Web Based Dashboards

Module # 4 (Deploy Postgre SQL Database)

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Step # 1: Add Database Information: okteto-stack.yaml

In our application we need a storage for our data, which is why we will now deploy a postgresql database under our fastapi service. To do that we need to:

- Open Github Desktop
- Add the postgresql information to our okteto-stack.yaml configuration file
- Commit the okteto-stack.yaml updates to Github Desktop
- Redeploy our project

okteto-stack.yaml

```
services:
  fastapi:
    public: true
    image: profgilani79/website:latest
    build: .
    replicas: 1
    ports:
      - 8080:8080
```

On the left is our original file, below it we will add the additional lines of code that pertains to the postgresql database. On a side note, Okteto has several different databases that the users can use. Postgresql is a popular open-source database, so we will use it.

Step # 1: Add Database Information: okteto-stack.yaml (Continued)

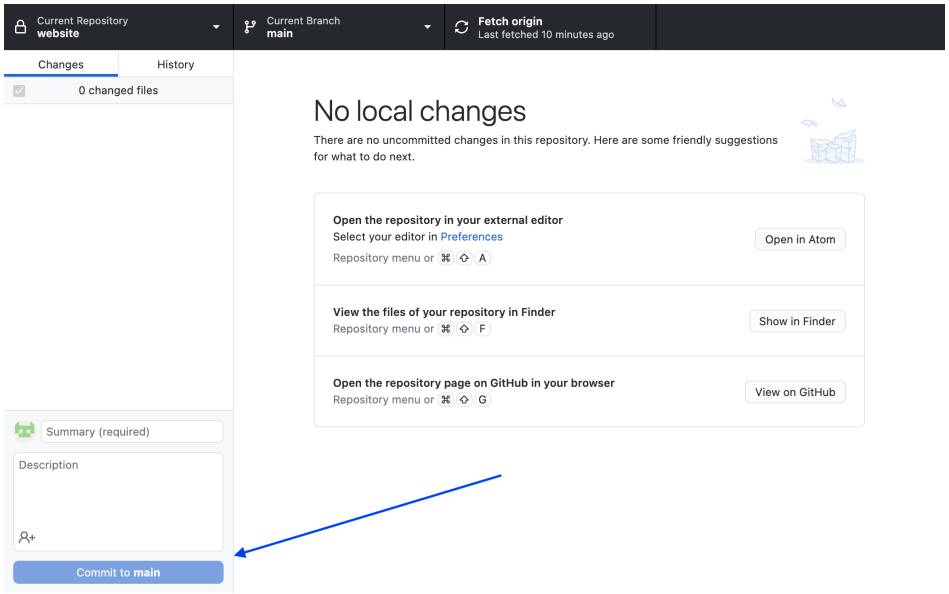
okteto-stack.yaml

```yaml
services:
  fastapi:
    public: true
    image: profgilani79/website:latest
    build: .
    replicas: 1
    ports:
      - 8080:8080
    environment:
      - DB_HOST=postgres://pguser:pgpass@postgres:5432/pgdb
      - secret=dev
  postgresql:
    image: bitnami/postgresql:latest
    ports:
      - 5432
    environment:
      - POSTGRES_USER=pguser
      - POSTGRES_PASSWORD=pgpass
      - POSTGRES_DB=pgdb
    volumes:
      - data:/bitnami/postgresql
volumes:
  data:
```

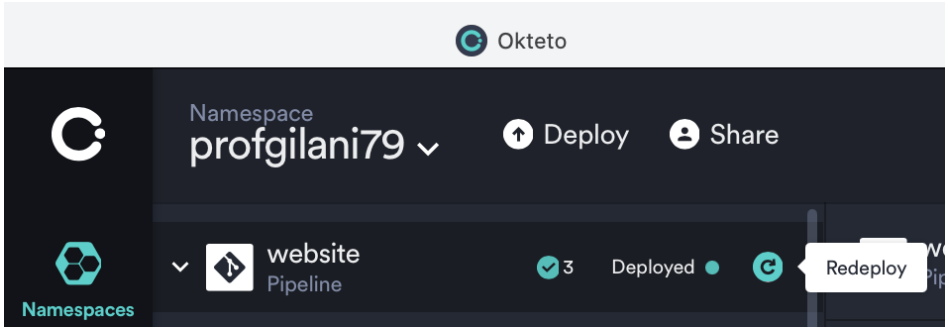
(Updated file in canvas)

- Under fastapi we add another parameter, environment. That is where the url connection for the database is defined. It has 4 main parts:
  - user name (pguser)
  - password (pgpass)
  - database (pgdb)
  - port number (5432)
- Those 4 parts are defined in a new entry under services, named postgresql. Under postgresql is the environment, that defines the db name, username and password.
- The port number 5432 is designated by Okteto, for postgresql databases.

