

INSTITUTO INFNET
ESCOLA SUPERIOR DE TECNOLOGIA
GRADUAÇÃO EM ENGENHARIA DE SOFTWARE



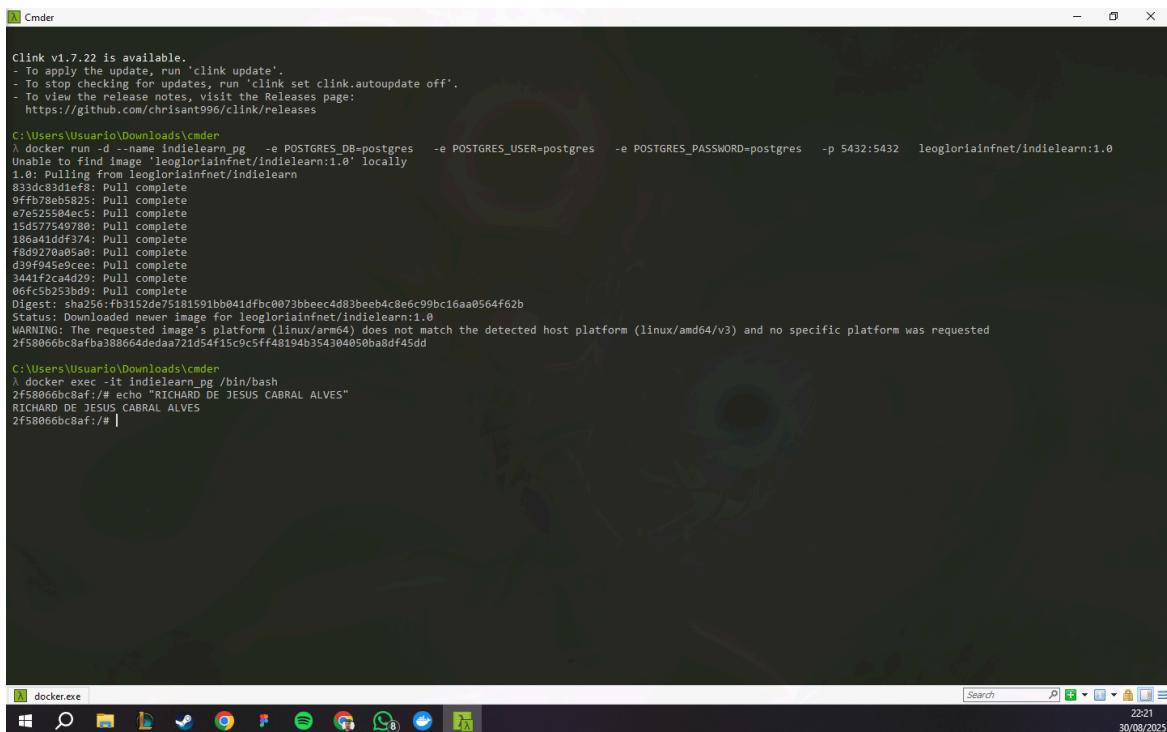
Introdução a Visualização de Dados e SQL

TP 3

Alunos: Richard de Jesus Cabral Alves.

28 de ago. de 2025

Entrando em container

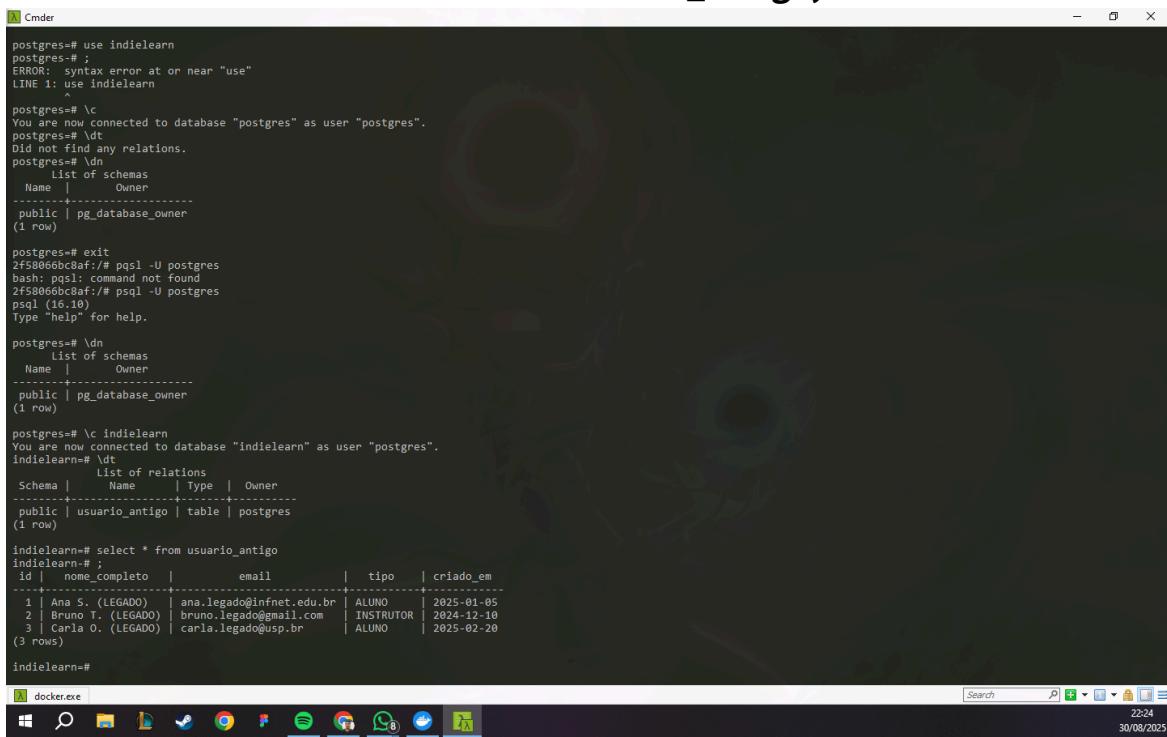


```
Cmder
clink v1.7.22 is available.
- To apply the update, run 'clink update'.
- To stop checking for updates, run 'clink set clink.autoupdate off'.
- To view the release notes, visit the Releases page:
  https://github.com/chrisant996/clink/releases

C:\Users\UsUARIO\Downloads\cmder
λ docker run -d --name indielearn_pg -e POSTGRES_DB=postgres -e POSTGRES_USER=postgres -e POSTGRES_PASSWORD=postgres -p 5432:5432 leogloriainfnet/indelearn:1.0
Unable to find image 'leogloriainfnet/indelearn:1.0' locally
1.0: Pulling from leogloriainfnet/indelearn
833dc83d1ef8: Pull complete
9fffb78eb5825: Pull complete
e7e52584ec5: Pull complete
1516a0a0f374c: Pull complete
f8d9270a05400: Pull complete
d39f945e0ce: Pull complete
3441f2c4ad299: Pull complete
06fc5b253bd99: Pull complete
Digest: sha256:fb3152de75181591b041dfbc0073bbeec4d83beeb4c8e6c99bc16aa0564f62b
Status: Downloaded newer image for leogloriainfnet/indelearn:1.0
WARNING: The requested image's platform (linux/arm64) does not match the detected host platform (linux/amd64/v3) and no specific platform was requested
2f58066bc8afba388664dedaa721d54f15c9c5ff48194b354304050ba8df45dd

C:\Users\UsUARIO\Downloads\cmder
λ docker exec -it indielearn_pg /bin/bash
2f58066bc8af# echo "RICHARD DE JESUS CABRAL ALVES"
RICHARD DE JESUS CABRAL ALVES
2f58066bc8af:/# |
```

select * from usuario_antigo;



```
Cmder
postgres=# use indielearn
postgres# ;
ERROR: syntax error at or near "use"
LINE 1: use indielearn
          ^
postgres# \c
You are now connected to database "postgres" as user "postgres".
postgres# \dt
Did not find any relations.
postgres# \dn
  List of schemas
   Name | Owner
-----+-----
 public | pg_database_owner
(1 row)

postgres# \c exit
2f58066bc8af:# psql -U postgres
bash: psql: command not found
2f58066bc8af:# psql -U postgres
psql (16.10)
Type "help" for help.

postgres# \dn
  List of schemas
   Name | Owner
-----+-----
 public | pg_database_owner
(1 row)

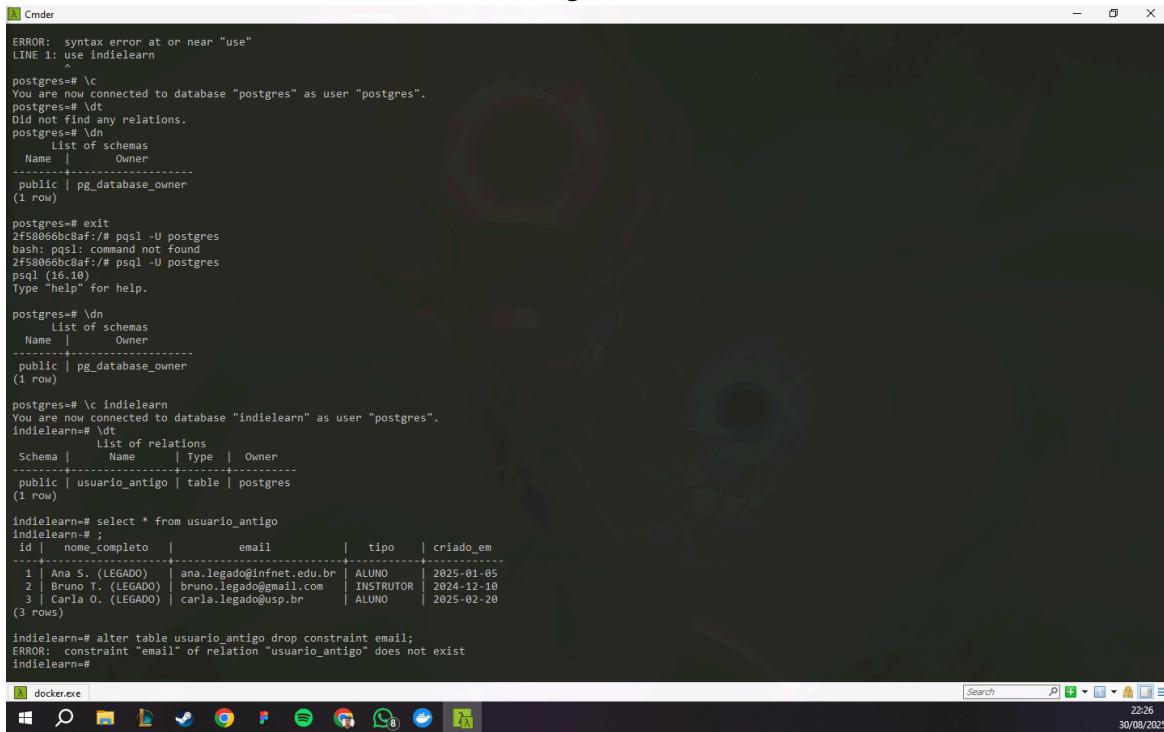
postgres# \c indielearn
You are now connected to database "independente" as user "postgres".
independente# \dt
  List of relations
 Schema |      Name      | Type  | Owner
-----+-----+-----+-----+
 public | usuario_antigo | table | postgres
(1 row)

independente# select * from usuario_antigo
independente# ;
 id | nome_completo |           email | tipo | criado_em
---+-----+-----+-----+-----+
 1 | Ana S. (LEGADO) | ana.legado@infnet.edu.br | ALUNO | 2025-01-05
 2 | Bruno T. (LEGADO) | bruno.legado@gmail.com | INSTRUTOR | 2024-12-10
 3 | Carla O. (LEGADO) | carla.legado@usp.br | ALUNO | 2025-02-20
(3 rows)

independente# 
```

Ato 0 – Banco herdado (Ajustes Iniciais)

