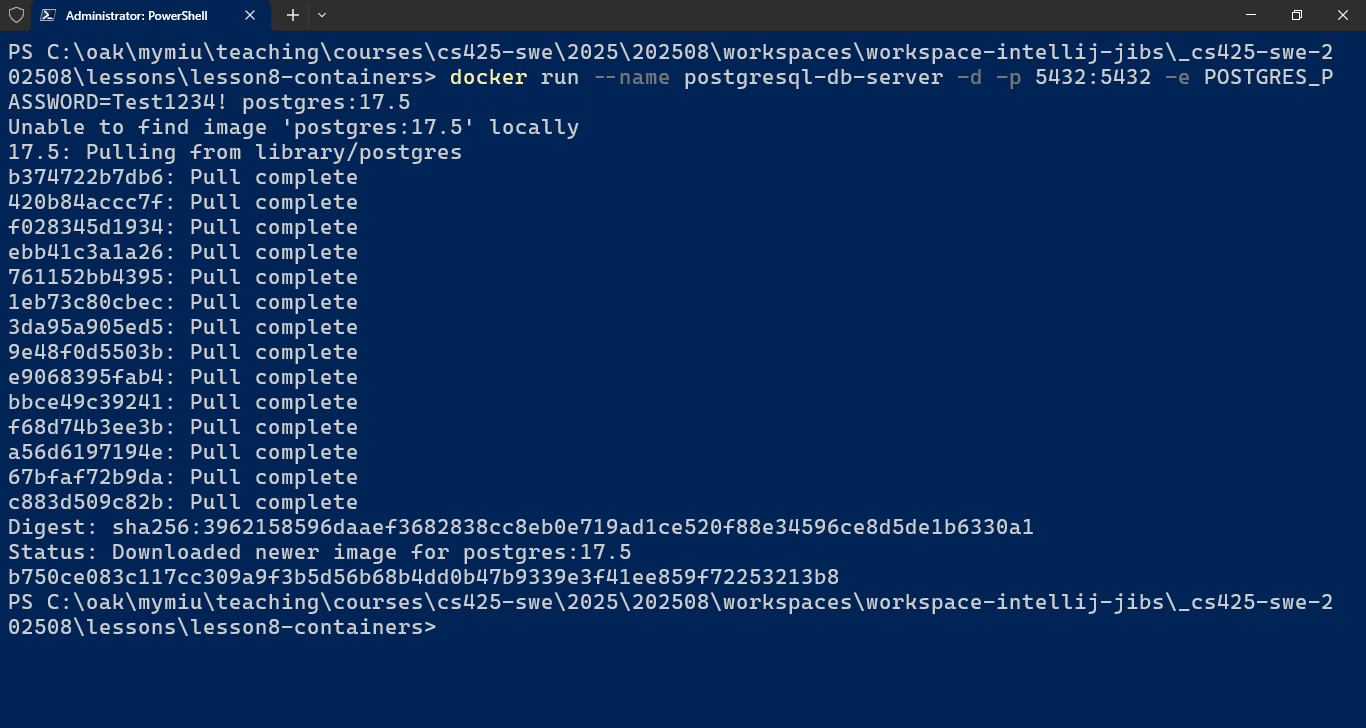
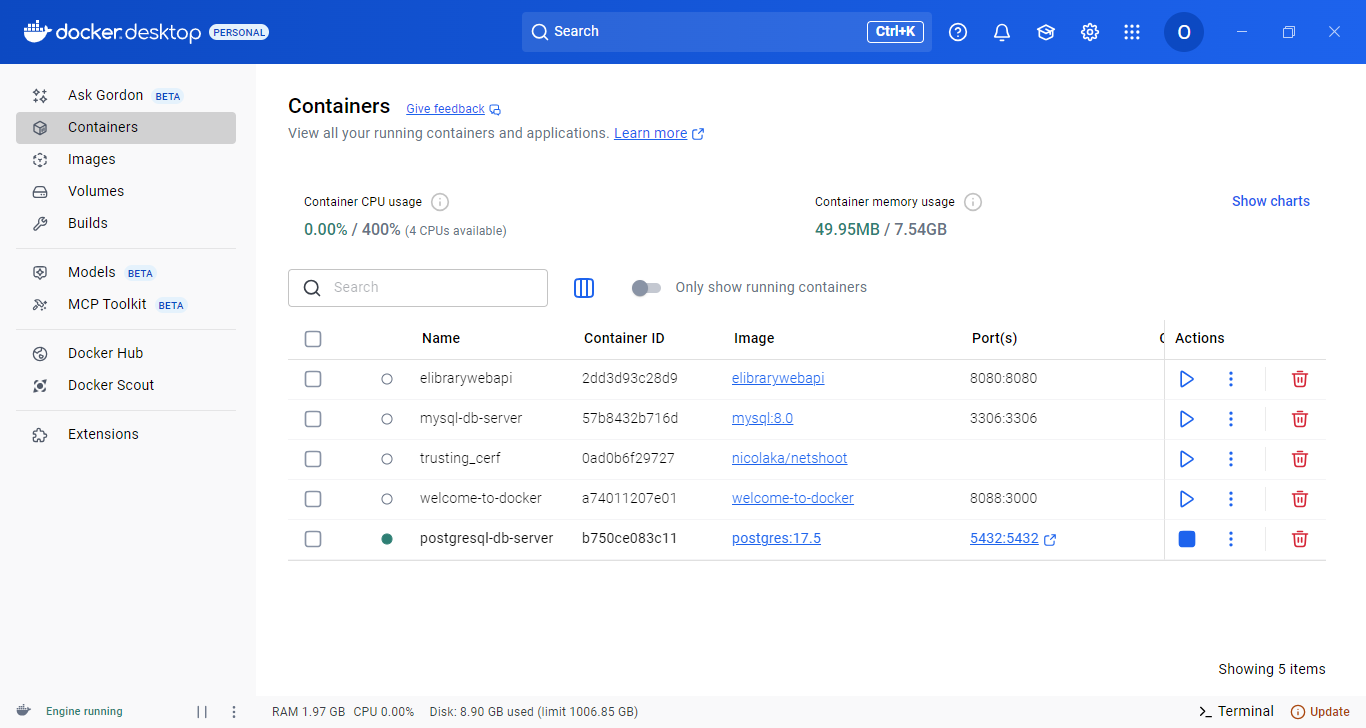
Demo how container data is ephemeral by default