Step # 2 and #3: Commit Changes and Redeploy

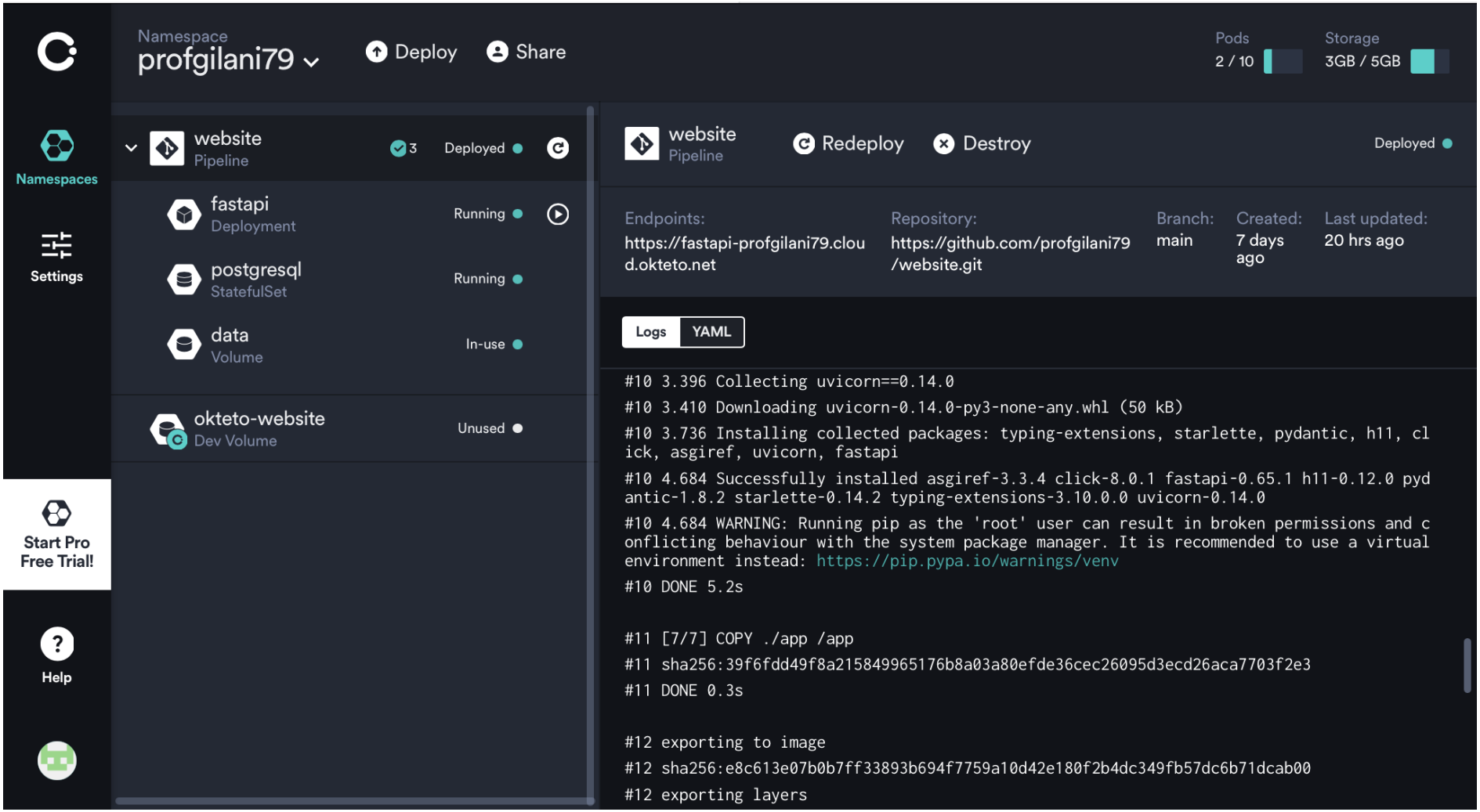


Commit the changes to the okteto-stack.yaml file, using Github Desktop.



Now on your Okteto page, redeploy your project. For example, my application name is website. The curved arrow next to Deployed, will allow me to Redeploy the project.

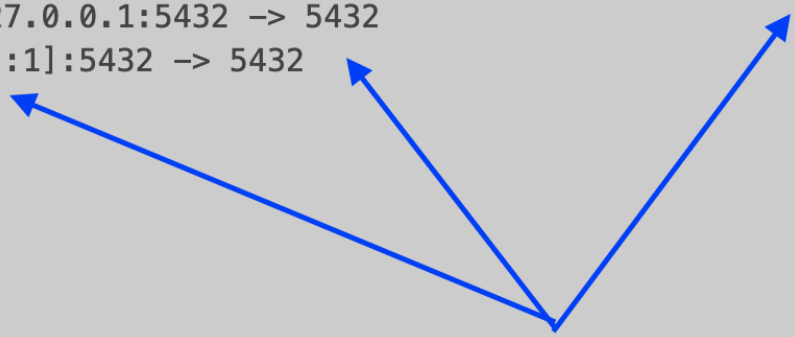
Postgresql Database is Deployed



Your postgresql database is now deployed and ready to use within your website application.

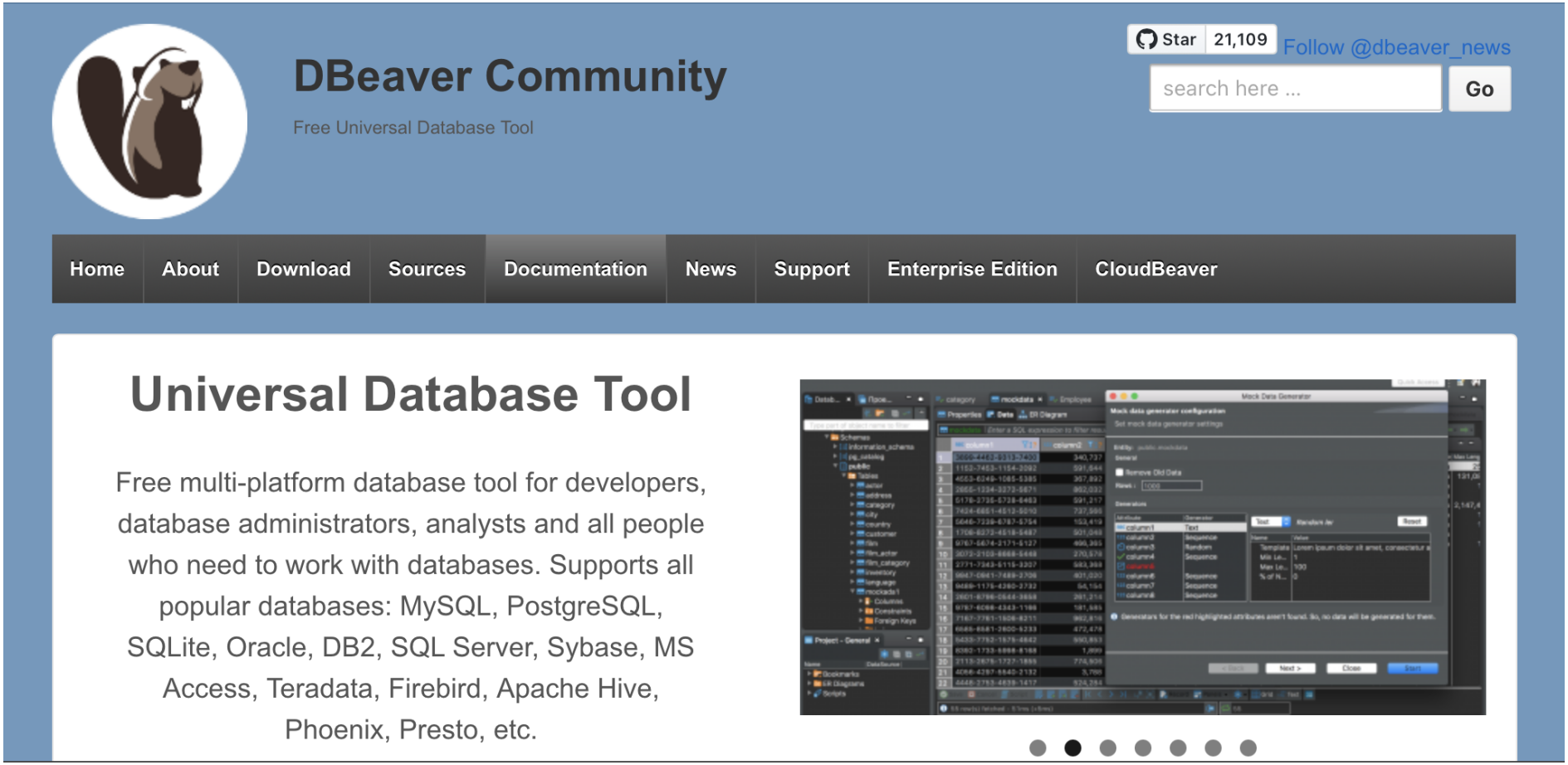
Connect to database

```
wajgilani@1053macbooks-MacBook-Pro website % kubectl port-forward service/postgresql 5432:5432
Forwarding from 127.0.0.1:5432 -> 5432
Forwarding from [::1]:5432 -> 5432
```



Your postgresql database is now deployed and ready to use within your website application.

Download Postgresql GUI



https://dbeaver.io

Download Postgresql GUI

Download

Community Edition 21.1.1

Released on June 21, 2021 (Milestones).
It is free and open source (license).
Also you can get it from the GitHub mirror.

Enterprise Edition 21.1

Released on June 7, 2020
EE version web site: dbeaver.com
Trial version is available.