ALTER TABLE usuario_antigo DROP CONSTRAINT email;



```
ERROR: syntax error at or near "use"
LINE 1: use indielearn
^
postgres=# \c
You are now connected to database "postgres" as user "postgres".
postgres=# \dt
Did not find any relations.
postgres=# \dn
List of schemas
 Schema | Owner
-----+-----
 public | pg_database_owner
(1 row)

postgres=# exit
2f58066bc8af:# psql -U postgres
bash: psql: command not found
2f58066bc8af:# psql -U postgres
psql (16.10)
Type "help" for help.

postgres=# \dn
List of schemas
 Schema | Owner
-----+-----
 public | pg_database_owner
(1 row)

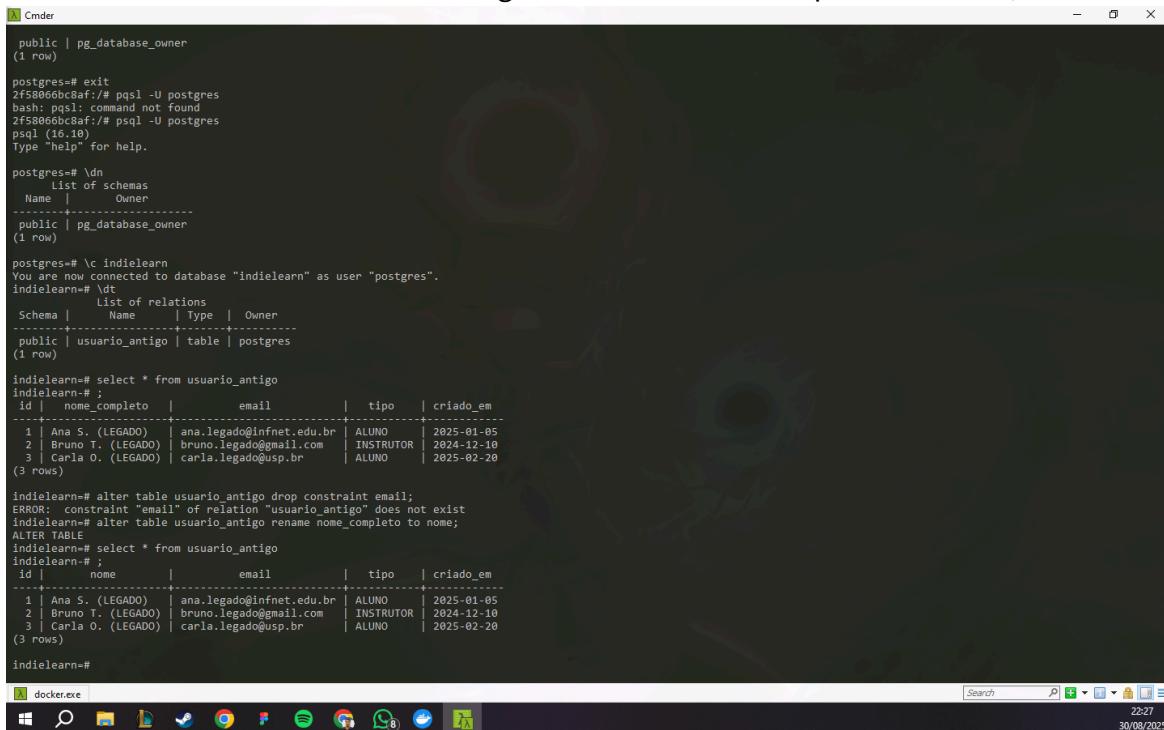
postgres=# \c indielearn
You are now connected to database "indielearn" as user "postgres".
indielearn=# \dt
List of relations
 Schema | Name | Type | Owner
-----+-----+-----+-----
 public | usuario_antigo | table | postgres
(1 row)

indielearn=# select * from usuario_antigo
indielearn=#
 id | nome_completo | email | tipo | criado_em
---+-----+-----+-----+-----
 1 | Ana S. (LEGADO) | ana.legado@infnet.edu.br | ALUNO | 2025-01-05
 2 | Bruno T. (LEGADO) | bruno.legado@gmail.com | INSTRUTOR | 2024-12-10
 3 | Carla O. (LEGADO) | carla.legado@usp.br | ALUNO | 2025-02-20
(3 rows)

indielearn=# alter table usuario_antigo drop constraint email;
ERROR: constraint "email" of relation "usuario_antigo" does not exist
indielearn=#

```

ALTER TABLE usuario_antigo RENAME nome_completo TO nome;



```
public | pg_database_owner
(1 row)

postgres=# exit
2f58066bc8af:# psql -U postgres
bash: psql: command not found
2f58066bc8af:# psql -U postgres
psql (16.10)
Type "help" for help.

postgres=# \dn
List of schemas
 Schema | Owner
-----+-----
 public | pg_database_owner
(1 row)

postgres=# \c indielearn
You are now connected to database "indielearn" as user "postgres".
indielearn=# \dt
List of relations
 Schema | Name | Type | Owner
-----+-----+-----+-----
 public | usuario_antigo | table | postgres
(1 row)

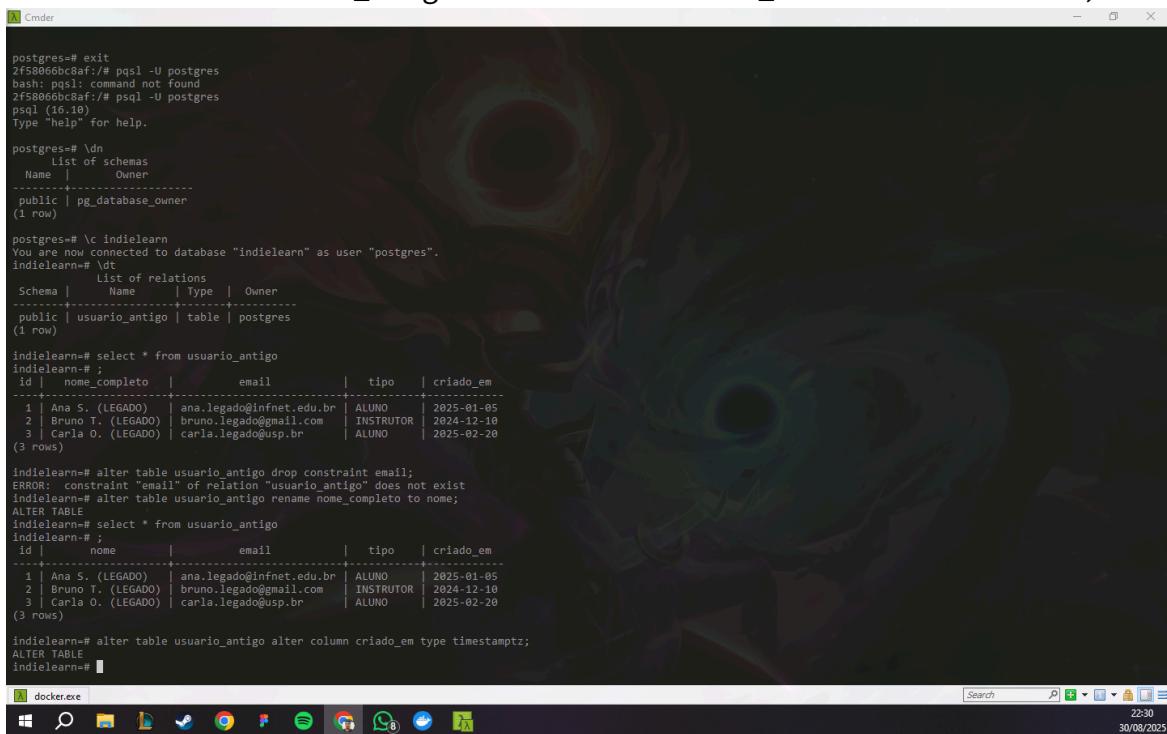
indielearn=# select * from usuario_antigo
indielearn=#
 id | nome_completo | email | tipo | criado_em
---+-----+-----+-----+-----
 1 | Ana S. (LEGADO) | ana.legado@infnet.edu.br | ALUNO | 2025-01-05
 2 | Bruno T. (LEGADO) | bruno.legado@gmail.com | INSTRUTOR | 2024-12-10
 3 | Carla O. (LEGADO) | carla.legado@usp.br | ALUNO | 2025-02-20
(3 rows)

indielearn=# alter table usuario_antigo drop constraint email;
ERROR: constraint "email" of relation "usuario_antigo" does not exist
indielearn=# alter table usuario_antigo rename nome_completo to nome;
ALTER TABLE
indielearn=# select * from usuario_antigo
indielearn=#
 id | nome | email | tipo | criado_em
---+-----+-----+-----+-----
 1 | Ana S. (LEGADO) | ana.legado@infnet.edu.br | ALUNO | 2025-01-05
 2 | Bruno T. (LEGADO) | bruno.legado@gmail.com | INSTRUTOR | 2024-12-10
 3 | Carla O. (LEGADO) | carla.legado@usp.br | ALUNO | 2025-02-20
(3 rows)

indielearn=#

```

```
ALTER TABLE usuario_antigo ALTER COLUMN criado_em TYPE TIMESTAMPTZ;
```



```
postgres=# exit
2f58066bc8af:/# psql -U postgres
bash: psql: command not found
2f58066bc8af:/# psql -U postgres
psql (16.10)
Type "help" for help.

postgres=# \dn
      List of schemas
 Schema |   Name   | Owner
-----+-----+-----+
 public | pg_database_owner
(1 row)

postgres=# \c indielearn
You are now connected to database "indielearn" as user "postgres".
indielearn=# \dt
      List of relations
 Schema |   Name   | Type | Owner
-----+-----+-----+
 public | usuario_antigo | table | postgres
(1 row)

indielearn=# select * from usuario_antigo
indielearn-#
 id | nome_completo | email | tipo | criado_em
---+-----+-----+-----+-----+
 1 | Ana S. (LEGADO) | ana.legado@infnet.edu.br | ALUNO | 2025-01-05
 2 | Bruno T. (LEGADO) | bruno.legado@gmail.com | INSTRUTOR | 2024-12-10
 3 | Carla O. (LEGADO) | carla.legado@usp.br | ALUNO | 2025-02-20
(3 rows)

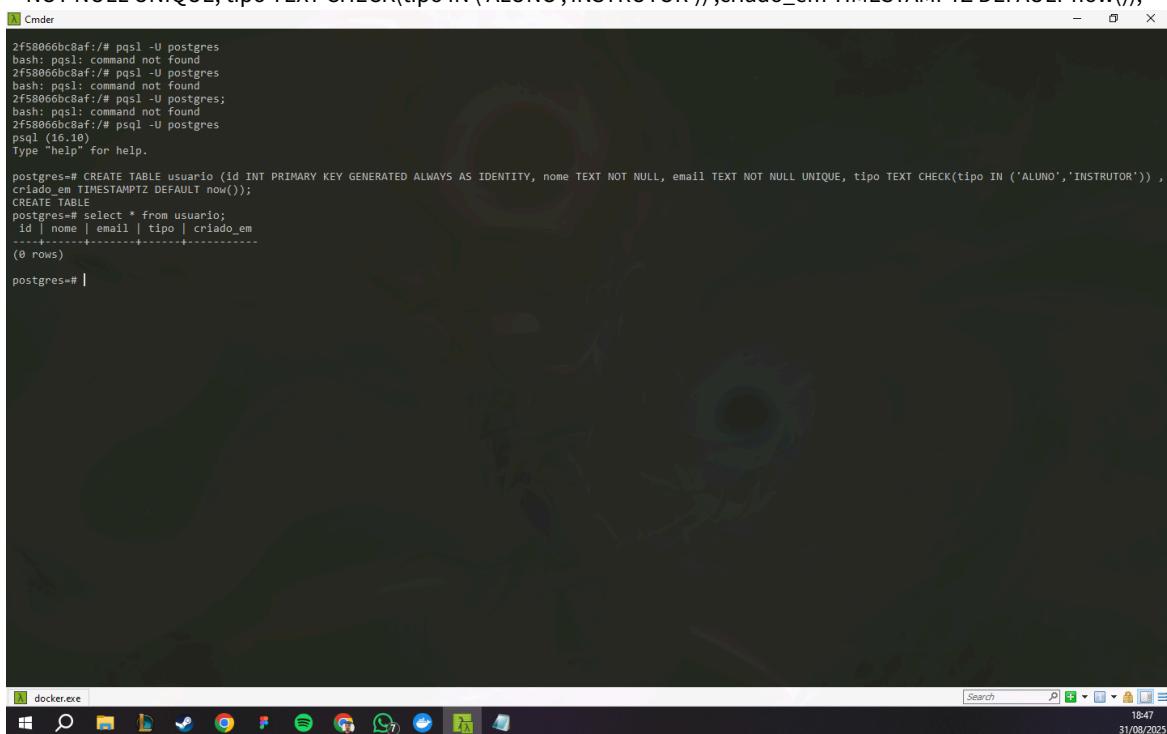
indielearn=# alter table usuario_antigo drop constraint email;
ERROR: constraint "email" of relation "usuario_antigo" does not exist
indielearn=# alter table usuario_antigo rename nome_completo to nome;
ALTER TABLE
indielearn=# select * from usuario_antigo
indielearn-#
 id | nome | email | tipo | criado_em
---+-----+-----+-----+-----+
 1 | Ana S. (LEGADO) | ana.legado@infnet.edu.br | ALUNO | 2025-01-05
 2 | Bruno T. (LEGADO) | bruno.legado@gmail.com | INSTRUTOR | 2024-12-10
 3 | Carla O. (LEGADO) | carla.legado@usp.br | ALUNO | 2025-02-20
(3 rows)

indielearn=# alter table usuario_antigo alter column criado_em type timestamptz;
ALTER TABLE
indielearn=#

```

Ato 1 – O Alicerce (Modelagem e DDL)

```
CREATE TABLE usuario (id INT PRIMARY KEY GENERATED ALWAYS AS IDENTITY, nome TEXT NOT NULL, email TEXT NOT NULL UNIQUE, tipo TEXT CHECK(tipo IN ('ALUNO','INSTRUTOR')) ,criado_em TIMESTAMPTZ DEFAULT now());
```



```
postgres=# exit
2f58066bc8af:/# psql -U postgres
bash: psql: command not found
2f58066bc8af:/# psql -U postgres
bash: psql: command not found
2f58066bc8af:/# psql -U postgres
bash: psql: command not found
2f58066bc8af:/# psql -U postgres
psql (16.10)
Type "help" for help.

postgres=# CREATE TABLE usuario (id INT PRIMARY KEY GENERATED ALWAYS AS IDENTITY, nome TEXT NOT NULL, email TEXT NOT NULL UNIQUE, tipo TEXT CHECK(tipo IN ('ALUNO','INSTRUTOR')) ,
criado_em TIMESTAMPTZ DEFAULT now());
CREATE TABLE
postgres=# select * from usuario;
 id | nome | email | tipo | criado_em
---+-----+-----+-----+-----+
(0 rows)

postgres=#