And then add/implement data persistence using docker Volume or Bind Mount (use postgres)

1. Run a postgresql db container -

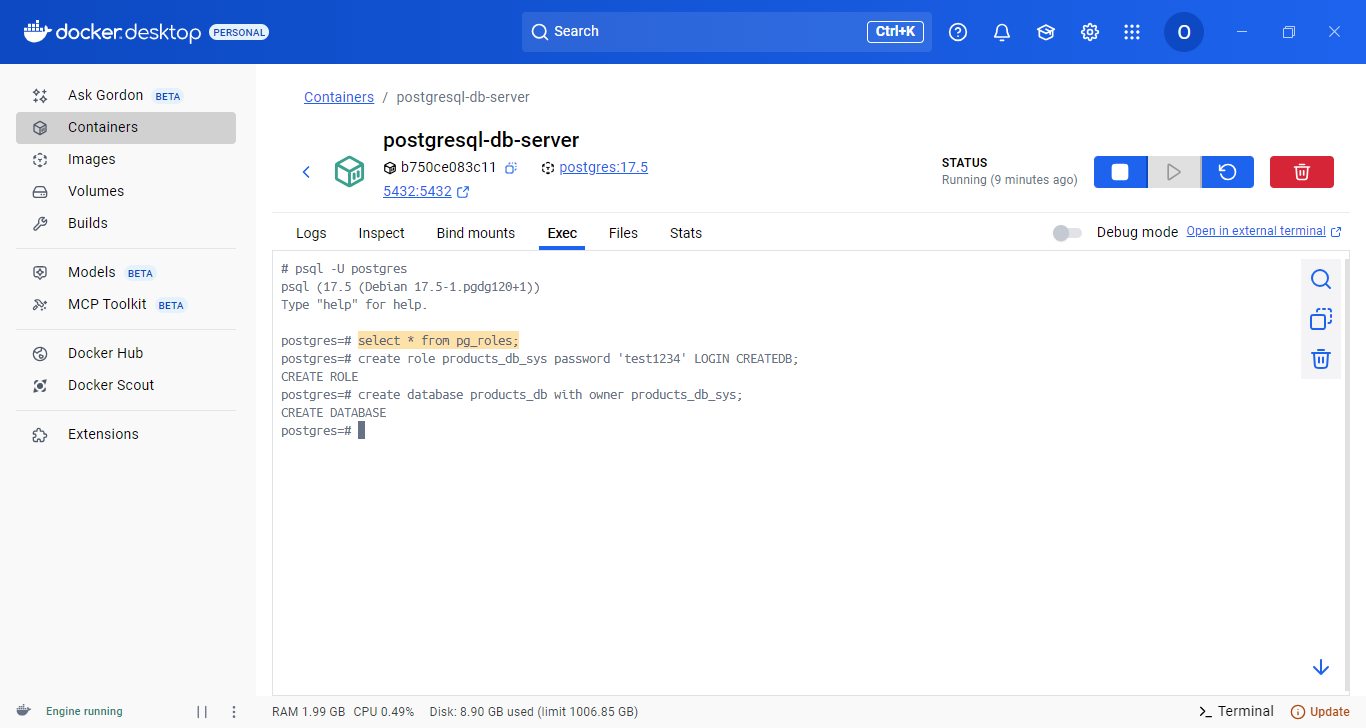
> docker run --name postgresql-db-server -d -p 5432:5432 -e POSTGRES\_PASSWORD=Test1234! postgres:17.5