Windows

- **Windows 64 bit (installer)**
- Windows 64 bit (zip)

- Install from Microsoft Store
- Chocolatey (`choco install dbeaver`)

Mac OS X

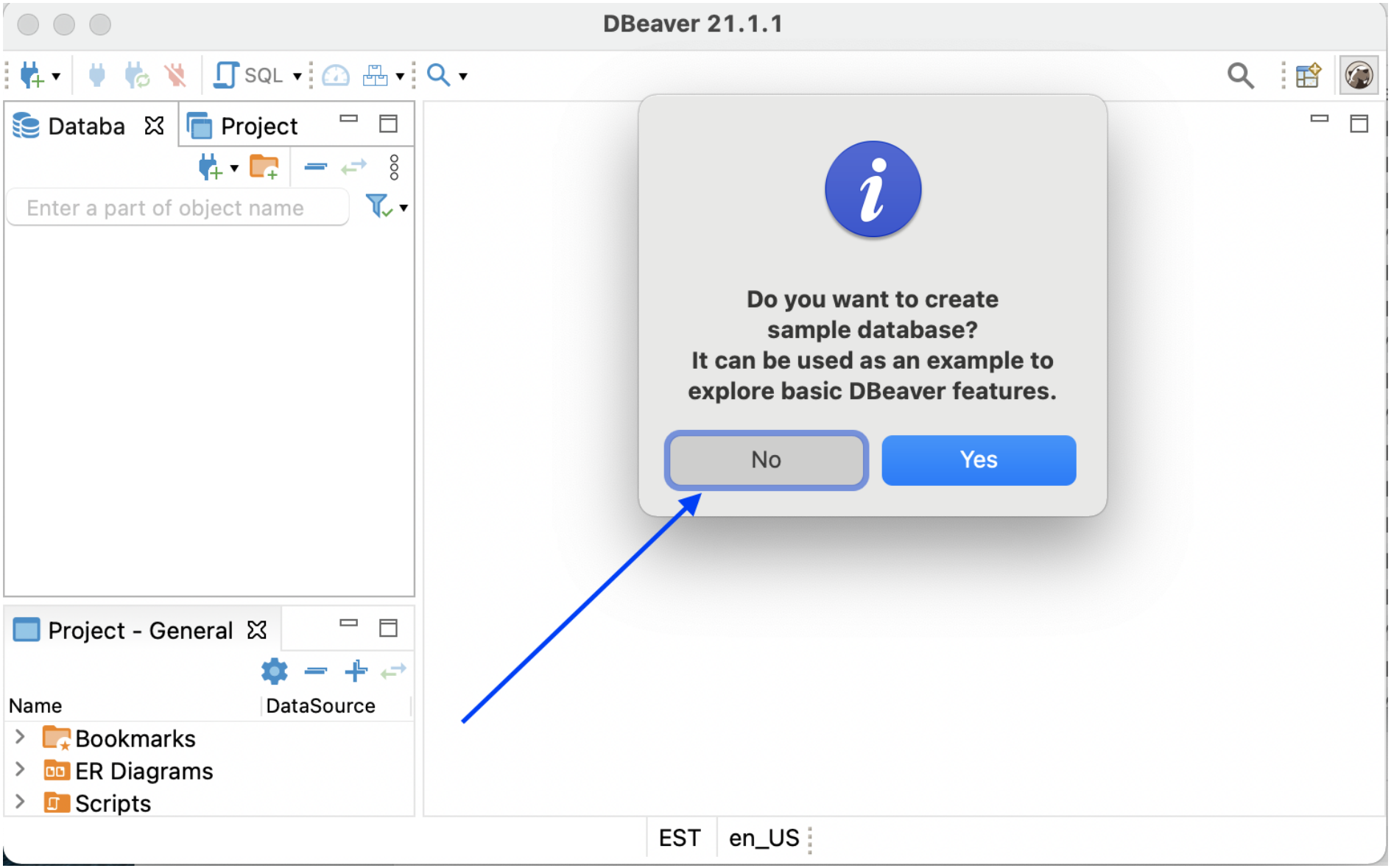
- **Mac OS X (dmg)**
- Mac OS X (zip)

- Brew Cask (`brew install --cask dbeaver-community`)
- MacPorts (`sudo port install dbeaver-community`)

Enterprise Edition features:

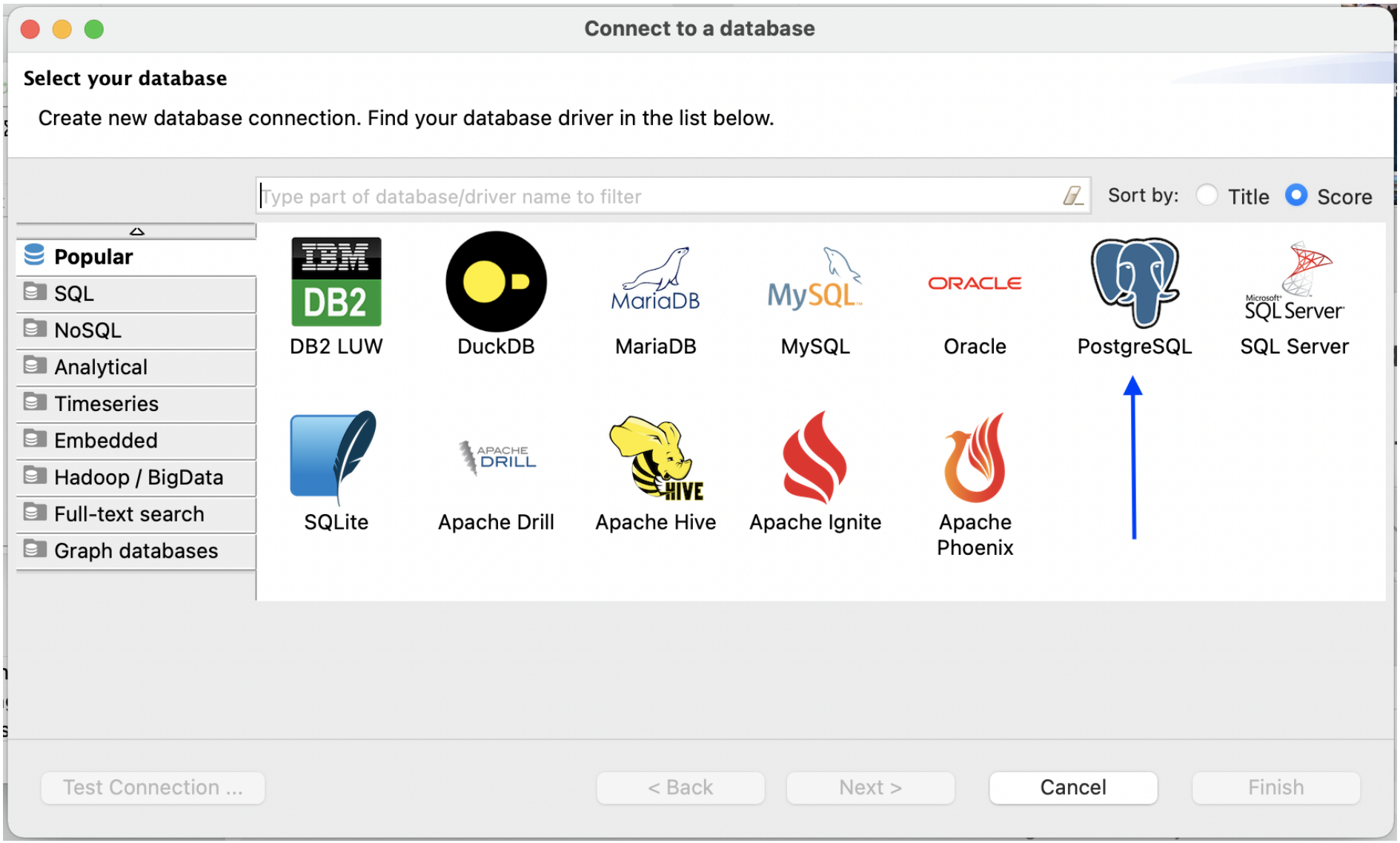
- Support of NoSQL databases:
  - MongoDB
  - Cassandra
  - InfluxDB
  - Redis
  - Amazon DynamoDB
  - Amazon DocumentDB
  - Amazon Keyspaces
  - Google Bigtable
  - Couchbase
  - CouchDB
- Advanced extensions for:
  - Oracle
  - SQL Server
  - Netezza