```

```
CREATE TABLE curso (id INT PRIMARY KEY GENERATED ALWAYS AS IDENTITY, titulo TEXT NOT NULL, categoria TEXT
NOT NULL, nivel TEXT NOT NULL CHECK(nivel IN('inic','inter','avanc')), preco NUMERIC CHECK(preco >= 0),
publicado_em DATE, instrutor_id BIGINT);
```

```
2f58066bc8af:/# psql -U postgres
bash: pgsql: command not found
2f58066bc8af:/# psql -U postgres
bash: pgsql: command not found
2f58066bc8af:/# psql -U postgres;
bash: psql: command not found
2f58066bc8af:/# psql -U postgres
psql (16.10)
Type "help" for help.

postgres=# CREATE TABLE usuario (id INT PRIMARY KEY GENERATED ALWAYS AS IDENTITY, nome TEXT NOT NULL, email TEXT NOT NULL UNIQUE, tipo TEXT CHECK(tipo IN ('ALUNO','INSTRUTOR')) ,
criado_em TIMESTAMPTZ DEFAULT now());
CREATE TABLE
postgres=# select * from usuario;
 id | nome | email | tipo | criado_em
----+-----+-----+-----+-----
(0 rows)

postgres=# CREATE TABLE curso (id INT PRIMARY KEY GENERATED ALWAYS AS IDENTITY, titulo TEXT NOT NULL, categoria TEXT NOT NULL, nivel TEXT NOT NULL CHECK(nivel IN('inic','inter','avanc')), preco NUMERIC CHECK(preco >= 0), publicado_em DATE, instrutor_id BIGINT);
CREATE TABLE
postgres=# select * from curso;
 id | titulo | categoria | nivel | preco | publicado_em | instrutor_id
----+-----+-----+-----+-----+-----+-----
(0 rows)

postgres=#

```

```
CREATE TABLE pagamento (id INT PRIMARY KEY GENERATED ALWAYS AS IDENTITY, matricula_id BIGINT, valor_pago NUMERIC
CHECK(valor_pago >= 0), realizado_em TIMESTAMPTZ, meio TEXT CHECK(meio IN('PIX','CARTAO','BOLETO')), status TEXT
CHECK(status IN('OK','FALHA')));
```

```
2f58066bc8af:/# psql -U postgres
bash: pgsql: command not found
2f58066bc8af:/# psql -U postgres
bash: pgsql: command not found
2f58066bc8af:/# psql -U postgres;
bash: psql: command not found
2f58066bc8af:/# psql -U postgres
psql (16.10)
Type "help" for help.

postgres=# CREATE TABLE usuario (id INT PRIMARY KEY GENERATED ALWAYS AS IDENTITY, nome TEXT NOT NULL, email TEXT NOT NULL UNIQUE, tipo TEXT CHECK(tipo IN ('ALUNO','INSTRUTOR')) ,
criado_em TIMESTAMPTZ DEFAULT now());
CREATE TABLE
postgres=# select * from usuario;
 id | nome | email | tipo | criado_em
----+-----+-----+-----+-----
(0 rows)

postgres=# CREATE TABLE curso (id INT PRIMARY KEY GENERATED ALWAYS AS IDENTITY, titulo TEXT NOT NULL, categoria TEXT NOT NULL, nivel TEXT NOT NULL CHECK(nivel IN('inic','inter','avanc')), preco NUMERIC CHECK(preco >= 0), publicado_em DATE, instrutor_id BIGINT);
CREATE TABLE
postgres=# select * from curso;
 id | titulo | categoria | nivel | preco | publicado_em | instrutor_id
----+-----+-----+-----+-----+-----+-----
(0 rows)

postgres=# CREATE TABLE pagamento (id INT PRIMARY KEY GENERATED ALWAYS AS IDENTITY, matricula_id BIGINT, valor_pago NUMERIC CHECK(valor_pago >= 0), realizado_em TIMESTAMPTZ, meio
TEXT CHECK(meio IN('PIX','CARTAO','BOLETO')), status TEXT CHECK(status IN('OK','FALHA')));
CREATE TABLE
postgres=# select * from pagamento;
 id | matricula_id | valor_pago | realizado_em | meio | status
----+-----+-----+-----+-----+-----
(0 rows)

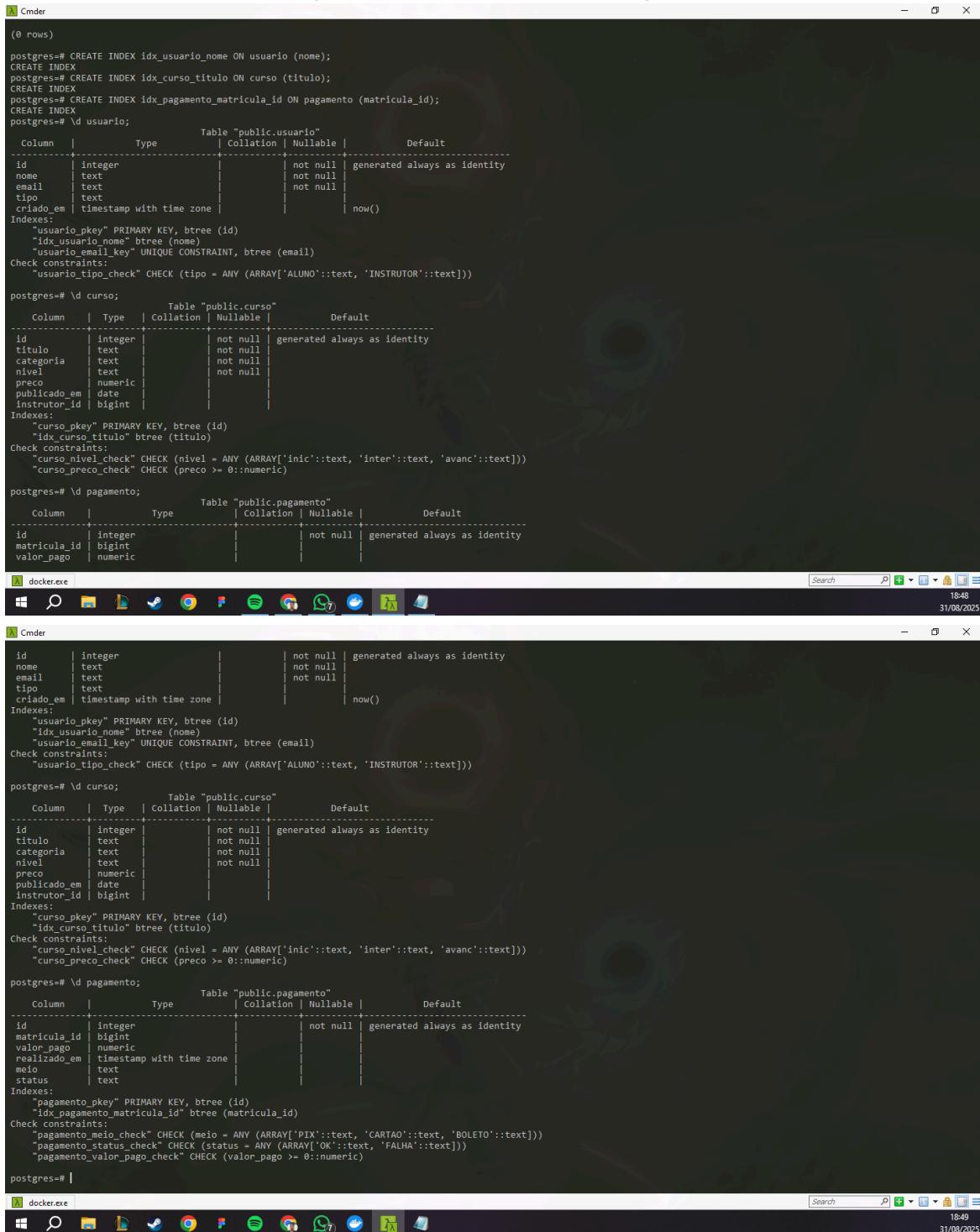
postgres=#

```

```

CREATE INDEX idx_usuario_nome ON usuario (nome);
CREATE INDEX idx_curso_titulo ON curso (titulo);
CREATE INDEX idx_pagamento_matricula_id ON pagamento (matricula_id);

```



The image shows a Windows desktop environment with two terminal windows open in the background. The top terminal window is titled 'Cmdr' and displays PostgreSQL commands for creating indexes and listing table structures for 'usuario', 'curso', and 'pagamento' tables. The bottom terminal window is also titled 'Cmdr' and shows the same commands being run again. The taskbar at the bottom of the screen contains icons for various applications like File Explorer, Task View, and system tools.

```

Cmdr
(0 rows)

postgres=# CREATE INDEX idx_usuario_nome ON usuario (nome);
CREATE INDEX
postgres=# CREATE INDEX idx_curso_titulo ON curso (titulo);
CREATE INDEX
postgres=# CREATE INDEX idx_pagamento_matricula_id ON pagamento (matricula_id);
CREATE INDEX
postgres=# \d usuario;
Table "public.usuario"
 Column | Type | Collation | Nullable | Default
-----+-----+-----+-----+-----+
 id    | integer |          | not null | generated always as identity
 nome  | text   |          | not null |
 email | text   |          | not null |
 titulo| text   |          | not null |
 criado_em | timestamp with time zone |          | now()
Indexes:
 "usuario_pkey" PRIMARY KEY, btree (id)
 "idx_usuario_nome" btree (nome)
 "usuario_email_key" UNIQUE CONSTRAINT, btree (email)
Check constraints:
 "usuario_tipo_check" CHECK (tipo = ANY (ARRAY['ALUNO)::text, 'INSTRUTOR)::text))
postgres=# \d curso;
Table "public.curso"
 Column | Type | Collation | Nullable | Default
-----+-----+-----+-----+-----+
 id    | integer |          | not null | generated always as identity
 titulo| text   |          | not null |
 categoria| text   |          | not null |
 nivel  | text   |          | not null |
 preco   | numeric |          | not null |
 publicado_em | date |          |          |
 instrutor_id | bigint |          |          |
Indexes:
 "curso_pkey" PRIMARY KEY, btree (id)
 "idx_curso_titulo" btree (titulo)
Check constraints:
 "curso_nivel_check" CHECK (nivel = ANY (ARRAY['inic'::text, 'inter'::text, 'avanc'::text]))
 "curso_preco_check" CHECK (preco > 0::numeric)
postgres=# \d pagamento;
Table "public.pagamento"
 Column | Type | Collation | Nullable | Default
-----+-----+-----+-----+-----+
 id    | integer |          | not null | generated always as identity
 matricula_id | bigint |          | not null |
 valor_pago | numeric |          |          |
Indexes:
 "pagamento_pkey" PRIMARY KEY, btree (id)
 "idx_pagamento_matricula_id" btree (matricula_id)
Check constraints:
 "pagamento_meio_check" CHECK (meio = ANY (ARRAY['PIX'::text, 'CARTAO'::text, 'BOLETO'::text]))
 "pagamento_status_check" CHECK (status = ANY (ARRAY['OK'::text, 'FALHA'::text]))
 "pagamento_valor_pago_check" CHECK (valor_pago >= 0::numeric)
postgres=#