Postgresql db server container started and running/listening on port 5432

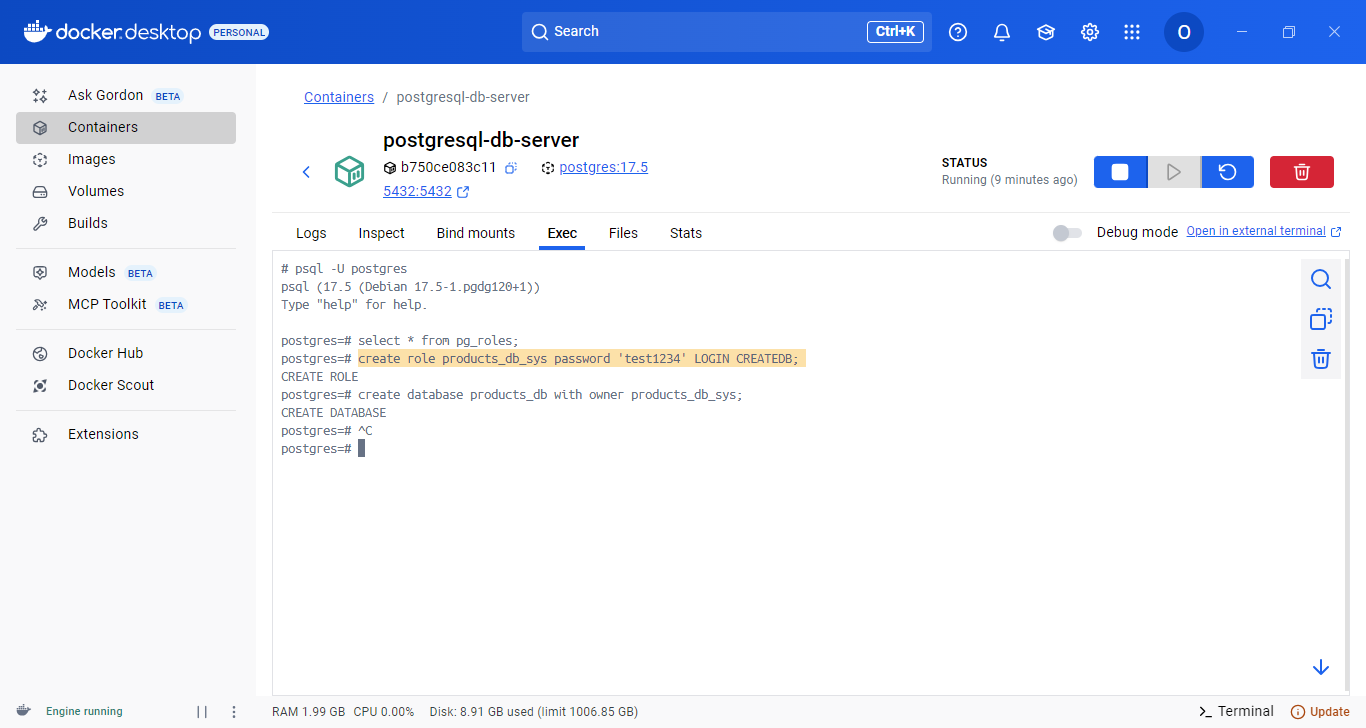
1. On Docker desktop, open the postgresql db server container, go to the Exec tab and execute cmd to connect internally as superuser named, postgres