Download Postgresql GUI



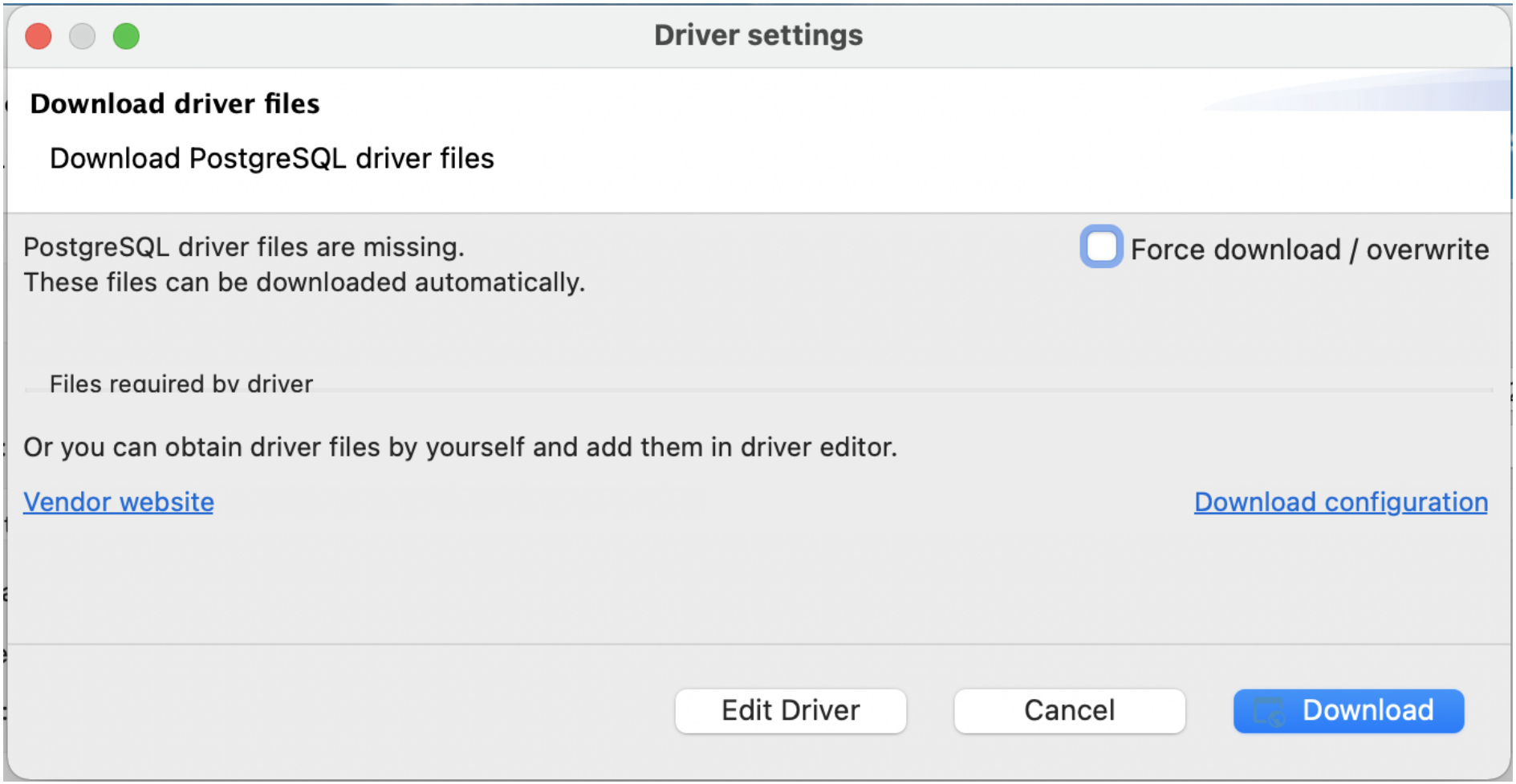
Open and click no about creating sample database

Download Postgresql GUI



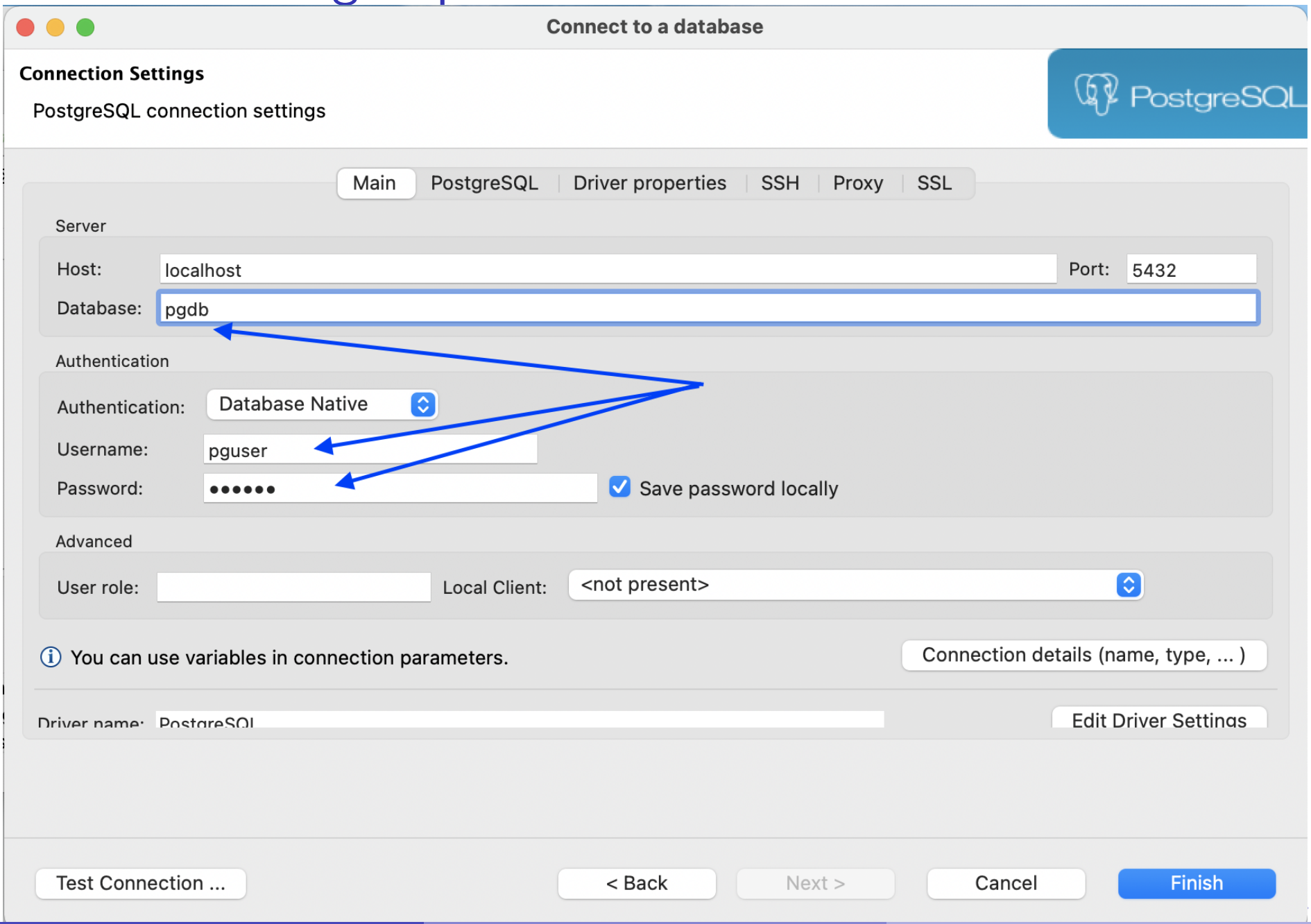
Select the type of database we are connecting to.

