



Blurred Education

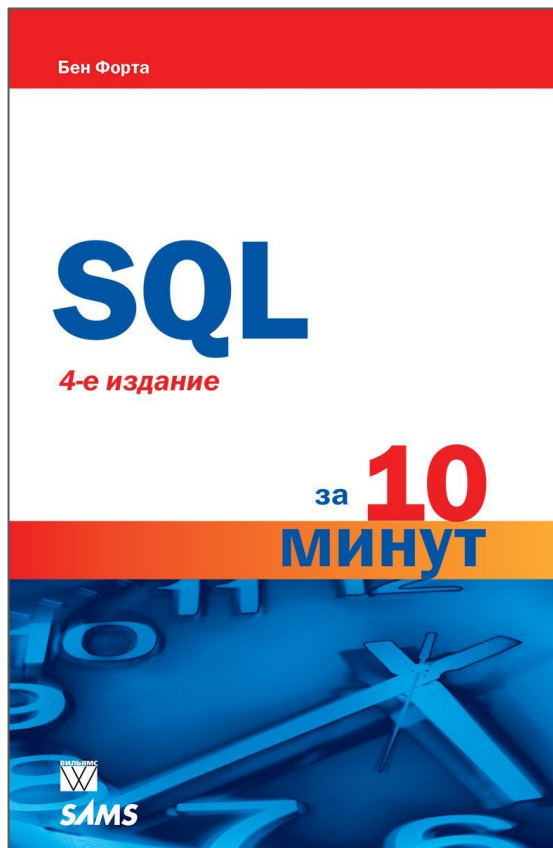
SQL для простых смертных

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СУБД (*Система Управления Базами Данных*) - программное обеспечение, обеспечивающее управление данными посредством специальных команд.

SQL (*Structured Query Language*) - язык запросов для управления данными в реляционных базах данных.

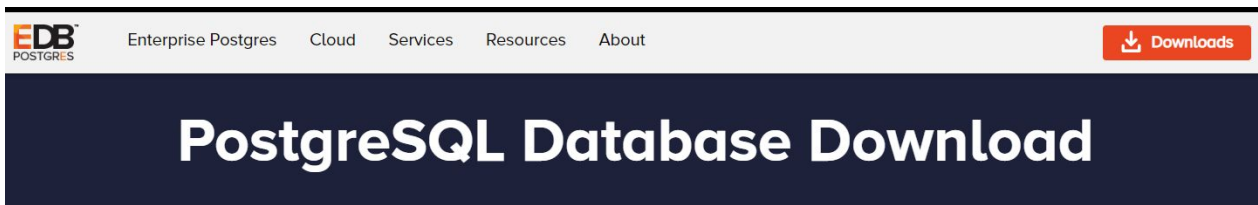
PostgreSQL - свободно распространяемая open source СУБД, базирующееся на собственном диалекте SQL



SQL делится на несколько подязыков:

- DDL
- DML & DQL
- DCL
- TCL

- СУБД - PostgreSQL 10
- Менеджер - pgAdmin
- Консольная утилита - PSQL
- Прикладной ЯП - Python