```

Ato 2 – Inserts manuais

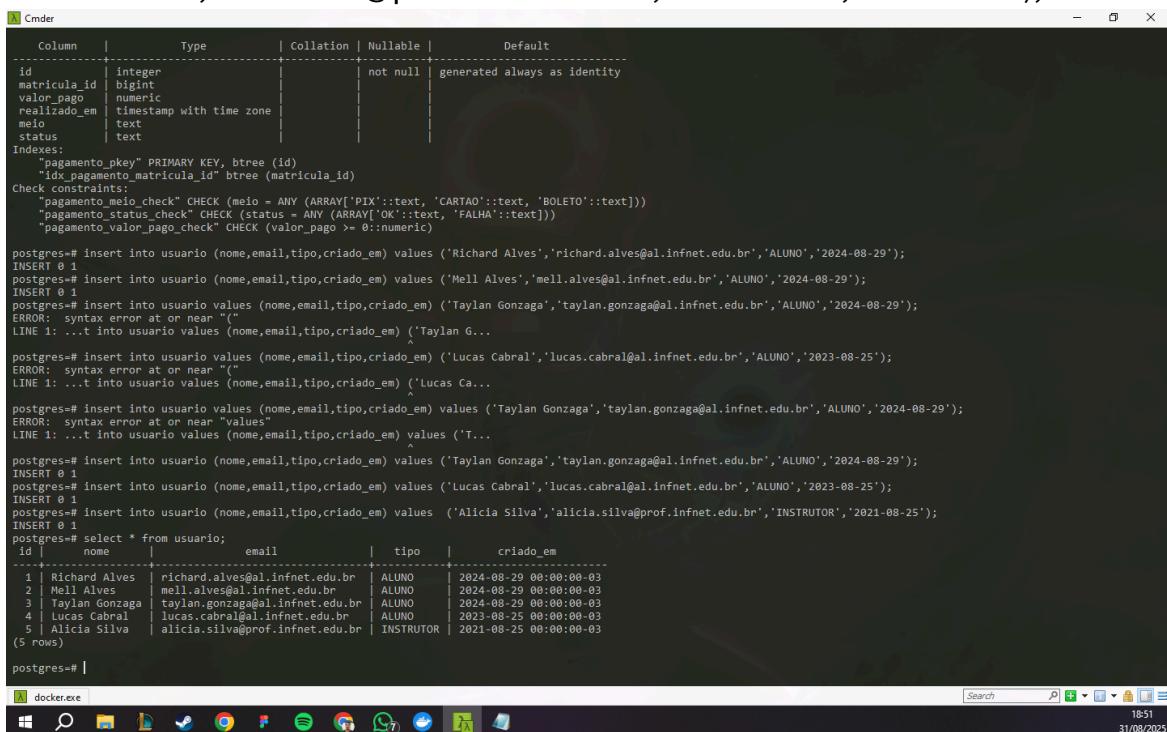
```
insert into usuario (nome,email,tipo,criado_em) values ('Richard Alves','richard.alves@al.infnet.edu.br','ALUNO','2024-08-29');
```

```
insert into usuario (nome,email,tipo,criado_em) values ('Mell Alves','mell.alves@al.infnet.edu.br','ALUNO','2024-08-29');
```

```
insert into usuario (nome,email,tipo,criado_em) values ('Taylan Gonzaga','taylan.gonzaga@al.infnet.edu.br','ALUNO','2024-08-29');
```

```
insert into usuario (nome,email,tipo,criado_em) values ('Lucas Cabral','lucas.cabral@al.infnet.edu.br','ALUNO','2023-08-25');
```

```
insert into usuario (nome,email,tipo,criado_em) values ('Alicia Silva','alicia.silva@prof.infnet.edu.br','INSTRUTOR','2021-08-25');
```



```
psql (15.5 (Ubuntu 15.5-0ubuntu0.22.04.1))
Type "help" for help.

CREATE TABLE pagamento (
    id integer,
    matricula_id bigint,
    valor_pago numeric,
    realizado_em timestamp with time zone,
    meio text,
    status text
)
Indexes:
    "pagamento_pkey" PRIMARY KEY, btree (id)
    "idx_pagamento_matricula_id" btree (matricula_id)
Check constraints:
    "pagamento_meio_check" CHECK (meio = ANY (ARRAY['PIX'::text, 'CARTAO'::text, 'BOLETO'::text]))
    "pagamento_status_check" CHECK (status = ANY (ARRAY['OK'::text, 'FALHA'::text]))
    "pagamento_valor_pago_check" CHECK (valor_pago >= 0::numeric)

postgres# insert into usuario (nome,email,tipo,criado_em) values ('Richard Alves','richard.alves@al.infnet.edu.br','ALUNO','2024-08-29');
INSERT 0 1
postgres# insert into usuario (nome,email,tipo,criado_em) values ('Mell Alves','mell.alves@al.infnet.edu.br','ALUNO','2024-08-29');
INSERT 0 1
postgres# insert into usuario values (nome,email,tipo,criado_em) ('Taylan Gonzaga','taylan.gonzaga@al.infnet.edu.br','ALUNO','2024-08-29');
ERROR: syntax error at or near "("
LINE 1: ...t into usuario values (nome,email,tipo,criado_em) ('Taylan G...
^
postgres# insert into usuario values (nome,email,tipo,criado_em) ('Lucas Cabral','lucas.cabral@al.infnet.edu.br','ALUNO','2023-08-25');
ERROR: syntax error at or near "("
LINE 1: ...t into usuario values (nome,email,tipo,criado_em) ('Lucas Ca...
^
postgres# insert into usuario values (nome,email,tipo,criado_em) values ('Taylan Gonzaga','taylan.gonzaga@al.infnet.edu.br','ALUNO','2024-08-29');
ERROR: syntax error at or near "values"
LINE 1: ...t into usuario values (nome,email,tipo,criado_em) values ('T...
^
postgres# insert into usuario (nome,email,tipo,criado_em) values ('Taylan Gonzaga','taylan.gonzaga@al.infnet.edu.br','ALUNO','2024-08-29');
INSERT 0 1
postgres# insert into usuario (nome,email,tipo,criado_em) values ('Lucas Cabral','lucas.cabral@al.infnet.edu.br','ALUNO','2023-08-25');
INSERT 0 1
postgres# insert into usuario (nome,email,tipo,criado_em) values ('Alicia Silva','alicia.silva@prof.infnet.edu.br','INSTRUTOR','2021-08-25');
INSERT 0 1
postgres# select * from usuario;
   id   |      nome      |          email           | tipo | criado_em
-----+----------------+---------------------+-----+--------------
  1 | Richard Alves | richard.alves@al.infnet.edu.br | ALUNO | 2024-08-29 00:00:00-03
  2 | Mell Alves    | mell.alves@al.infnet.edu.br | ALUNO | 2024-08-29 00:00:00-03
  3 | Taylan Gonzaga| taylan.gonzaga@al.infnet.edu.br | ALUNO | 2024-08-29 00:00:00-03
  4 | Lucas Cabral  | lucas.cabral@al.infnet.edu.br | ALUNO | 2023-08-25 00:00:00-03
  5 | Alicia Silva  | alicia.silva@prof.infnet.edu.br | INSTRUTOR | 2021-08-25 00:00:00-03
(5 rows)
```

```
insert into curso (titulo, categoria, nivel, preco, publicado_em, instrutor_id)
values ('Engenharia de Software','Tecnologia da
Informacao','inter',1200,'2019-01-30',5);
```

```
insert into curso (titulo, categoria, nivel, preco, publicado_em, instrutor_id)
values ('Engenharia da Computacao','Tecnologia da
Informacao','avanc',1800,'2017-06-30',5);
```

```
insert into curso (titulo, categoria, nivel, preco, publicado_em, instrutor_id)
values ('Analise e Desenvolvimento de Sistemas','Tecnologia da
Informacao','inic',1000,'2019-03-30',5);
```

```
insert into curso (titulo, categoria, nivel, preco, publicado_em, instrutor_id)
values ('Analise de Dados','Tecnologia da Informacao','inic',800,'2012-08-30',5);
```

```
insert into curso (titulo, categoria, nivel, preco, publicado_em, instrutor_id)
values ('Curso de GitHub','DevOps','inic',600,'2012-08-30',5)
```

```
postgres# insert into curso (titulo, categoria, nivel, preco, publicado_em, instrutor_id) values ('Engenharia da Computacao','Tecnologia da Informacao','avanc',1800,'2017-06-30',5);
INSERT 0 1
postgres# insert into curso (titulo, categoria, nivel, preco, publicado_em, instrutor_id) values ('Analise e Desenvolvimento de Sistemas','Tecnologia da Informacao','inic',1000,'2019-03-30',5);
INSERT 0 1
postgres# insert into curso (titulo, categoria, nivel, preco, publicado_em, instrutor_id) values ('Analise de Dados','Tecnologia da Informacao','inic',800,'2012-08-30',5);
INSERT 0 1
postgres# insert into curso (titulo, categoria, nivel, preco, publicado_em, instrutor_id) values ('Analise de Dados','Tecnologia da Informacao','inic',800,'2012-08-30',5);
ERROR: syntax error at or near "values"
LINE 1: ...goria, nivel, preco, publicado_em, instrutor_id) values ('A...
^
postgres# insert into curso (titulo, categoria, nivel, preco, publicado_em, instrutor_id) values ('Analise de Dados','Tecnologia da Informacao','inic',800,'2012-08-30',5);
ERROR: syntax error at or near "values"
LINE 1: ...goria, nivel, preco, publicado_em, instrutor_id) values ('A...
^
postgres# insert into curso (titulo, categoria, nivel, preco, publicado_em, instrutor_id) values ('Analise de Dados','Tecnologia da Informacao','inic',800,'2012-08-30',5);
ERROR: syntax error at or near "values"
LINE 1: ...goria, nivel, preco, publicado_em, instrutor_id) values ('A...
^
postgres# insert into curso (titulo, categoria, nivel, preco, publicado_em, instrutor_id) values ('Analise de Dados','Tecnologia da Informacao','inic',800,'2012-08-30',5);
INSERT 0 1
postgres# insert into curso (titulo, categoria, nivel, preco, publicado_em, instrutor_id) values ('Curso de GitHub','DevOps','inic',600,'2012-08-30',5);
ERROR: syntax error at or near "values"
LINE 1: ...vel, preco, publicado_em, instrutor_id) values ('Curso de ...
^
postgres# insert into curso (titulo, categoria, nivel, preco, publicado_em, instrutor_id) values ('Curso de GitHub','DevOps','inic',600,'2012-08-30',5);
INSERT 0 1
postgres# select * from curso;
SELECT id, titulo, categoria, nivel, preco, publicado_em, instrutor_id
   FROM curso
   ORDER BY id
(5 rows)
postgres#
```

The screenshot shows a terminal window titled 'Cmder' running on a Windows desktop. The terminal content is a series of PostgreSQL commands and their results. It includes several failed 'INSERT' statements due to syntax errors (missing commas after values), followed by a successful 'SELECT * from curso' command which returns five rows of data:

	id	titulo	categoria	nivel	preco	publicado_em	instrutor_id
1	1	Engenharia de Software	Tecnologia da Informacao	inter	1200	2019-01-30	5
2	2	Engenharia da Computacao	Tecnologia da Informacao	avanc	1800	2017-06-30	5
3	3	Analise e Desenvolvimento de Sistemas	Tecnologia da Informacao	inic	1000	2019-03-30	5
4	4	Analise de Dados	Tecnologia da Informacao	inic	800	2012-08-30	5
5	5	Curso de GitHub	DevOps	inic	600	2012-08-30	5

The desktop taskbar at the bottom shows icons for various applications like Docker, File Explorer, and a browser.

```
insert into pagamento (matricula_id, valor_pago, realizado_em, meio, status)
values (1,1250,'2020-01-02','CARTAO','OK');
```

```
insert into pagamento (matricula_id, valor_pago, realizado_em, meio, status)
values (2,875,'2024-05-30','PIX','OK');
```

```
insert into pagamento (matricula_id, valor_pago, realizado_em, meio, status)
values (3,5500,'2025-04-21','PIX','FALHA');
```

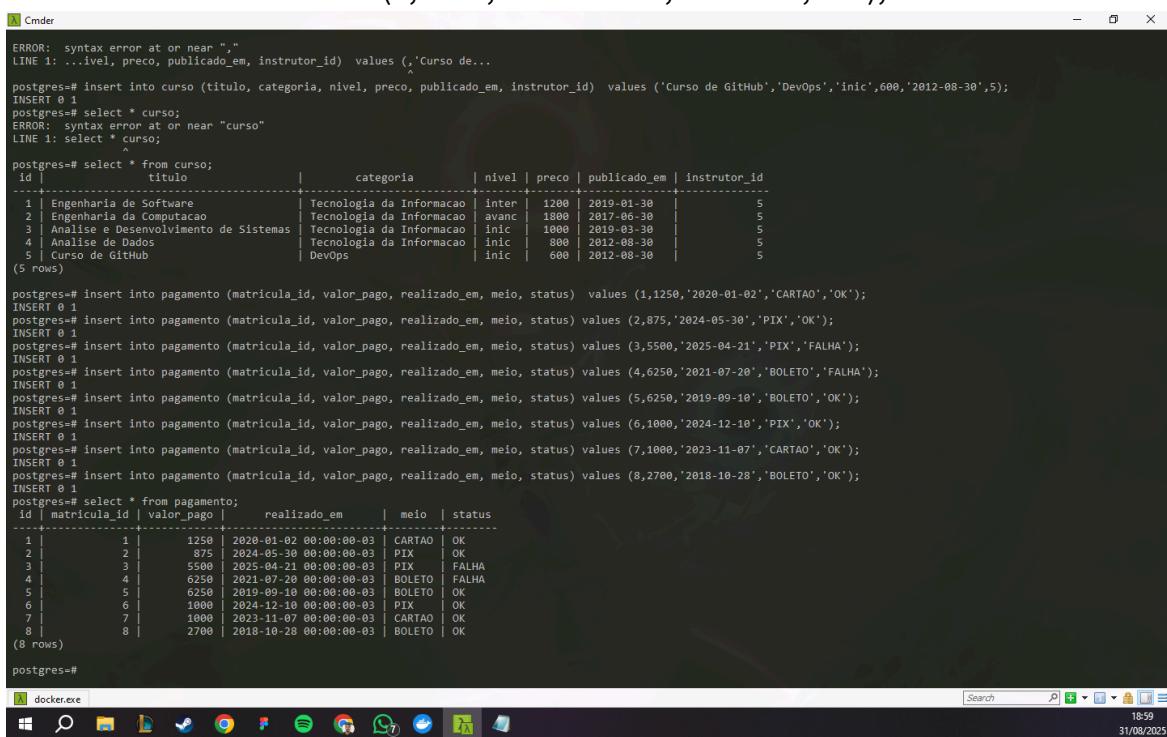
```
insert into pagamento (matricula_id, valor_pago, realizado_em, meio, status)
values (4,6250,'2021-07-20','BOLETO','FALHA');
```

```
insert into pagamento (matricula_id, valor_pago, realizado_em, meio, status)
values (5,6250,'2019-09-10','BOLETO','OK');
```

```
insert into pagamento (matricula_id, valor_pago, realizado_em, meio, status)
values (6,1000,'2024-12-10','PIX','OK');
```

```
insert into pagamento (matricula_id, valor_pago, realizado_em, meio, status)
values (7,1000,'2023-11-07','CARTAO','OK');
```

```
insert into pagamento (matricula_id, valor_pago, realizado_em, meio, status)
values (8,2700,'2018-10-28','BOLETO','OK');
```



```
psql (14.5 (Ubuntu 14.5-0ubuntu0.20.04.1))
Type "help" for help.

ERROR:  syntax error at or near "."
LINE 1: ...ivel, preco, publicado_em, instrutor_id)  values ('...Curso de...
          ^
INSERT 0 1
postgres# select * from curso;
ERROR:  syntax error at or near "curso"
LINE 1: select * from curso;
          ^
postgres# select * from curso;
Id | Titulo           | categoria      | nivel | preco | publicado_em | instrutor_id
--+
1  | Engenharia de Software | Tecnologia da Informacao | inter | 1200 | 2019-01-30 | 5
2  | Engenharia da Computacao | Tecnologia da Informacao | avanc | 1800 | 2017-06-30 | 5
3  | Analise e Desenvolvimento de Sistemas | Tecnologia da Informacao | inic | 1000 | 2019-03-30 | 5
4  | Analise de Dados | Tecnologia da Informacao | inic | 800 | 2012-08-30 | 5
5  | Curso de GitHub | DevOps          | inic | 600 | 2012-08-30 | 5
(5 rows)

postgres# insert into pagamento (matricula_id, valor_pago, realizado_em, meio, status) values (1,1250,'2020-01-02','CARTAO','OK');
INSERT 0 1
postgres# insert into pagamento (matricula_id, valor_pago, realizado_em, meio, status) values (2,875,'2024-05-30','PIX','OK');
INSERT 0 1
postgres# insert into pagamento (matricula_id, valor_pago, realizado_em, meio, status) values (3,5500,'2025-04-21','PIX','FALHA');
INSERT 0 1
postgres# insert into pagamento (matricula_id, valor_pago, realizado_em, meio, status) values (4,6250,'2021-07-20','BOLETO','FALHA');
INSERT 0 1
postgres# insert into pagamento (matricula_id, valor_pago, realizado_em, meio, status) values (5,6250,'2019-09-10','BOLETO','OK');
INSERT 0 1
postgres# insert into pagamento (matricula_id, valor_pago, realizado_em, meio, status) values (6,1000,'2024-12-10','PIX','OK');
INSERT 0 1
postgres# insert into pagamento (matricula_id, valor_pago, realizado_em, meio, status) values (7,1000,'2023-11-07','CARTAO','OK');
INSERT 0 1
postgres# insert into pagamento (matricula_id, valor_pago, realizado_em, meio, status) values (8,2700,'2018-10-28','BOLETO','OK');
INSERT 0 1
postgres# select * from pagamento;
Id | matricula_id | valor_pago | realizado_em | meio | status
--+
1  | 1            | 1250       | 2020-01-02 00:00:00-03 | CARTAO | OK
2  | 2            | 875        | 2024-05-30 00:00:00-03 | PIX    | OK
3  | 3            | 5500       | 2025-04-21 00:00:00-03 | PIX    | FALHA
4  | 4            | 6250       | 2021-07-20 00:00:00-03 | BOLETO | FALHA
5  | 5            | 6250       | 2019-09-10 00:00:00-03 | BOLETO | OK
6  | 6            | 1000       | 2024-12-10 00:00:00-03 | PIX    | OK
7  | 7            | 1000       | 2023-11-07 00:00:00-03 | CARTAO | OK
8  | 8            | 2700       | 2018-10-28 00:00:00-03 | BOLETO | OK
(8 rows)
```