# psql -U postgres



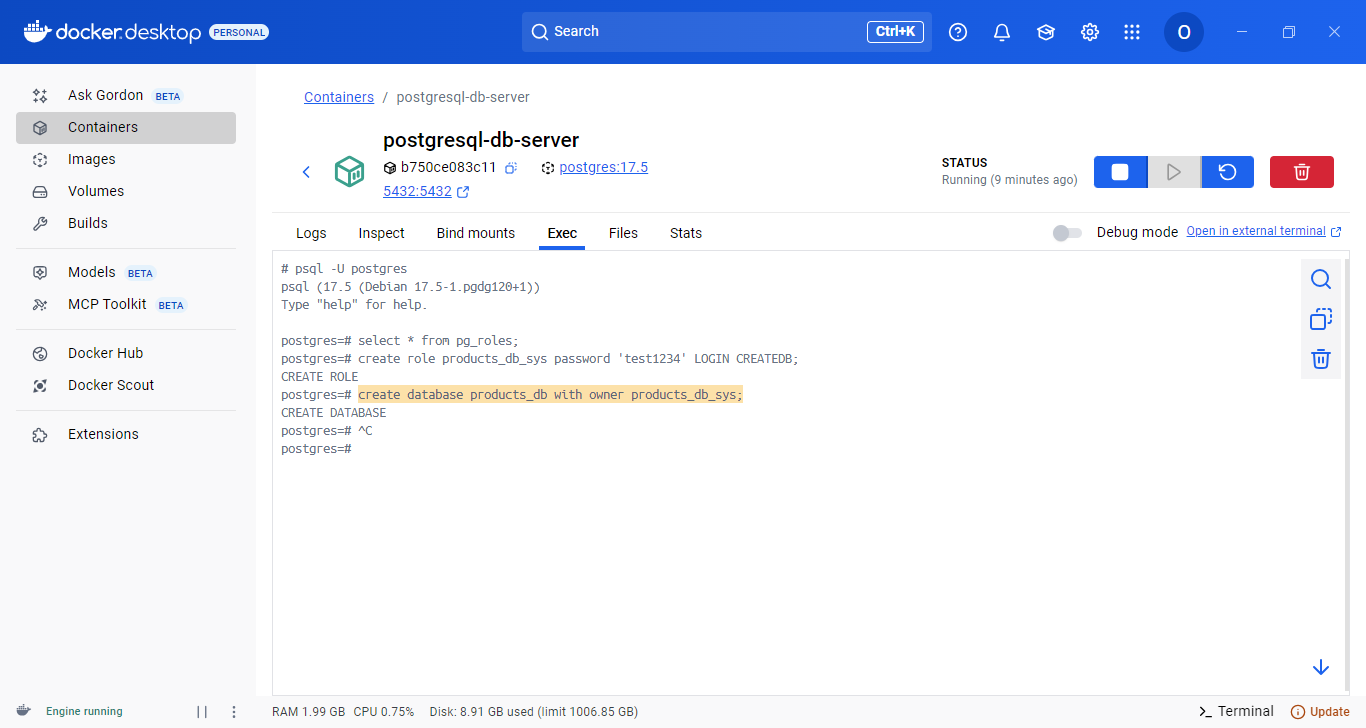
1. Create a new pg\_role (i.e. db user) granting it LOGIN and CREATEDB access.

postgres=# create role products\_db\_sys password 'test1234' LOGIN CREATEDB;



1. Create a new Database with the new pg\_role (db user) as the owner.

postgres=# create database products\_db with owner products\_db\_sys;



1. End session for role named, postgres and quit from psql: \q
2. Reconnect as the new role (db user) named, products\_db\_sys

> psql --username=products\_db\_sys --dbname=products\_db

1. Optional: Create a new schema:

> CREATE SCHEMA inventory;

1. Create table named, products (under the new schema, inventory):

> create table inventory.products (

product\_id int generated always as identity,

name varchar(32),

unit\_price decimal(7,2),

primary key (product\_id));

1. View list of schemas:

products\_db\_sys=# \dn

1. Insert data rows:

> insert into inventory.products (name, unit\_price) values ('Banana', 1.90);

> insert into inventory.products (name, unit\_price) values ('Apple', 0.55);

> insert into inventory.products (name, unit\_price) values ('Carrot', 0.50);

1. Query data from table named, products:

> select \* from products order by name asc;

1. Now, delete the postgresql-db-server container
2. Recreate/re-run the postgresql-db-server container – NOTICE: All data was lost. Why??? No persistence
3. Next, implement Container Data persistence using Bind Mount by recreating and re-running the postgresql-db-server container with the following cmd

> docker run --name postgresql-db-server -d -p 5432:5432 -v C:\\postgresql-db-data:/var/lib/postgresql/data -e POSTGRES\_PASSWORD=Test1234! postgres:17.5

where C:\\postgresql-db-data is a directory created on the host machine’s file system to be bound/mounted to the postgresql data directory, /var/lib/postgresql/data, found in the container’s file system.

1. ...