Download Postgresql GUI

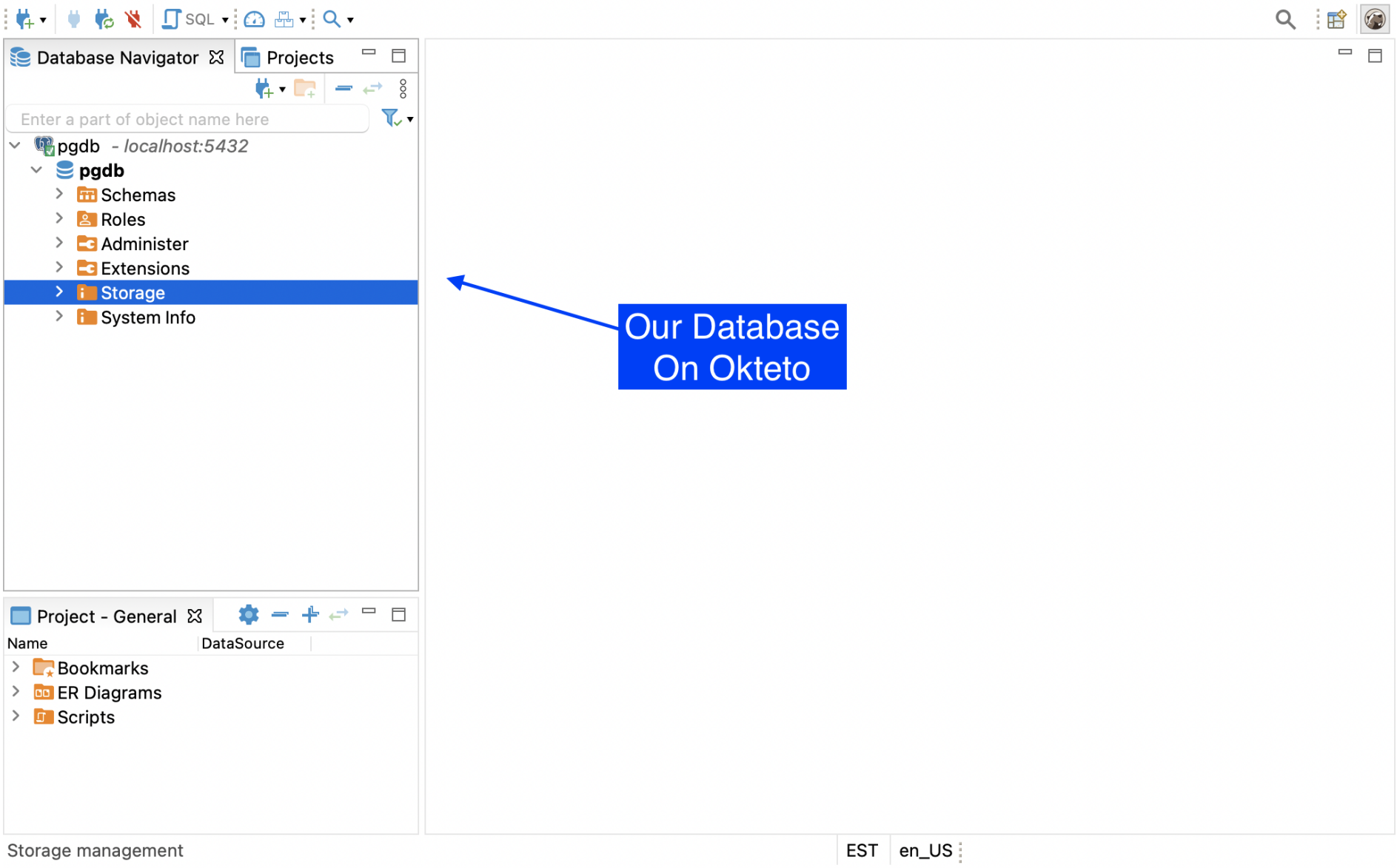


Download the driver settings.