Ato 3 – A Enxurrada de Dados (Bulk Load)

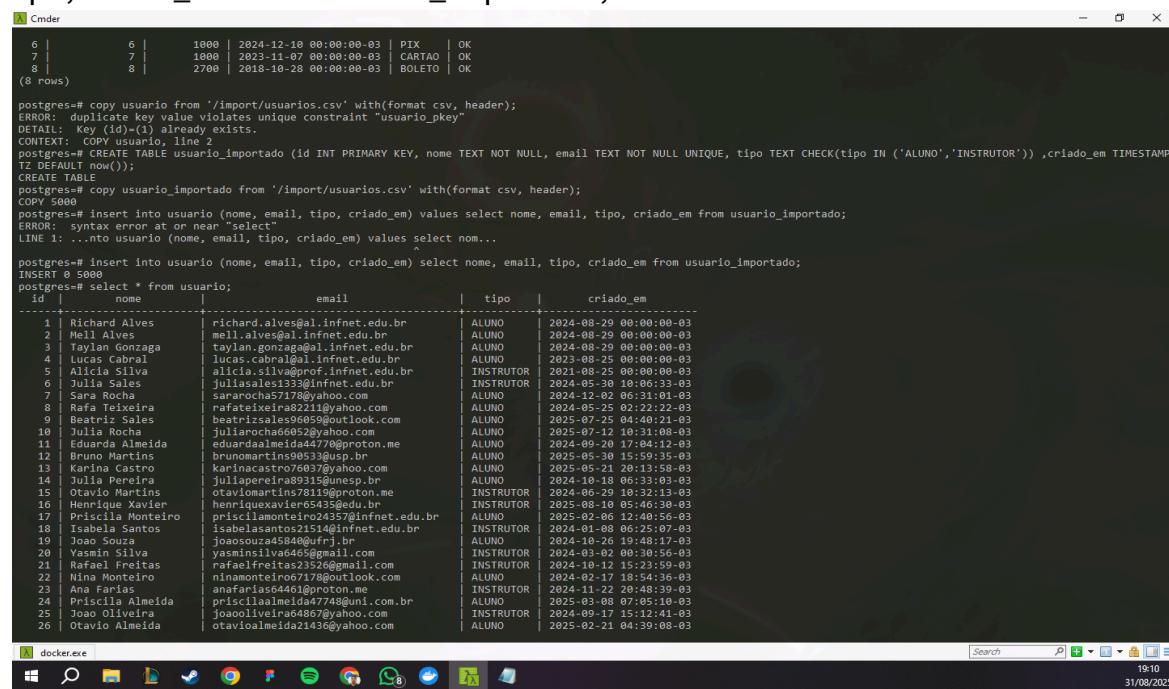
Nesse exercício de popular o banco, estava com problemas de duplicidade de dados de Primary Key, sendo assim, minha resolução foi pegar uma nova tabela usuario_importado, pegar esses dados com todas as colunas, incluindo os ids do csv, e depois pegar os dados da tabela usuario_importado e transferi-los para a tabela primaria que é o usuario.

A mesma coisa será feita com as tabelas curso e pagamento, e depois de todas as tabelas primarias com os bancos populados do csv, serão feitos drop tables para as tabelas suportes, para evitar de deixar o banco de dados com tabelas ‘inúteis’.

```
CREATE TABLE usuario_importado (id INT PRIMARY KEY, nome TEXT NOT NULL, email TEXT NOT NULL UNIQUE, tipo TEXT CHECK(tipo IN ('ALUNO','INSTRUTOR')) ,criado_em TIMESTAMPTZ DEFAULT now());
```

```
copy usuario_importado from '/import/usuarios.csv' with(format csv, header)
```

```
insert into usuario (nome, email, tipo, criado_em) select nome, email, tipo, criado_em from usuario_importado;
```



```
psql (15.5 (Ubuntu 15.5-0ubuntu0.22.04.1))
Type "help" for help.

psql: Cmder
(8 rows)

postgres=# copy usuario from '/import/usuarios.csv' with(format csv, header);
ERROR: duplicate key value violates unique constraint "usuario_pkey"
DETAIL: Key (id)=(1) already exists.
CONTEXT: COPY usuario, line 2
pos=258
CREATE TABLE usuario_importado (id INT PRIMARY KEY, nome TEXT NOT NULL, email TEXT NOT NULL UNIQUE, tipo TEXT CHECK(tipo IN ('ALUNO','INSTRUTOR')) ,criado_em TIMESTAMPTZ DEFAULT now());
COPY 5000
postgres# insert into usuario (nome, email, tipo, criado_em) values select nome, email, tipo, criado_em from usuario_importado;
ERROR: syntax error at or near "select"
LINE 1: ...nto usuario (nome, email, tipo, criado_em) values select nom...
^
postgres# insert into usuario (nome, email, tipo, criado_em) select nome, email, tipo, criado_em from usuario_importado;
INSERT 0 5000
postgres# select * from usuario;
 id | nome          | email           | tipo | criado_em
----+-----+-----+-----+-----+
  1 | Richard Alves | richard.alves@1.infnet.edu.br | ALUNO | 2024-08-29 00:00:00-03
  2 | Mell Alves   | mell.alves@1.infnet.edu.br | ALUNO | 2024-08-29 00:00:00-03
  3 | Taylan Gonzaga | taylan.gonzaga@1.infnet.edu.br | ALUNO | 2024-08-29 00:00:00-03
  4 | Lucas Cabral  | lucas.cabral@1.infnet.edu.br | ALUNO | 2023-08-25 00:00:00-03
  5 | Alicia Silva  | alicia.silva@prof.infnet.edu.br | INSTRUTOR | 2021-08-25 00:00:00-03
  6 | Julia Sales   | juliasales133@infnet.edu.br | INSTRUTOR | 2024-05-30 10:06:33-03
  7 | Sara Rocha    | sararocha517@ yahoo.com | ALUNO | 2024-12-02 06:31:01-03
  8 | Rafa Telheira | rafaeltelheira221@yahoo.com | ALUNO | 2024-07-07 02:48:21-03
  9 | Andreia Freitas | andreiafreitas89@outlook.com | ALUNO | 2025-07-25 10:48:21-03
 10 | Julia Rocha   | juliarocha66052@yahoo.com | ALUNO | 2025-07-12 10:31:08-03
 11 | Eduarda Almeida | eduardaalmeida44770@proton.me | ALUNO | 2024-09-20 17:04:12-03
 12 | Bruno Martins  | brunomartins00533@usp.br | ALUNO | 2025-05-30 15:59:35-03
 13 | Karina Castro  | karinacastro76037@yahoo.com | ALUNO | 2025-05-21 20:13:58-03
 14 | Julia Pereira  | juliapereira89315@unesp.br | ALUNO | 2024-10-18 06:33:03-03
 15 | Otavio Martins  | otaviomartins78110@proton.me | INSTRUTOR | 2024-06-29 10:32:13-03
 16 | Priscila Monteiro | priscilamonteiro24257@infnet.edu.br | INSTRUTOR | 2024-07-12 10:40:56-03
 17 | Isabela Santos  | isabelasantos21514@infnet.edu.br | INSTRUTOR | 2024-01-08 06:25:07-03
 18 | Joao Souza    | joaosouza45840@ufrj.br | ALUNO | 2024-10-26 19:48:17-03
 19 | Rafael Freitas | rafaelfreitas23526@gmail.com | INSTRUTOR | 2024-03-02 00:30:56-03
 20 | Yasmin Silva   | yasminsilva6465@gmail.com | INSTRUTOR | 2024-10-12 15:23:59-03
 21 | Nino Monteiro  | ninamonteiro67178@outlook.com | ALUNO | 2024-02-19 18:54:36-03
 22 | Priscilla Almeida | priscillalameida777@outlook.com | INSTRUTOR | 2024-02-22 10:40:56-03
 23 | Joao Oliveira  | joaooliveira64867@yahoo.com | INSTRUTOR | 2025-03-08 07:05:10-03
 24 | Otavio Almeida | otavioalmeida21436@yahoo.com | INSTRUTOR | 2024-09-17 15:12:41-03
 25 | Isabela Santos  | isabelasantos21514@yahoo.com | ALUNO | 2025-02-21 04:39:08-03
(26 rows)

postgres#
```

```
select count(*) from usuario;
drop table usuario_importado;
```

```

C:\ Cmder
10 | Julia Rocha | juliarocha66052@yahoo.com | ALUNO | 2025-07-12 10:31:08-03
11 | Eduarda Almeida | eduardaalmeida44770@proton.me | ALUNO | 2024-09-20 17:04:12-03
12 | Bruno Martins | brunomartins90533@usp.br | ALUNO | 2025-05-30 15:59:35-03
13 | Karina Castro | karinacastro70037@yahoo.com | ALUNO | 2025-05-21 20:13:58-03
14 | Paula Ferreira | paulaferreira9918@gmail.com | ALUNO | 2024-06-29 10:32:13-03
15 | Otávio Lima | otavioolima55613@edu.br | INSTRUTOR | 2024-06-29 10:32:13-03
16 | Henrique Xavier | henriquexavier65453@edu.br | INSTRUTOR | 2025-08-10 05:46:30-03
17 | Priscila Monteiro | priscilamonteiro24357@infnet.edu.br | ALUNO | 2025-02-06 12:40:56-03
18 | Isabela Santos | isabelasantos21514@infnet.edu.br | INSTRUTOR | 2024-01-08 06:25:07-03
19 | Joao Souza | joaosouza45840@ufrrj.br | ALUNO | 2024-10-26 19:48:17-03
20 | Yasmin Silva | yasminsilva6465@gmail.com | INSTRUTOR | 2024-03-02 00:30:56-03
21 | Michel Cardoso | michelcardoso1990@outlook.com | INSTRUTOR | 2024-02-17 18:54:36-03
22 | Nina Monteiro | ninamonteiro671789@outlook.com | ALUNO | 2024-02-17 18:54:36-03
23 | Ana Farias | anafarias64461@proton.me | INSTRUTOR | 2024-11-22 20:48:39-03
24 | Priscila Almeida | priscilaalmeida47748@uni.com.br | ALUNO | 2025-03-08 07:05:18-03
25 | Joao Oliveira | joaooliveira64867@yahoo.com | INSTRUTOR | 2024-09-17 15:12:41-03
26 | Otávio Almeida | otavioalmeida2143@yahoocom | ALUNO | 2025-02-21 04:39:08-03
27 | Carla Cardoso | carlacardoso024868@yahoocom | ALUNO | 2024-03-15 11:12:26-03
28 | Gustavo Cavalcanti | gustavocavalcanti1230@nepsbr | INSTRUTOR | 2024-03-15 11:12:26-03
29 | Rafa Martins | rafamartins98308@usp.br | ALUNO | 2025-08-06 16:09:10-03
30 | Daniela Cardoso | danielacardoso23847@edu.br | INSTRUTOR | 2024-05-23 03:50:38-03
31 | Bruno Araujo | brunooraujao43315@yahoo.com | ALUNO | 2024-05-18 05:51:35-03
32 | Rodrigo Monteiro | rodrigomonteiro67931@edu.br | INSTRUTOR | 2025-02-02 14:50:43-03
33 | Luana Freitas | luanafreitas10898@gmail.com | ALUNO | 2024-05-25 23:39:22-03
34 | Marinha Farias | marinahfarias81837@unesp.br | ALUNO | 2024-04-14 21:03:44-03
35 | André Cavalcanti | andrcavalcanti130572@proton.me | ALUNO | 2024-04-07 08:53:46-03
36 | Larissa Martins | larissamartins90883@uni.com.br | INSTRUTOR | 2024-02-15 23:36:55-03
37 | Rafa Castro | rafacastro55952@gmail.com | ALUNO | 2025-02-05 07:44:48-03
38 | Larissa Rocha | larissarocha14099@uni.com.br | INSTRUTOR | 2024-05-01 07:16:57-03
39 | Camila Cavalcanti | camilacavalcanti192873@uni.com.br | ALUNO | 2025-06-19 14:51:00-03
40 | Felipe Monteiro | felipemonteiro48325@ubn.br | ALUNO | 2024-04-19 02:11:23-03
41 | Rafa Barbosa | rafabarbosa96630@unb.br | ALUNO | 2024-07-24 22:22:18-03
42 | Felipe Silva | felipesilva28780@proton.me | ALUNO | 2024-01-02 13:56:09-03
43 | Luana Freitas | luanafreitas10898@gmail.com | ALUNO | 2024-05-25 23:39:22-03
44 | Pedro Ribeiro | pedroribeiro203834@infnet.edu.br | ALUNO | 2024-08-21 03:10:33-03
45 | Yasmin Xavier | yasminxavier50893@outlook.com | ALUNO | 2024-10-13 03:34:37-03
46 | Carla Cardoso | carlacardoso024868@yahoocom | ALUNO | 2024-08-26 01:48:09-03
47 | Otávio Lima | otavioolima55613@edu.br | ALUNO | 2024-03-29 06:53:54-03

postgres=# select count(*) from usuario;
count
-----
5005
(1 row)

postgres# drop table usuario_importado;
DROP TABLE
postgres#