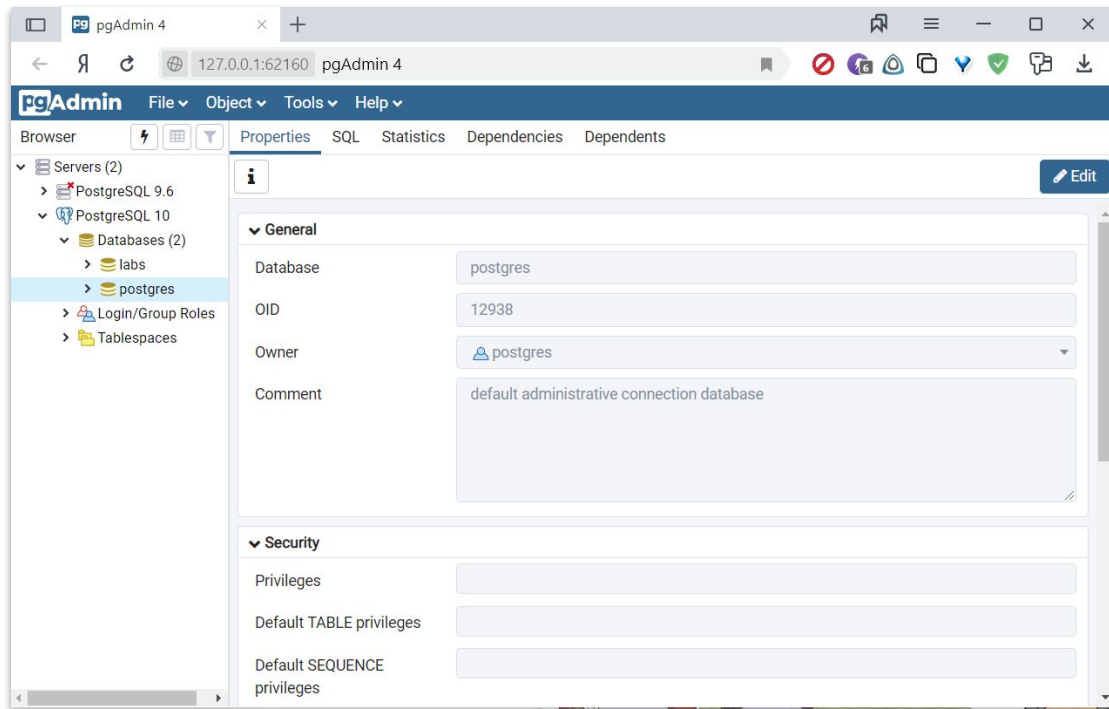


The screenshot shows the top navigation bar of the EDB PostgreSQL website. On the left is the EDB PostgreSQL logo. In the center are navigation links: Enterprise Postgres, Cloud, Services, Resources, and About. On the right is a red button with a download icon and the text 'Downloads'. Below the navigation bar is a dark blue banner with the text 'PostgreSQL Database Download' in white.

PostgreSQL Version	Linux x86-64	Linux x86-32	Mac OS X	Windows x86-64	Windows x86-32
12.0	N/A	N/A	Download	Download	N/A
11.5	N/A	N/A	Download	Download	N/A
10.10	Download	Download	Download	Download	Download
9.6.15	Download	Download	Download	Download	Download
9.5.10	Download	Download	Download	Download	Download
9.4.24	Download	Download	Download	Download	Download
9.3.25 (Not Supported)	Download	Download	Download	Download	Download

