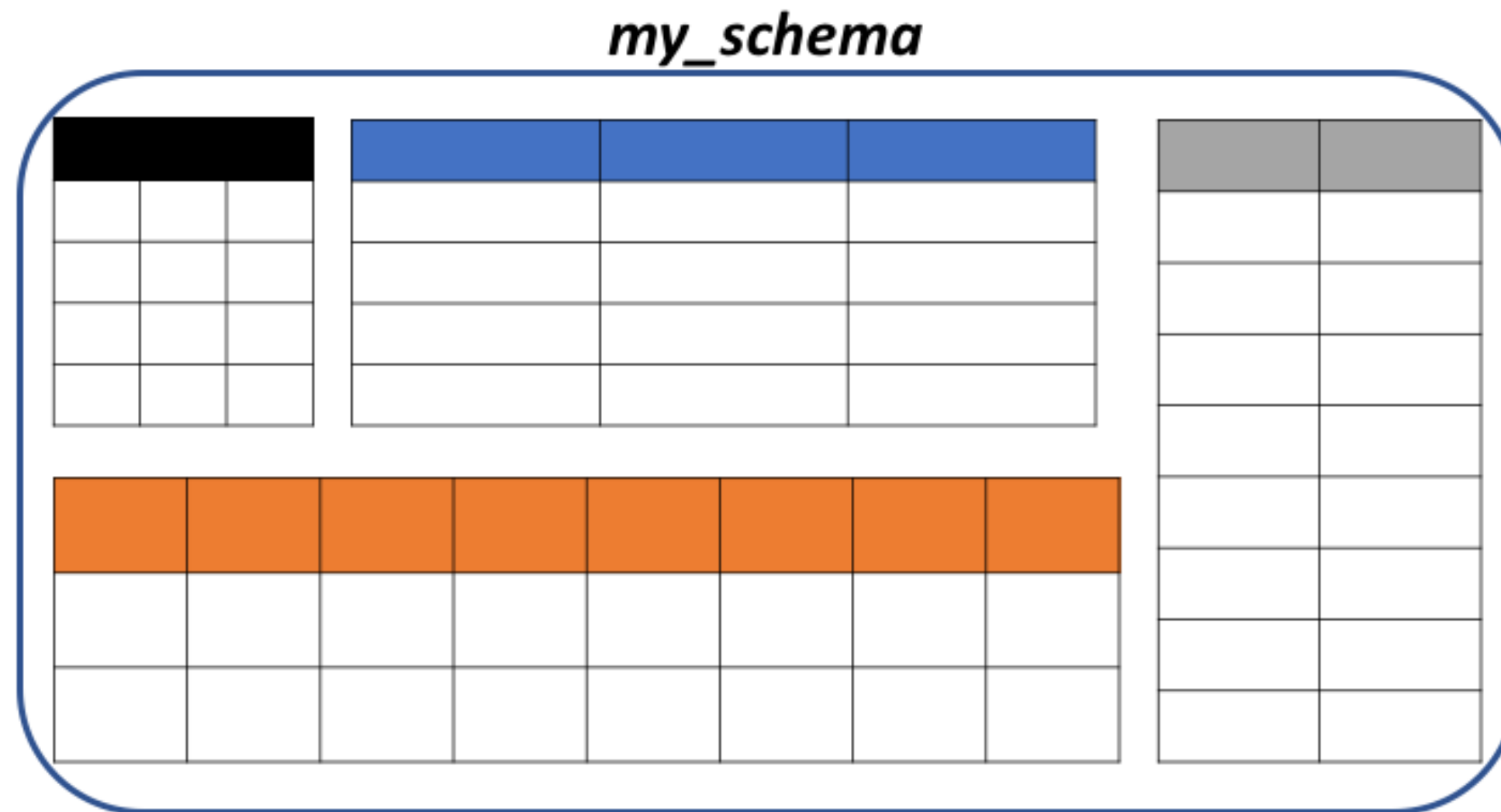


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PostgreSQL schemas

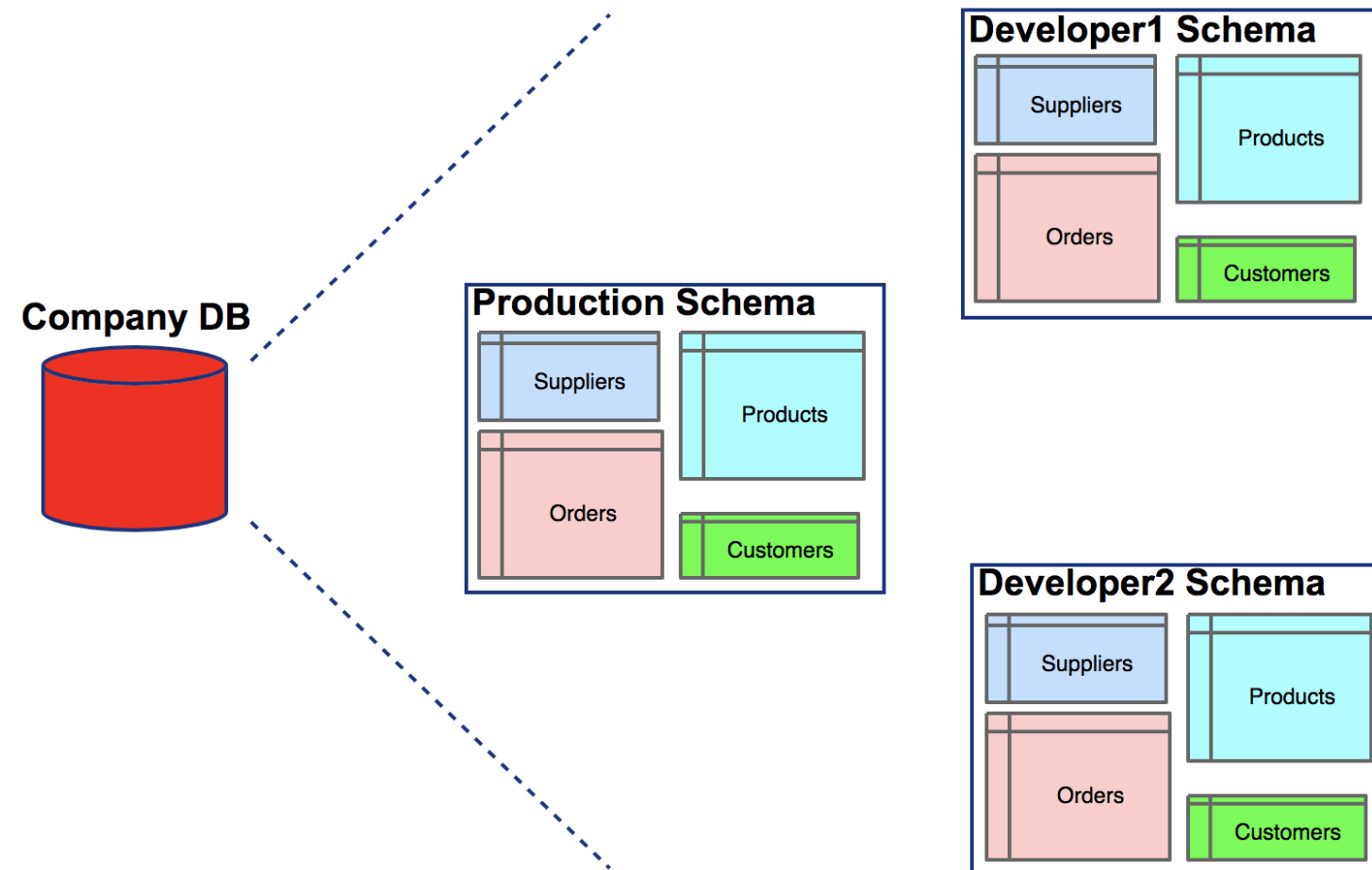
- A named container for tables



¹ <https://www.postgresql.org/docs/9.1/ddl-schemas.html>

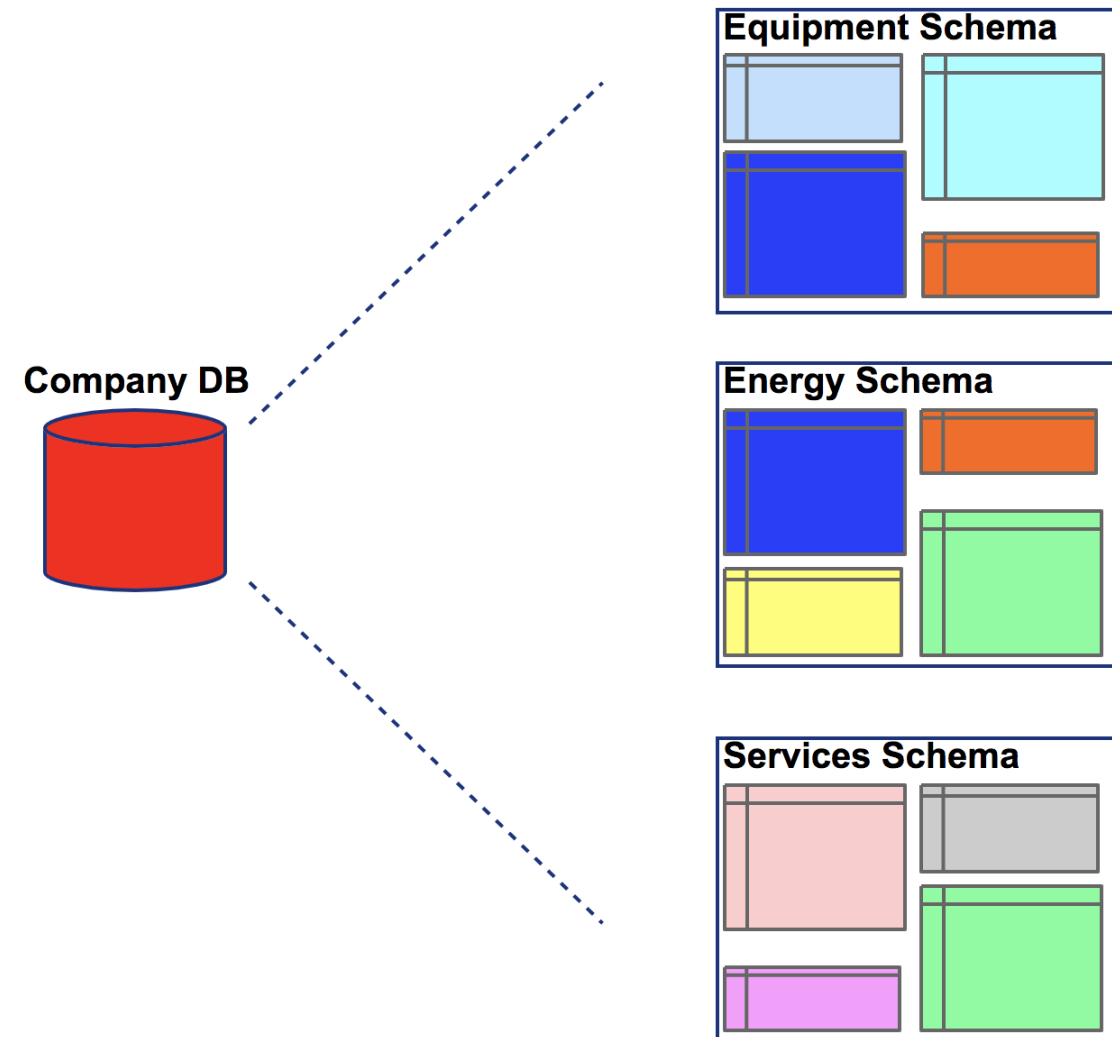
Schema uses

Providing database users with separate environments



Schemas uses

Organizing database objects into related groups



The default schema

- The `public` schema is the default schema in PostgreSQL

```
CREATE TABLE topic (  
    id serial PRIMARY KEY,  
    description TEXT NOT NULL  
);
```

`public.topic`

The CREATE SCHEMA command

```
CREATE SCHEMA schema_name;
```

```
CREATE SCHEMA division1;
```

```
CREATE TABLE division1.school (  
    id serial PRIMARY KEY,  
    name TEXT NOT NULL,  
    mascot_name TEXT,  
    num_scholarships INTEGER DEFAULT 0  
);
```

Schema naming restrictions

- Length of name less than 32
- Name begins with letter or underscore ("_")
- Schema name cannot begin with "pg_"

Let's practice!

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