```

```

CREATE TABLE curso_importado (id INT PRIMARY KEY, titulo TEXT NOT NULL, categoria TEXT NOT NULL, nivel TEXT NOT NULL CHECK(nivel IN('inic','inter','avanc')), preco NUMERIC CHECK(preco >= 0), publicado_em DATE, instrutor_id BIGINT);


```

```

copy curso_importado from '/import/cursos.csv' with(format csv, header);


```

```

insert into curso (titulo, categoria, nivel, preco, publicado_em, instrutor_id) select (titulo, categoria, nivel, preco, publicado_em, instrutor_id) from curso_importado;
select count(*) from curso;
drop table curso_importado;


```

```

C:\ Cmder
39 | Camila Cavalcanti | camilacavalcanti192873@uni.com.br | ALUNO | 2025-08-02 14:53:14-03
40 | Felipe Monteiro | felipemonteiro48325@usp.br | ALUNO | 2025-04-19 02:11:23-03
41 | Rafa Barbosa | rafabarbosa96630@unb.br | ALUNO | 2024-07-24 22:22:18-03
42 | Felipe Silva | felipesilva28780@proton.me | ALUNO | 2024-01-02 13:56:09-03
43 | Luana Freitas | luanafreitas10898@gmail.com | ALUNO | 2024-05-25 23:39:22-03
44 | Pedro Ribeiro | pedroribeiro203834@infnet.edu.br | ALUNO | 2024-08-21 03:10:33-03
45 | Yasmin Xavier | yasminxavier50893@outlook.com | ALUNO | 2024-10-13 03:34:37-03
46 | Carla Cardoso | carlacardoso024868@yahoocom | ALUNO | 2024-08-26 01:48:09-03
47 | Otávio Lima | otavioolima55613@edu.br | ALUNO | 2024-03-29 06:53:54-03

postgres# select count(*) from usuario;
count
-----
5005
(1 row)

postgres# drop table usuario_importado;
DROP TABLE
postgres# CREATE TABLE curso_importado (id INT PRIMARY KEY, titulo TEXT NOT NULL, categoria TEXT NOT NULL, nivel TEXT NOT NULL CHECK(nivel IN('inic','inter','avanc')), preco NUMERIC CHECK(preco >= 0), publicado_em DATE, instrutor_id BIGINT);
CREATE TABLE
postgres# copy curso_importado from '/import/cursos.csv'
C:\Users\Usuario\Downloads\cmdr
> docker exec -it cmdilearn_pg /bin/bash
2f58066b8af:/# psql -U postgres
psql (16.10)
Type "help" for help.

postgres# copy curso_importado from '/import/cursos.csv' with(format csv, header);
COPY 5000
postgres# insert into curso (titulo, categoria, nivel, preco, publicado_em, instrutor_id) select (titulo, categoria, nivel, preco, publicado_em, instrutor_id) from curso_importado
do;
ERROR:  INSERT has more target columns than expressions
LINE 1: insert into curso (titulo, categoria, nivel, preco, publicado...
HINT:  The insertion source is a row expression containing the same number of columns expected by the INSERT. Did you accidentally use extra parentheses?
postgres# insert into curso (titulo, categoria, nivel, preco, publicado_em, instrutor_id) select titulo, categoria, nivel, preco, publicado_em, instrutor_id from curso_importado
;
INSERT 0 5000
postgres# select count(*) from curso;
count
-----
5005
(1 row)

postgres# drop table curso_importado;
DROP TABLE
postgres#
```

```

CREATE TABLE pagamento_importado (id INT PRIMARY KEY, matricula_id BIGINT,
valor_pago NUMERIC CHECK(valor_pago >= 0), realizado_em TIMESTAMPTZ, meio TEXT
CHECK(meio IN('PIX','CARTAO','BOLETO')), status TEXT CHECK(status IN('OK','FALHA')));

copy pagamento_importado from '/import/pagamentos.csv' with(format csv, header);

insert into pagamento(matricula_id, valor_pago, realizado_em, meio, status) select
matricula_id, valor_pago, realizado_em, meio, status from pagamento_importado;
select count(*) from pagamento;
drop table pagamento_importado;

```

```

Cmdr
(1 row)

postgres# drop table usuario_importado;
DROP TABLE
postgres# CREATE TABLE curso_importado (id INT PRIMARY KEY, titulo TEXT NOT NULL, categoria TEXT NOT NULL, nivel TEXT NOT NULL CHECK(nivel IN('inic','inter','avanc')), preco NUMERIC CHECK(preco >= 0), publicado_em DATE, instrutor_id BIGINT);
CREATE TABLE
postgres# copy curso_importado from /import/cursos.csv
C:\Users\user\Desktop\Downloads\cmdr
$ docker exec -it indielearn_pg /bin/bash
2f59066bc8af:/# psql -U postgres
psql (16.10)
Type "help" for help.

postgres# copy curso_importado from '/import/cursos.csv' with(format csv, header);
COPY 5000
postgres# insert into curso (titulo, categoria, nivel, preco, publicado_em, instrutor_id) select (titulo, categoria, nivel, preco, publicado_em, instrutor_id) from curso_importado;
ERROR:  INSERT has more target columns than expressions
LINE 1: insert into curso (titulo, categoria, nivel, preco, publicado...
^
HINT:  The insertion source is a row expression containing the same number of columns expected by the INSERT. Did you accidentally use extra parentheses?
postgres# insert into curso (titulo, categoria, nivel, preco, publicado_em, instrutor_id) select titulo, categoria, nivel, preco, publicado_em, instrutor_id from curso_importado;
;
INSERT 0 5000
postgres# select count(*) from curso;
count
-----
5005
(1 row)

postgres# drop table curso_importado;
DROP TABLE
postgres# CREATE TABLE pagamento_importado (id INT PRIMARY KEY, matricula_id BIGINT, valor_pago NUMERIC CHECK(valor_pago >= 0), realizado_em TIMESTAMPTZ, meio TEXT CHECK(meio IN('PIX','CARTAO','BOLETO')), status TEXT CHECK(status IN('OK','FALHA')));
CREATE TABLE
postgres# copy pagamento_importado from '/import/pagamentos.csv' with(format csv, header);
COPY 5000
postgres# insert into pagamento(matricula_id, valor_pago, realizado_em, meio, status) select matricula_id, valor_pago, realizado_em, meio, status from pagamento_importado;
INSERT 0 5000
postgres# select count(*) from pagamento;
count
-----
5008
(1 row)

postgres# drop table pagamento_importado;
DROP TABLE
postgres#

```

Diferença entre **GENERATED ALWAYS AS IDENTITY** e **GENERATED BY DEFAULT AS IDENTITY**:

- ***GENERATED ALWAYS AS IDENTITY***

Quando se utiliza o **ALWAYS AS IDENTITY**, o banco popula o id automaticamente, mas impedindo que o usuário coloque o id. Tornando seguro a criação dos IDs

- ***GENERATED BY DEFAULT AS IDENTITY***:

Quando se utiliza o **DEFAULT AS IDENTITY**, o banco popula o id automaticamente, mas ele não impede que o usuário coloque o id manualmente. Entretanto, ainda tem as chances de ocorrer erro se colocar um id já populado.

Ato 4 – Consultas (SQL)

Bloco A

`select * from curso where nivel='inter' and categoria in ('Data','DBA','DevOps') and titulo ilike '%sql%' order by publicado_em desc offset 20;`

```
4747 | PostgreSQL Mastery 2025 | Data | inter | 432.59 | 2024-12-18 | 612
postgres# select * from curso where nivel='inter' and categoria in ('Data','DBA','DevOps') and titulo ilike '%sql%' order by publicado_em desc offset 20;
+-----+-----+-----+-----+-----+-----+
| id   | titulo          | categoria | nivel | preco | publicado_em | instrutor_id |
+-----+-----+-----+-----+-----+-----+
| 4584 | Spark SQL para Negócios | DBA       | inter  | 987.38 | 2025-04-30 | 2779
| 858  | Spark SQL          | DevOps    | inter  | 288.05 | 2025-04-29 | 4487
| 2938 | Spark SQL do Zero  | DevOps    | inter  | 337.77 | 2025-04-26 | 112
| 3068 | PostgreSQL Mastery | DevOps    | inter  | 450.00 | 2025-04-25 | 4677
| 3129 | PostgreSQL Essentials do Zero | Data     | inter  | 52.47 | 2025-04-17 | 2617
| 759  | Spark SQL Intensivo | DevOps    | inter  | 358.95 | 2025-04-13 | 653
| 2447 | PostgreSQL Mastery | DevOps    | inter  | 126.28 | 2025-04-10 | 2603
| 2342 | Spark SQL Pro      | DevOps    | inter  | 262.8  | 2025-03-29 | 930
| 4384 | PostgreSQL Mastery para Negócios | DevOps    | inter  | 888.9  | 2025-03-27 | 2780
| 2656 | Spark SQL          | DBA       | inter  | 756.61 | 2025-03-25 | 387
| 1528 | SQL Essentials do Zero | DevOps    | inter  | 388.73 | 2025-03-22 | 158
| 495  | SQL Essentials para Negócios | Data     | inter  | 439.31 | 2025-03-15 | 1496
| 4523 | Spark SQL do Zero  | DBA       | inter  | 353.29 | 2025-03-05 | 258
| 4617 | Spark SQL para Negócios | DevOps    | inter  | 690.69 | 2025-03-04 | 4635
| 4434 | Spark SQL          | Data     | inter  | 242.04 | 2025-03-03 | 4660
| 794  | SQL Essentials Pro | Data     | inter  | 552.33 | 2025-02-26 | 2726
| 3749 | PostgreSQL Mastery Intensivo | DevOps    | inter  | 460.00 | 2025-02-24 | 2229
| 2226 | PostgreSQL Mastery do Zero | DevOps    | inter  | 652.63 | 2025-02-24 | 1600
| 3901 | SQL Essentials Intensivo | DevOps    | inter  | 411.79 | 2025-02-19 | 4411
| 1370 | SQL Essentials 2025 | Data     | inter  | 828.72 | 2025-02-19 | 4264
| 3879 | PostgreSQL Mastery para Negócios | DevOps    | inter  | 852.37 | 2025-02-08 | 569
| 1999 | Spark SQL Intensivo | DevOps    | inter  | 605.5  | 2025-01-21 | 526
| 934  | Spark SQL Intensivo | Data     | inter  | 628.07 | 2025-01-13 | 3223
| 952  | PostgreSQL Mastery do Zero | DevOps    | inter  | 99.83 | 2025-01-07 | 2723
| 3673 | PostgreSQL Mastery 2025 | DBA       | inter  | 298.99 | 2024-12-22 | 785
| 4747 | PostgreSQL Mastery 2025 | Data     | inter  | 432.59 | 2024-12-18 | 612
| 4923 | PostgreSQL Mastery 2025 | DevOps    | inter  | 639.79 | 2024-12-11 | 4144
| 1451 | SQL Essentials Intensivo | DBA       | inter  | 946.06 | 2024-12-11 | 249
| 3016 | PostgreSQL Mastery para Negócios | DBA       | inter  | 812.55 | 2024-12-07 | 1162
| 4094 | PostgreSQL Mastery | DBA       | inter  | 851.56 | 2024-12-03 | 2816
| 4895 | Spark SQL 2025        | DevOps    | inter  | 58.00 | 2024-11-21 | 2454
| 889  | SQL Essentials Intensivo | DevOps    | inter  | 620.12 | 2024-11-16 | 2922
| 4698 | Spark SQL 2025        | DBA       | inter  | 395.24 | 2024-11-02 | 2812
| 1581 | PostgreSQL Mastery 2025 | Data     | inter  | 161.72 | 2024-10-04 | 2421
| 4175 | PostgreSQL Mastery 2025 | DBA       | inter  | 193.57 | 2024-09-28 | 4300
| 4174 | PostgreSQL Mastery Intensivo | DevOps    | inter  | 451.81 | 2024-09-25 | 2930
| 960  | PostgreSQL Mastery Pro | DBA       | inter  | 194.45 | 2024-09-21 | 4096
| 3981 | Spark SQL 2025        | Data     | inter  | 864.92 | 2024-09-19 | 1553
| 1251 | Spark SQL              | DevOps    | inter  | 607.45 | 2024-09-16 | 1600
| 4734 | Spark SQL do Zero     | Data     | inter  | 712.93 | 2024-09-16 | 82
| 3089 | SQL Essentials 2025   | Data     | inter  | 742.36 | 2024-09-09 | 3715
| 307  | PostgreSQL Mastery 2025 | DBA       | inter  | 730.09 | 2024-09-07 | 3191
| 2975 | Spark SQL Intensivo  | DevOps    | inter  | 864.64 | 2024-09-04 | 1677
| 3491 | PostgreSQL Mastery do Zero | DBA       | inter  | 310.45 | 2024-08-31 | 423