Download Postgresql GUI

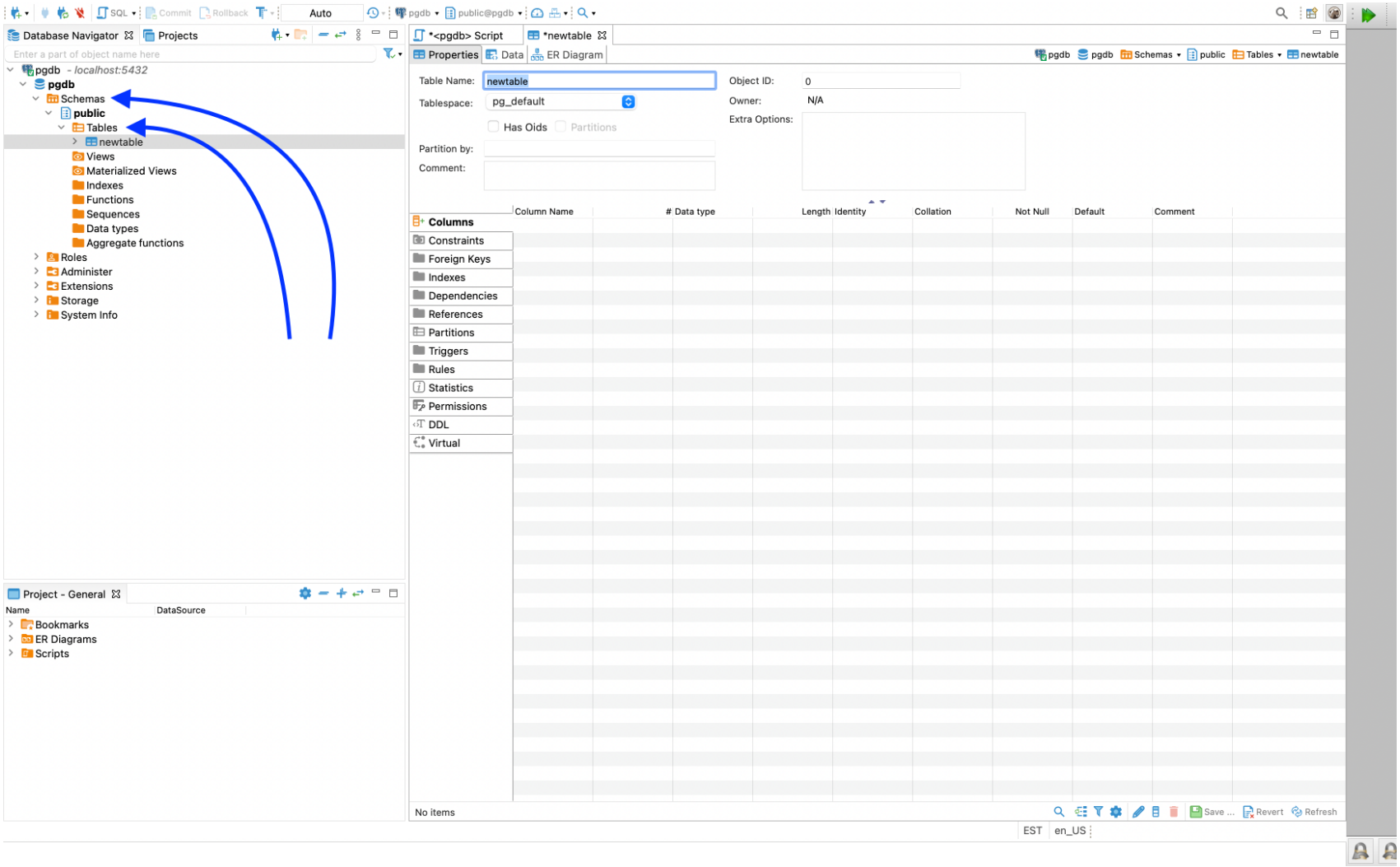


Download Postgresql GUI



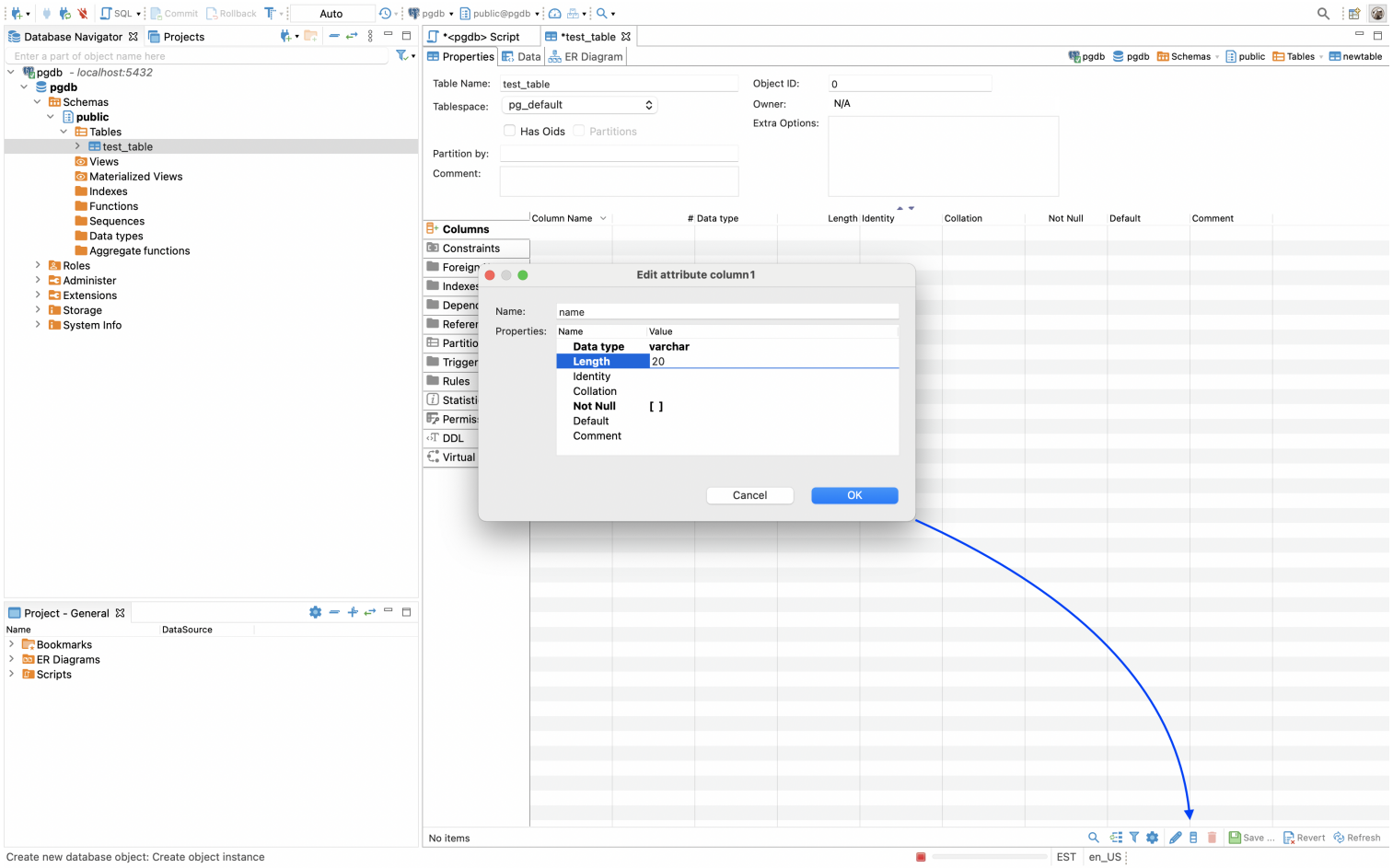
We are connected to our database in Okteto!!!!