<https://www.enterprisedb.com/downloads/postgres-postgresql-downloads>

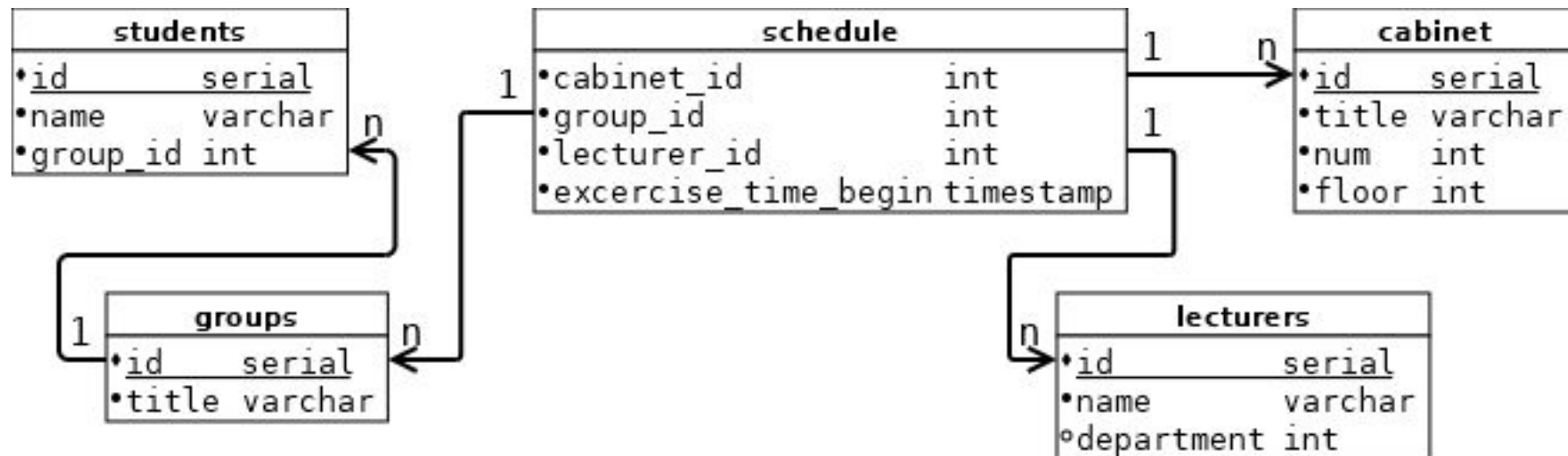
Зайдем в базу



pgAdmin 4

Команды:

- **CREATE DATABASE**
- **CREATE TABLE**
- **CREATE VIEW**



CREATE DATABASE

The screenshot shows a database management tool interface. The left pane, titled 'Browser', displays a tree view of servers and databases. Under 'PostgreSQL 10', the 'Databases (4)' folder is selected. A context menu is open over the 'airba' database, with the 'Create' option highlighted. The 'Create' option has a sub-menu arrow pointing to the right, which is currently open, showing 'Database...'. Other options in the context menu include 'Refresh...'. The right pane shows the 'Query Editor' and 'Query History' tabs. The 'Query Editor' tab is active, displaying the connection string 'demo/postgres@PostgreSQL 10'. The 'Query History' tab is also visible. The 'Properties' tab is selected in the top right pane. The 'SQL' tab is also visible. The 'Statistics' and 'Dependencies' tabs are also visible. The 'Query Editor' tab shows a query with the number '2' on the first line.

Browser

Servers (2)

- PostgreSQL 9.6
- PostgreSQL 10
 - Databases (4)
 - airba
 - demo
 - labs
 - postgres
 - Login/Group Roles
 - Tablespaces

Properties SQL Statistics Depend

demo/postgres@PostgreSQL 10

Query Editor Query History

Create Database...

Refresh...

2

Тип	Название	Пример
Строковый	char, varchar, text	“hello”
Числовой	number, int, long, float, real, serial	23.22
Временной	date, time, timestamp	“2018-09-09T22:22:22”
Файловый	clob, blob	*набор байтов*
Комбинаторные	json, jsonb, hstore, table, set, enum	“{a:2, b:3}”

CREATE TABLE

```
create table public.students  
(  
    id serial not null  
        constraint students_pkey  
        primary key,  
    name varchar,  
    group_id integer  
);
```

<https://postgrespro.ru/docs/postgresql/9.6/sql-createtable>

- **ALTER TABLE**
- **DROP TABLE**
- **CREATE TABLE AS**

DML

- **INSERT**
- **SELECT**
- **UPDATE**
- **DELETE**

INSERT

```
1  INSERT INTO groups (title) VALUES ('AAA'), ('AAB'), ('AAC');
2
3  INSERT INTO lectures (name, department) VALUES
4      ('Зыборг Владимир Михайлович', 1),
5      ('Ревва Иван Леонидович', 2),
6      ('Щитинин Владимир Геннадьевич', 3);
7
8  INSERT INTO cabinet (title, num, floor) VALUES
9      ('1 Поточка', 103, 1),
10     ('220 кабинет', 220, 2),
11     ('Терминальный класс 1', 303, 3),
12     ('Терминальный класс 2', 304, 3),
13     ('Терминальный класс Губарева', 320, 3);
```

SELECT

```
1 SELECT * FROM students;
2
3 SELECT title from groups;
4
5 SELECT name, department FROM lectures;
6
7 SELECT * from cabinet;
```

```
1 SELECT * FROM schedule;
2
3 SELECT * FROM schedule WHERE cabinet_id = 1;
4
5 SELECT * FROM schedule WHERE lecturer_id = 3;
6
7 SELECT * FROM schedule WHERE group_id = 1;
```