```

`select id, nome, email from usuario where email like '%.edu.br%';`

```
3313 | PostgreSQL Mastery 2025 | Data | inter | 837.1 | 2024-08-16 | 176
postgres# select id, nome, email from usuario where email like '%.edu.br%';
+-----+-----+-----+
| id   | nome          | email           |
+-----+-----+-----+
| 1   | Richard Alves | richard.alves@infnet.edu.br
| 2   | Mell Alves   | mell.alves@infnet.edu.br
| 3   | Taylan Gonzaga | taylan.gonzaga@infnet.edu.br
| 4   | Lucas Cabral  | lucas.cabral@infnet.edu.br
| 5   | Alicia Silva  | alicia.silva@prof.infnet.edu.br
| 6   | Julia Sales   | juliasales133@infnet.edu.br
| 17  | Priscilla Monteiro | priscillamonteiro2435@infnet.edu.br
| 18  | Isabela Santos | isabelasantos2151@infnet.edu.br
| 44  | Pedro Ribeiro  | pedroribeiro0201@infnet.edu.br
| 101 | Ana Paula Reis | ana.paula.reis2880@infnet.edu.br
| 101 | Joao Martins  | joaomartins2581@infnet.edu.br
| 112 | Rafa Goncalves | rafagoncalves9054@infnet.edu.br
| 139 | Rodrigo Melo   | rodrigomelos5507@infnet.edu.br
| 148 | Roberta Araujo | robertaraaujo7225@infnet.edu.br
| 166 | Roberta Castro | robertacastro3855@infnet.edu.br
| 177 | Caio Sales   | caiosales6486@infnet.edu.br
| 216 | Andre Lima    | andrlima0580@infnet.edu.br
| 221 | Gustavo Oliveira | gustavooliveira2070@infnet.edu.br
| 222 | Larissa Barbosa | larissabarrosa28940@infnet.edu.br
| 227 | Rafael Costa  | rafaelcosta5776@infnet.edu.br
| 230 | Diego Pinto   | diegosilva01194@infnet.edu.br
| 231 | Pedro Pinto   | pedropinto0220@infnet.edu.br
| 244 | Carlos Rodrigues | carlosrodrigues2281@infnet.edu.br
| 249 | Vinicius Martins | viniciusmartins6310@infnet.edu.br
| 257 | Diogo Ribeiro  | diogoribeiro7977@infnet.edu.br
| 259 | Renata Martins | renatamartins7381@infnet.edu.br
| 298 | Eduarda Cavalcanti | eduardacavalcanti32383@infnet.edu.br
| 299 | Gustavo Costa  | gustavocosta47254@infnet.edu.br
| 312 | Isabela Pinto  | isabelapinto15268@infnet.edu.br
| 327 | Yasmin Souza   | yasminSouza5178@infnet.edu.br
| 336 | Sora Cavalcanti | sora cavalcanti147856@infnet.edu.br
| 337 | Andre Freitas  | andrefreitas6359@infnet.edu.br
| 372 | Lucas Rocha   | lucasrocha5173@infnet.edu.br
| 382 | Roberta Farias | robertafarias8243@infnet.edu.br
| 385 | Lucas Rodrigues | lucasrodrigues5264@infnet.edu.br
| 401 | Yasmim Farias  | yasmimfarias4351@infnet.edu.br
| 435 | Vitor Nogueira  | vitor.nogueira7795@infnet.edu.br
| 444 | Pedro Gomes   | pedrogomes58846@infnet.edu.br
| 466 | Thiago Santos  | thiagosantos61930@infnet.edu.br
| 466 | Yasmine Santos | yasmine.santos14726@infnet.edu.br
| 475 | Nina Oliveira  | ninaoliveira31321@infnet.edu.br
| 483 | Isabela Freitas | isabelafreitas9943@infnet.edu.br
| 493 | Caio Costa    | caiocosta5144@infnet.edu.br

```

select id, nome, email from usuario where right(email,7) = '.edu.br';

```

Cmder
postgres# select id, nome, email from usuario where right(email,7) = ".edu.br";
ERROR: column "edu.br" does not exist
LINE 1: ... , nome, email from usuario where right(email,7) = ".edu.bn" ^
postgres# select id, nome, email from usuario where right(email,7) = '.edu.bn';
id | nome | email
---+-----+-----
1 | Richard Alves | richard.alves@1.infnet.edu.br
2 | Mall Alves | mall.alvesgal@1.infnet.edu.br
3 | Taylan Gonzaga | taylan.gonzaga@1.infnet.edu.br
4 | Lucas Cabral | lucas.cabralgal@1.infnet.edu.br
5 | Alicia Silva | alicia.silva@prof.infnet.edu.br
6 | Julia Sales | juliasales133@infnet.edu.br
17 | Priscila Monteiro | priscilamonteiro24357@infnet.edu.br
18 | Isabela Santos | isabelasantos21514@infnet.edu.br
44 | Pedro Ribeiro | pedroribeiro23834@infnet.edu.br
86 | Beatriz Rodrigues | beatrizrodrigues8899@infnet.edu.br
101 | Joao Martins | joaomartins25810@infnet.edu.br
112 | Rafa Goncalves | rafagoncalves90640@infnet.edu.br
139 | Rodrigo Melo | rodrigomelo55074@infnet.edu.br
149 | Roberta Araujo | robertarauroj0225@infnet.edu.br
166 | Roberta Castro | robertacastro1959@infnet.edu.br
177 | Caio Sales | cailosales64808@infnet.edu.br
216 | Andre Lima | andrlima50580@infnet.edu.br
221 | Gustavo Oliveira | gustavooliveira20970@infnet.edu.br
222 | Larissa Barbosa | larissabarbossa28940@infnet.edu.br
227 | Rafael Costa | rafaelcosta57761@infnet.edu.br
234 | Diego Silva | diegosilva01194@infnet.edu.br
237 | Pedro Pinto | pedropinto0222@infnet.edu.br
244 | Carla Rodrigues | carlaraodrigues82288@infnet.edu.br
249 | Vinicius Martins | viniciusmartins76812@infnet.edu.br
257 | Diego Ribeiro | diegoribeiro097971@infnet.edu.br
259 | Renata Martins | renatamartins73817@infnet.edu.br
298 | Sandra Cavalcanti | sandracavalcanti32383@infnet.edu.br
300 | Gustavo Souza | gustavosouza77540@infnet.edu.br
312 | Isabela Pinto | isabelapinto0152680@infnet.edu.br
327 | Yasmin Souza | yasmimsouza51798@infnet.edu.br
336 | Sara Cavalcanti | saracavalcanti147856@infnet.edu.br
337 | Andre Freitas | andrefreitas63591@infnet.edu.br
372 | Lucas Rocha | lucasrocha05173@infnet.edu.br
382 | Roberta Farias | robertafarias82435@infnet.edu.br
385 | Lucas Rodrigues | lucasrodrigues26403@infnet.edu.br
387 | Thiago Silva | thiagosilva38280@infnet.edu.br
401 | Yasmin Farias | yasminfarias43539@infnet.edu.br
435 | Vitor Nogueira | vitornogueira77950@infnet.edu.br
444 | Pedro Gomes | pedrogomes38846@infnet.edu.br
460 | Thiago Santos | thiagosantos61930@infnet.edu.br
466 | Yasmin Santos | yasminsantos14726@infnet.edu.br

```

select id, titulo, REPLACE(titulo,'SQL','SQL (2025)') AS titulo_formatado from curso;

```

Cmder
540 | Thiago Teixeira | thiagoteixeira17977@infnet.edu.br
postgres# select id, titulo, REPLACE(titulo,'SQL','SQL (2025)') AS titulo_formatado from curso;
id | titulo | titulo_formatado
---+-----+-----
1 | Engenharia de Software | Engenharia de Software
2 | Engenharia da Computacao | Engenharia da Computacao
3 | Analise e Desenvolvimento de Sistemas | Analise e Desenvolvimento de Sistemas
4 | Analise de Dados | Analise de Dados
5 | Curso de GitHub | Curso de GitHub
6 | Docker & Kubernetes do Zero | Docker & Kubernetes do Zero
7 | Redis Turbo Intensivo | Redis Turbo Intensivo
8 | SQL Essentials do Zero | SQL (2025) Essentials do Zero
9 | Cassandra Hands-on 2025 | Cassandra Hands-on 2025
10 | Docker & Kubernetes Intensivo | Docker & Kubernetes Intensivo
11 | Docker & Kubernetes Pro | Docker & Kubernetes Pro
12 | Cassandra Hands-on do Zero | Cassandra Hands-on do Zero
13 | PostgreSQL Mastery do Zero | PostgreSQL (2025) Mastery do Zero
14 | Redis Turbo Intensivo | Redis Turbo Intensivo
15 | Redis Turbo Intensivo | Redis Turbo Intensivo
16 | SQL Essentials Intensivo | SQL (2025) Essentials Intensivo
17 | Machine Learning do Zero | Machine Learning do Zero
18 | Graph Analytics do Zero | Graph Analytics do Zero
19 | Machine Learning Pro | Machine Learning Pro
20 | APIs REST 2025 | APIs REST 2025
21 | Cassandra Hands-on Intensivo | Cassandra Hands-on Intensivo
22 | ETL com Python para Negocios | ETL com Python para Negocios
23 | Machine Learning | Machine Learning
24 | ETL com Python Pro | ETL com Python Pro
25 | Cassandra Hands-on 2025 | Cassandra Hands-on 2025
26 | PostgreSQL Mastery Pro | PostgreSQL (2025) Mastery Pro
27 | ETL com Python | ETL com Python
28 | ETL com Python Pro | ETL com Python Pro
29 | Spark SQL do Zero | Spark SQL (2025) do Zero
30 | Docker & Kubernetes para Negocios | Docker & Kubernetes para Negocios
31 | Graph Analytics do Zero | Graph Analytics do Zero
32 | APIs REST 2025 | APIs REST 2025
33 | SQL Essentials do Zero | SQL (2025) Essentials do Zero
34 | Redis Turbo Intensivo | Redis Turbo Intensivo
35 | Docker & Kubernetes para Negocios | Docker & Kubernetes para Negocios
36 | Spark SQL Pro | Spark SQL (2025) Pro
37 | APIs REST para Negocios | APIs REST (2025) para Negocios
38 | Cassandra Hands-on Intensivo | Cassandra Hands-on Intensivo
39 | PostgreSQL Mastery para Negocios | PostgreSQL (2025) Mastery para Negocios
40 | Cassandra Hands-on | Cassandra Hands-on
41 | ETL com Python | ETL com Python
42 | Spark SQL Intensivo | Spark SQL (2025) Intensivo
43 | PostgreSQL Mastery para Negocios | PostgreSQL (2025) Mastery para Negocios
44 | ETL com Python Intensivo | ETL com Python Intensivo