Create Example Table - test_table



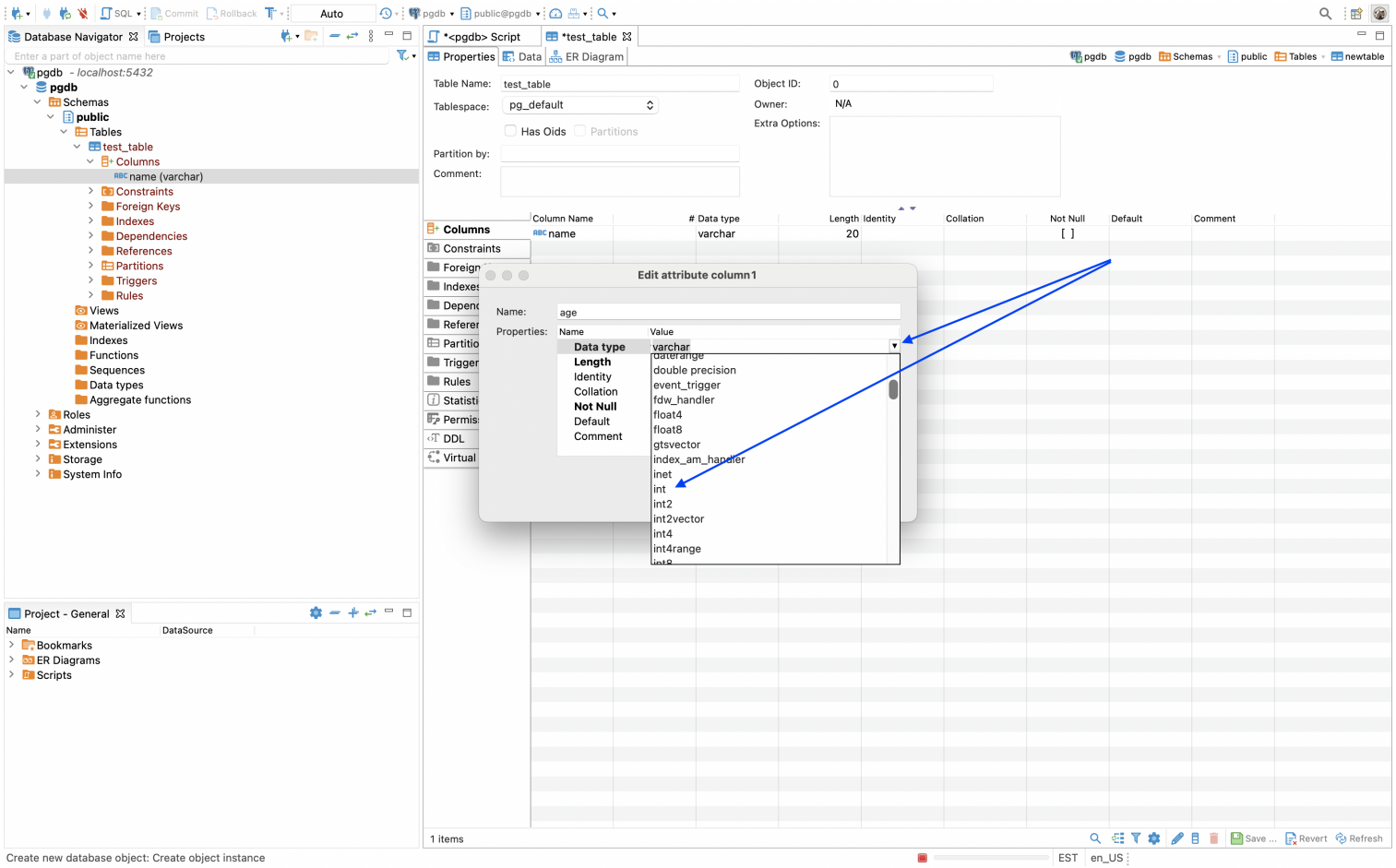
Click on Schemas, and then right-click on Tables. A form opens up that will allow us to name our table and create columns within that table.

Create Example Table - test_table



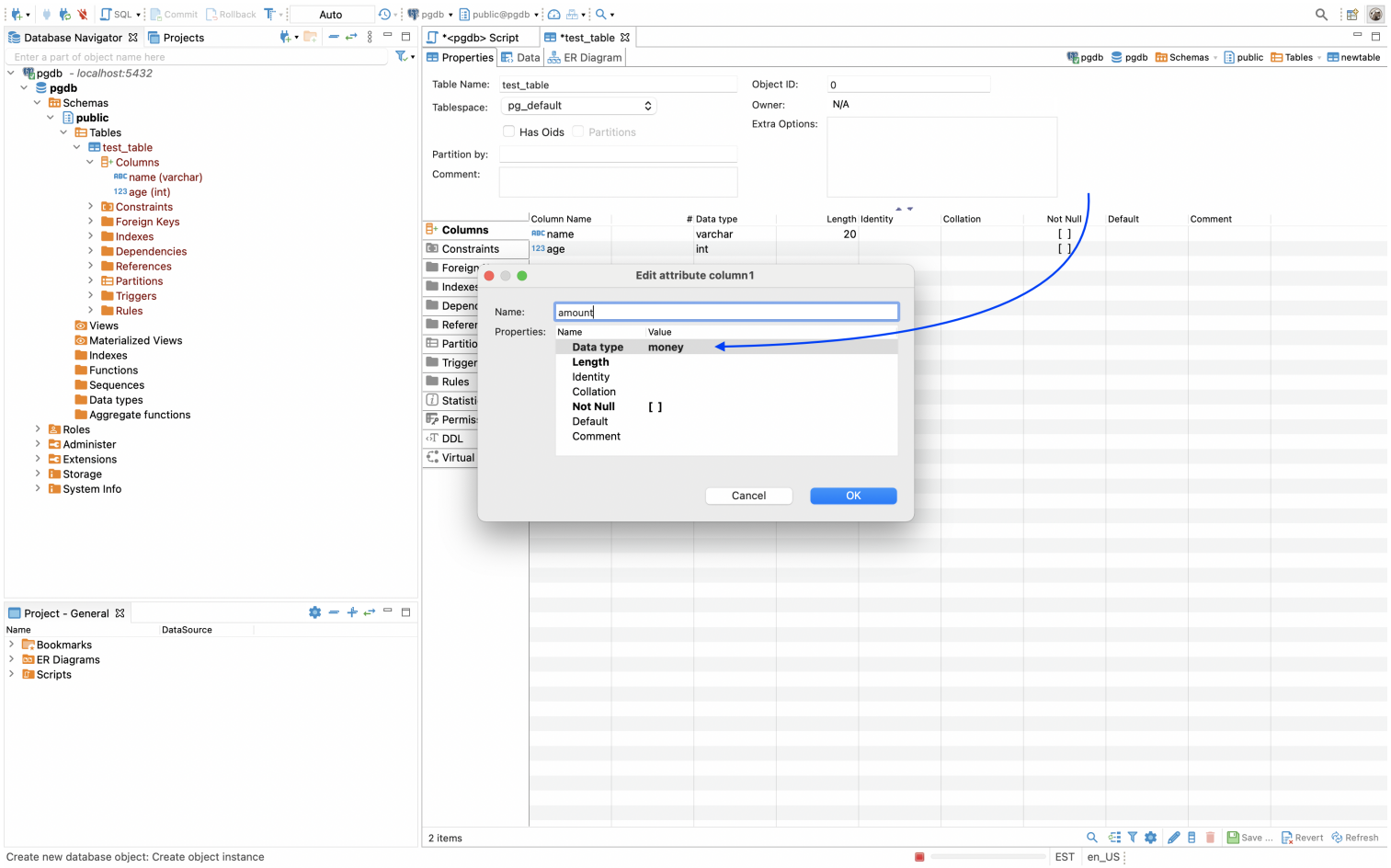
Change the name to test_table, then click on the bottom button to add columns. When creating columns in databases, you must specify the data type. Varchar is a column for alpha-numerics, and we specified that it will be up to 20 characters.