UPDATE

```
1 UPDATE students SET group_id = 1 WHERE id = 9;  
2
```

DELETE

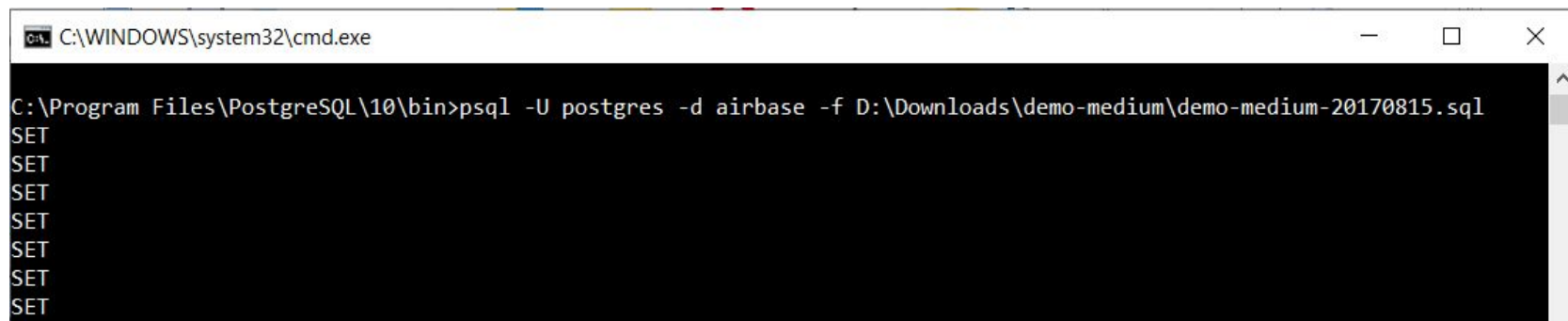
```
1 DELETE FROM students WHERE id = 1;
```

```
2
```

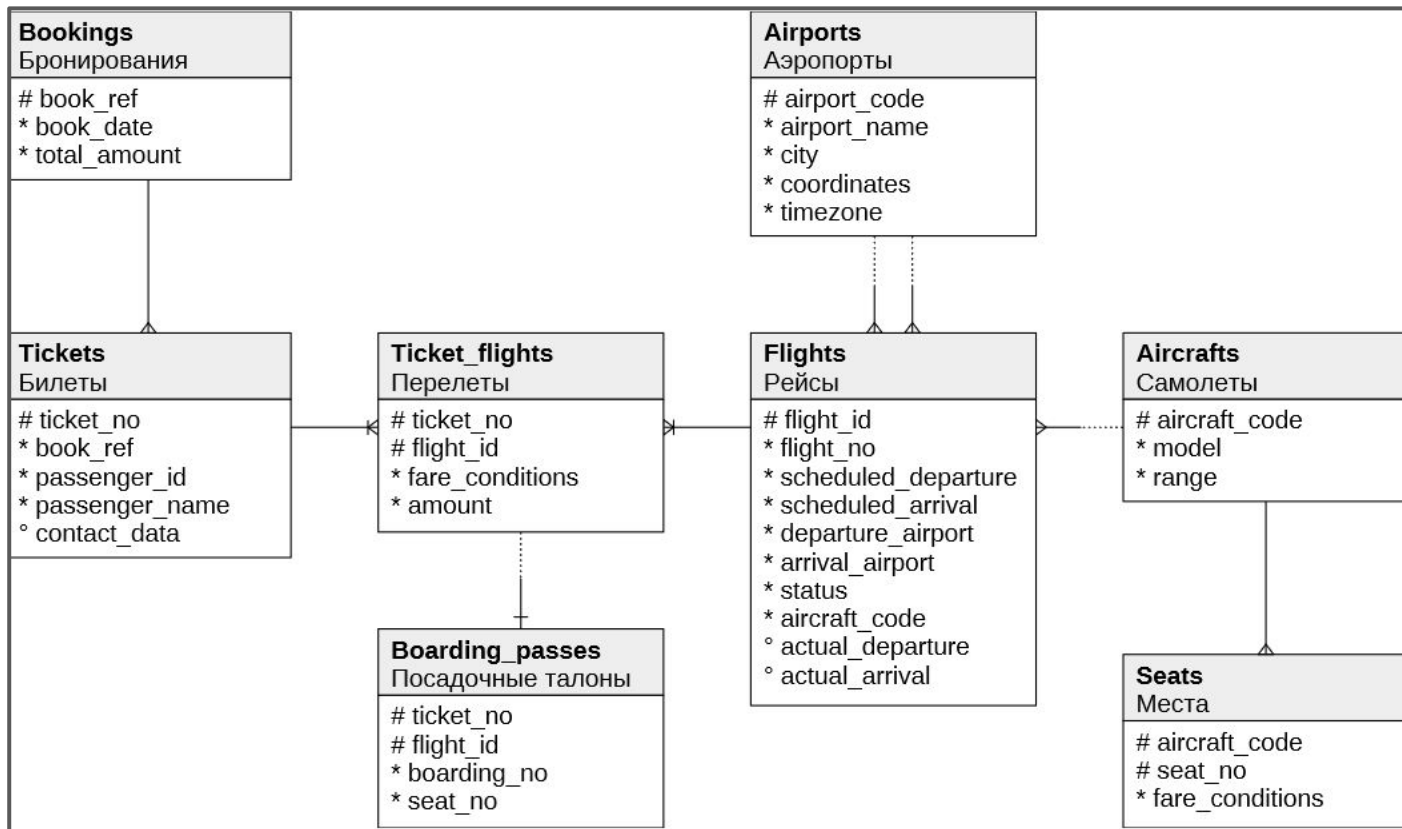
```
3 DELETE FROM students WHERE group_id = 2;|
```