Create Example Table - test_table



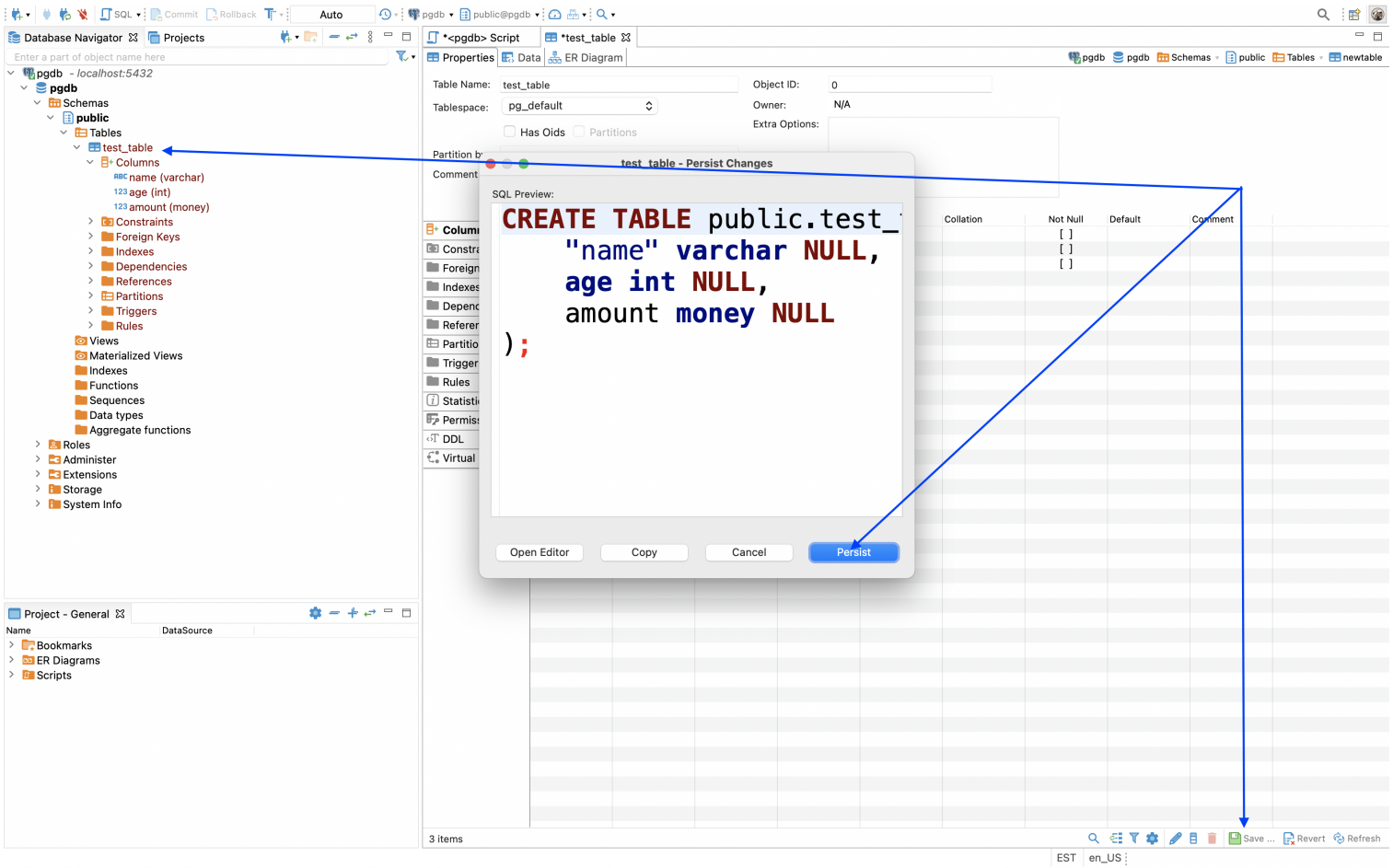
Create the column age, that will be an int, click on the arrow next to the choices and choose it.

Create Example Table - test_table



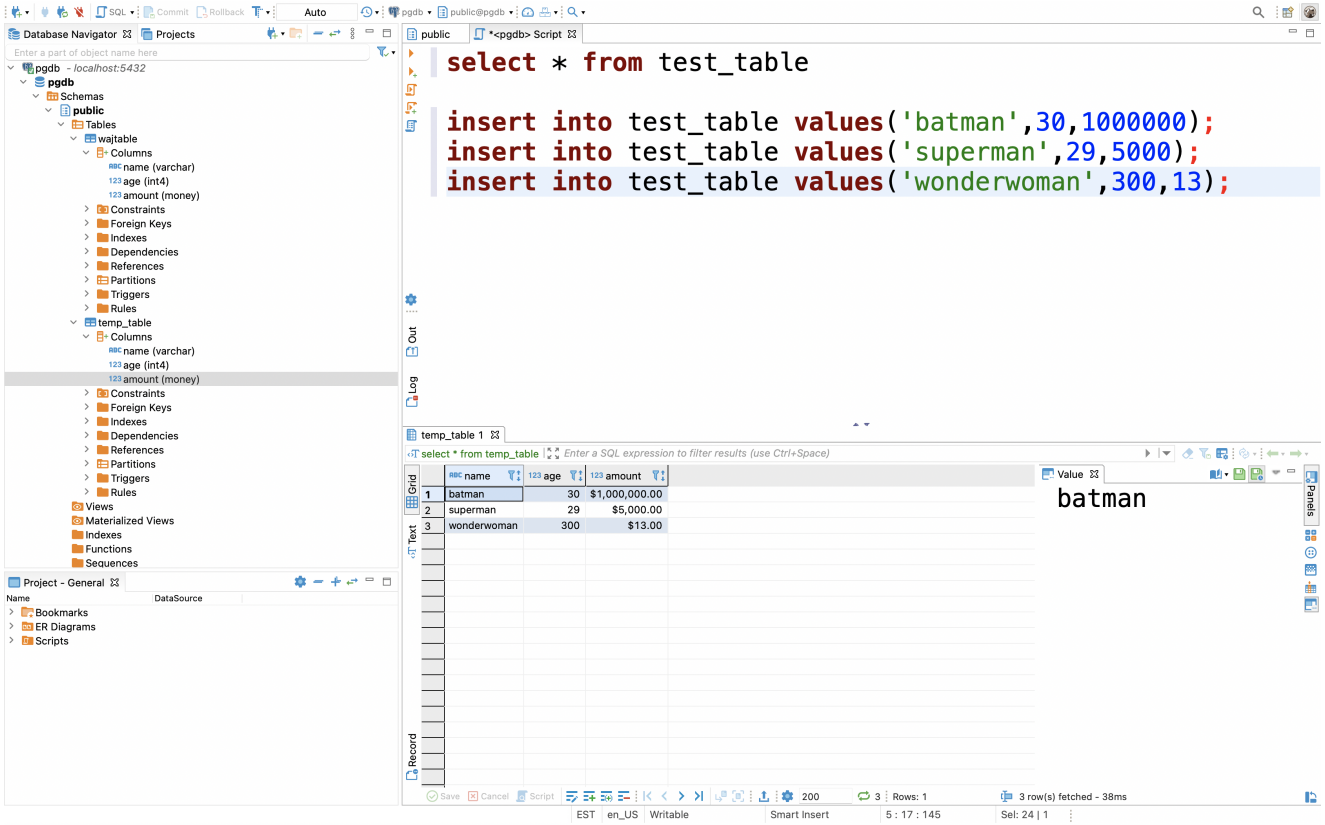
Same with amount, it will be the datatype money.

Create Example Table - test_table



Save the table and click on persist. The table has now been created. Now lets load up some data.

Create Example Table - test_table



Now lets load up some test data, just so we can do a select command. Write the following SQL insert commands:

```
insert into test_table values('batman',30,1000000);
insert into test_table values('superman',29,5000);
insert into test_table values('wonderwoman',300,13);
```

Highlight the SQL commands, and then press control + enter to run the insert statements. Then run the select command and you should see all the results.

Close Database and Connection

When you are done, just close DBeaver, and then press control + C, to exit out of Okteto's connection to the database.

```
wajgilani@1053macbooks-MacBook-Pro website % kubectl port-forward service/postgresql 5432:5432
Forwarding from 127.0.0.1:5432 -> 5432
Forwarding from [::1]:5432 -> 5432
Handling connection for 5432
Handling connection for 5432
Handling connection for 5432
Handling connection for 5432
Handling connection for 5432
^C%
wajgilani@1053macbooks-MacBook-Pro website %
```