Больше SELECT'a

- Where
- GROUP HAVING
- Подзапросы
- JOIN'ы
- Ограничение и смещение



```
C:\WINDOWS\system32\cmd.exe  
C:\Program Files\PostgreSQL\10\bin>psql -U postgres -d airbase -f D:\Downloads\demo-medium\demo-medium-20170815.sql  
SET  
SET  
SET  
SET  
SET  
SET  
SET  
SET
```



Admin File Object Tools Help

Browser demo Properties SQL Statistics Dependencies Dependents demo/postgres@PostgreSQL 10 *

demo/postgres@PostgreSQL 10

Query Editor Query History Scratch Pad

```
1 SELECT * FROM flights;
```

Data Output Explain Messages Notifications

	flight_id [PK] integer	flight_no character (6)	scheduled_departure timestamp with time zone	scheduled_arrival timestamp with time zone	departure_airport character (3)	arrival_airport character (3)	status character varying (20)	aircraft_code character (3)
1	182	PG0402	2017-09-01 16:25:00+07	2017-09-01 17:20:00+07	DME	LED	Scheduled	321
2	1996	PG0335	2017-08-26 13:30:00+07	2017-08-26 15:35:00+07	DME	JOK	Scheduled	CN1
3	5979	PG0384	2017-08-26 16:10:00+07	2017-08-26 16:40:00+07	DME	BZK	Scheduled	SU9
4	8136	PG0138	2017-08-28 14:15:00+07	2017-08-28 15:20:00+07	VKO	RTW	Scheduled	CR2
5	10455	PG0277	2017-09-12 15:45:00+07	2017-09-12 19:10:00+07	SVO	OVB	Scheduled	773
6	11531	PG0456	2017-08-16 20:15:00+07	2017-08-16 22:30:00+07	SVO	PES	On Time	CN1
7	13774	PG0460	2017-08-25 18:30:00+07	2017-08-25 19:25:00+07	SVO	ULV	Scheduled	SU9
8	16088	PG0407	2017-08-20 16:10:00+07	2017-08-20 17:05:00+07	LED	DME	Scheduled	321
9	16181	PG0230	2017-08-28 14:20:00+07	2017-08-28 15:10:00+07	LED	VKO	Scheduled	321



Анализируйте

это!