```

`select * from pagamento where realizado_em between '2025-02-01' and '2025-03-15';`

```
LINE 1: ...nto where realizado_em between '2025-02-01' and '2025-03-15';
^
postgres# select * from pagamento where realizado_em between '2025-02-01' and '2025-03-15';
 id | matricula_id | valor_pago | realizado_em | meio | status
----+-----+-----+-----+-----+-----+
 14 |     824 | 1478.92 | 2025-03-05 11:22:15-03 | CARTAO | FALHA
 39 | 18692 | 1089.45 | 2025-03-01 18:09:31-03 | BOLETO | OK
 49 | 10893 | 679.99 | 2025-03-12 08:57:46-03 | BOLETO | OK
 96 | 5813 | 139.18 | 2025-02-11 12:56:46-03 | PIX | OK
 99 | 18877 | 387.19 | 2025-02-12 02:31:40-03 | PIX | OK
 102 | 10572 | 289.21 | 2025-02-28 03:19:24-03 | CARTAO | OK
 103 | 2992 | 182.58 | 2025-03-18 12:59:46-03 | CARTAO | OK
 121 | 3867 | 362.69 | 2025-02-23 05:29:42-03 | PIX | OK
 129 | 19194 | 1344.28 | 2025-02-04 02:25:08-03 | BOLETO | OK
 140 | 3453 | 536.35 | 2025-02-06 15:30:26-03 | BOLETO | OK
 150 | 18299 | 1420.6 | 2025-03-05 17:21:08-03 | PIX | OK
 187 | 14347 | 1381.72 | 2025-02-23 20:46:15-03 | PIX | OK
 218 | 543 | 1325.1 | 2025-03-11 11:43:36-03 | BOLETO | OK
 249 | 13029 | 320.94 | 2025-02-03 06:05:32-03 | BOLETO | FALHA
 265 | 10956 | 494.55 | 2025-02-27 20:03:22-03 | BOLETO | OK
 292 | 2667 | 641.12 | 2025-02-17 08:09:42-03 | CARTAO | OK
 304 | 1517 | 489.44 | 2025-02-18 08:45:45-03 | BOLETO | OK
 309 | 12680 | 1427.19 | 2025-02-18 11:40:06-03 | CARTAO | OK
 338 | 10768 | 937.13 | 2025-02-04 05:57:56-03 | CARTAO | OK
 487 | 13006 | 1243.49 | 2025-03-14 00:17:03-03 | CARTAO | FALHA
 489 | 10825 | 159.68 | 2025-02-16 11:22:06-03 | BOLETO | OK
 457 | 8301 | 379.49 | 2025-02-06 16:40:38-03 | BOLETO | OK
 458 | 10920 | 1198.2 | 2025-02-12 02:28:08-03 | CARTAO | OK
 469 | 19159 | 1087.76 | 2025-02-19 02:20:29-03 | PIX | OK
 476 | 19062 | 517.39 | 2025-02-15 03:51:38-03 | PIX | OK
 481 | 19951 | 1158.27 | 2025-03-12 09:06:36-03 | BOLETO | OK
 483 | 9783 | 180.45 | 2025-03-11 13:43:25-03 | BOLETO | OK
 493 | 8670 | 1362.05 | 2025-02-14 02:05:16-03 | BOLETO | OK
 511 | 5422 | 1496.5 | 2025-03-07 05:19:09-03 | BOLETO | OK
 528 | 16480 | 753.09 | 2025-02-15 09:50:08-03 | PIX | FALHA
 539 | 4582 | 447.12 | 2025-02-11 22:50:32-03 | BOLETO | OK
 552 | 4585 | 136.17 | 2025-03-13 00:51:55-03 | CARTAO | FALHA
 558 | 6166 | 329.46 | 2025-02-27 04:48:29-03 | CARTAO | OK
 574 | 18426 | 188.46 | 2025-02-08 02:07:23-03 | BOLETO | OK
 592 | 16611 | 548.03 | 2025-02-25 08:46:46-03 | PIX | OK
 600 | 9899 | 938.39 | 2025-02-22 05:25:28-03 | PIX | OK
 616 | 18062 | 840.66 | 2025-02-01 22:26:43-03 | PIX | OK
 623 | 1823 | 70.11 | 2025-02-25 17:49:52-03 | BOLETO | OK
 633 | 1596 | 786.73 | 2025-02-04 20:44:57-03 | BOLETO | OK
 635 | 7585 | 981.01 | 2025-03-04 05:47:09-03 | CARTAO | OK
 636 | 11981 | 772.15 | 2025-02-14 18:37:26-03 | BOLETO | FALHA
 638 | 16308 | 576.06 | 2025-02-14 09:11:55-03 | BOLETO | FALHA
 649 | 14269 | 836.62 | 2025-03-03 03:35:28-03 | CARTAO | OK
 723 | 13241 | 964.06 | 2025-03-08 10:58:04-03 | CARTAO | OK
```

```
select * from curso where nivel='avanc' and preco between 300 and 800 and categoria <> 'ML';
 id | titulo | categoria | nivel | preco | publicado_em | instrutor_id
----+-----+-----+-----+-----+-----+
 19 | Machine Learning Pro | Segurança | avanc | 544.54 | 2024-08-17 | 1198
 31 | Graph Analytics do Zero | DBA | avanc | 357.94 | 2024-12-27 | 2481
 34 | Redis Turbo Intensivo | IoT | avanc | 628.35 | 2025-05-24 | 4937
 39 | PostgreSQL Mastery para Negócios | Web | avanc | 718.42 | 2024-06-02 | 1224
 72 | PostgreSQL Mastery | IoT | avanc | 366.41 | 2024-08-05 | 422
 88 | SQL Essentials Intensivo | AI | avanc | 412.14 | 2024-05-21 | 4928
 106 | Docker & Kubernetes | Web | avanc | 528.26 | 2024-03-09 | 1917
 118 | SQL Essentials Pro | AI | avanc | 522.11 | 2025-01-13 | 4774
 120 | Python para Zero | DBA | avanc | 170.11 | 03:45:13-03 | 2392
 133 | ETL com Python 2025 | Cloud | avanc | 643.95 | 2024-06-29 | 1842
 150 | Data Pipelines 2025 | IoT | avanc | 475.17 | 2024-01-19 | 508
 151 | Graph Analytics 2025 | Cloud | avanc | 405.68 | 2024-03-01 | 1308
 159 | Docker & Kubernetes Pro | Segurança | avanc | 476.4 | 2024-07-29 | 377
 164 | SQL Essentials Intensivo | Segurança | avanc | 557.46 | 2025-02-03 | 2669
 170 | Docker & Kubernetes para Negócios | Cloud | avanc | 539.52 | 2025-02-26 | 4918
 181 | SQL Essentials Intensivo | DevOps | avanc | 342.79 | 2024-09-19 | 1817
 201 | APIs REST do Zero | Web | avanc | 635.51 | 2024-09-21 | 1195
 209 | PostgreSQL Mastery 2025 | Segurança | avanc | 501.44 | 2025-04-28 | 128
 210 | Data Pipelines Intensivo | Mobile | avanc | 356.73 | 2024-03-16 | 4218
 230 | Data Pipelines Intensivo | Data | avanc | 336.84 | 2024-07-04 | 4551
 231 | SQL Essentials do Zero | IoT | avanc | 600.0 | 2024-01-09 | 460
 271 | Graph Analytics 2025 | Segurança | avanc | 481.36 | 2024-01-19 | 546
 282 | Cassandra Hands-on 2025 | Cloud | avanc | 718.14 | 2024-10-25 | 4286
 284 | Redis Turbo 2025 | Segurança | avanc | 573.74 | 2024-08-11 | 1198
 303 | Graph Analytics para Negócios | Mobile | avanc | 519.94 | 2024-04-07 | 4299
 345 | Graph Analytics para Negócios | Segurança | avanc | 637.81 | 2024-09-27 | 4311
 346 | ETL com Python 2025 | Web | avanc | 430.1 | 2025-03-24 | 1720
 349 | Redis Turbo do Zero | AI | avanc | 691.5 | 2025-05-28 | 2141
 351 | Data Pipelines 2025 | Segurança | avanc | 373.4 | 2024-07-26 | 626
 365 | Cassandra Hands-on | Mobile | avanc | 649.62 | 2024-12-04 | 224
 388 | ETL com Python para Negócios | DevOps | avanc | 773.33 | 2024-07-20 | 3023
 399 | PostgreSQL Mastery do Zero | Web | avanc | 789.69 | 2024-07-02 | 2612
 401 | Graph Analytics Pro | Web | avanc | 336.23 | 2024-06-14 | 814
 406 | APIs REST Pro | Web | avanc | 775.43 | 2024-05-11 | 3339
 427 | Spark SQL do Zero | IoT | avanc | 600.0 | 03:45:14-03 | 2394
 428 | Graph Analytics | Data | avanc | 323.62 | 2025-06-05 | 4170
 436 | Graph Analytics | Segurança | avanc | 493.6 | 2025-02-21 | 823
 461 | Redis Turbo 2025 | DBA | avanc | 566.6 | 2024-07-30 | 1466
 464 | Docker & Kubernetes 2025 | AI | avanc | 378.04 | 2024-01-18 | 213
 491 | SQL Essentials Pro | IoT | avanc | 683.77 | 2024-06-12 | 2952
 507 | Machine Learning para Negócios | AI | avanc | 400.3 | 2025-03-12 | 1329
 526 | Graph Analytics do Zero | AI | avanc | 706.17 | 2025-04-29 | 3675
 533 | Redis Turbo 2025 | DBA | avanc | 595.76 | 2025-08-18 | 1561
 545 | Graph Analytics Pro | Cloud | avanc | 703.73 | 2024-07-23 | 3483
```

Bloco B

```
select categoria, count(*) ,avg(preco) from curso where extract(year from publicado_em) = 2025 group by categoria;
```

```
Cmder
ERROR: column "curso.id" must appear in the GROUP BY clause or be used in an aggregate function
LINE 1: select * from curso where extract(year from publicado_em) = ...
          ^
postgres=# select categoria from curso where extract(year from publicado_em) = 2025 group by categoria;
categoria
-----
AI
Cloud
DBA
Data
DevOps
IoT
ML
Mobile
Segurança
Web
(10 rows)

postgres=# select categoria, avg(preco) from curso where extract(year from publicado_em) = 2025 group by categoria;
categoria | avg
-----+-----
AI      | 519.6912886597938144
Cloud   | 539.1879187817258883
DBA     | 515.4935625000000000
Data    | 524.8025252525252525
DevOps  | 507.6728971962616822
IoT    | 504.3900534759358289
ML     | 507.1578494623655914
Mobile  | 506.9680874316939891
Segurança | 519.4592385786802030
Web    | 503.7333695652173913
(10 rows)

postgres=# select categoria, count(*) ,avg(preco) from curso where extract(year from publicado_em) = 2025 group by categoria;
categoria | count | avg
-----+-----+-----
AI      | 194  | $19.6912886597938144
Cloud   | 197  | $39.1879187817258883
DBA     | 160  | $15.4935625000000000
Data    | 198  | $24.8025252525252525
DevOps  | 214  | $07.6728971962616822
IoT    | 187  | $04.3900534759358289
ML     | 186  | $07.1578494623655914
Mobile  | 183  | $06.9680874316939891
Segurança | 197  | $19.4592385786802030
Web    | 184  | $03.7333695652173913
(10 rows)

postgres=#

```

```
docker.exe
[Windows Taskbar] Search 20:48 31/08/2025

select TO_CHAR(realizado_em, 'Month') as mes, sum(valor_pago) as total_pagamentos_ok from pagamento where extract(year from realizado_em)=2025 and status = 'OK' group by mes order by mes;
```

```
Cmder
LINE 1: ...year from realizado_em)-2025 and status = 'OK' group by mes;
          ^
postgres=# select extract(month from realizado_em) as mes, sum(valor_pago) as total_pagamentos_ok from pagamento where extract(year from realizado_em)=2025 and status = 'OK' group by mes;
mes | total_pagamentos_ok
-----+-----
1    | 145483.48
2    | 140359.59
3    | 152343.89
4    | 152983.93
5    | 152448.19
6    | 173121.57
7    | 140456.80
8    | 140417.89
(8 rows)

postgres=# select TO_CHAR(extract(month from realizado_em), 'Month') as mes, sum(valor_pago) as total_pagamentos_ok from pagamento where extract(year from realizado_em)=2025 and status = 'OK' group by mes;
status = 'OK' group by mes;
ERROR: "OK" is not a number
postgres=# select TO_CHAR(realizado_em, 'Month') as mes, sum(valor_pago) as total_pagamentos_ok from pagamento where extract(year from realizado_em)=2025 and status = 'OK' group by mes;
mes | total_pagamentos_ok
-----+-----
April | 152983.93
August | 140417.89
February | 140359.59
January | 145483.48
July | 140456.80
June | 173121.57
March | 152343.89
May | 152448.19
(8 rows)

postgres=# select TO_CHAR(realizado_em, 'Month') as mes, sum(valor_pago) as total_pagamentos_ok from pagamento where extract(year from realizado_em)=2025 and status = 'OK' group by mes order by mes;
mes | total_pagamentos_ok
-----+-----
April | 152983.93
August | 140417.89
February | 140359.59
January | 145483.48
July | 140456.80
June | 173121.57
March | 152343.89
May | 152448.19
(8 rows)

postgres=#

```

```
select to_char(realizado_em, 'Month') as mes, sum(valor_pago) as receita_total from pagamento where status = 'OK' group by mes having sum(valor_pago) >= 10000;
```

mes	receita_total
January	313119.94
June	313358.75
May	306096.78
July	301820.43
August	297631.87
December	168685.70
March	307980.90
October	161731.38
November	127096.15
April	279209.06
February	299526.35
September	152721.12

select count(*) from pagamento;
select count(meio) from pagamento;

count
5088

count
5088

Diferença entre COUNT(*) e COUNT(meio):

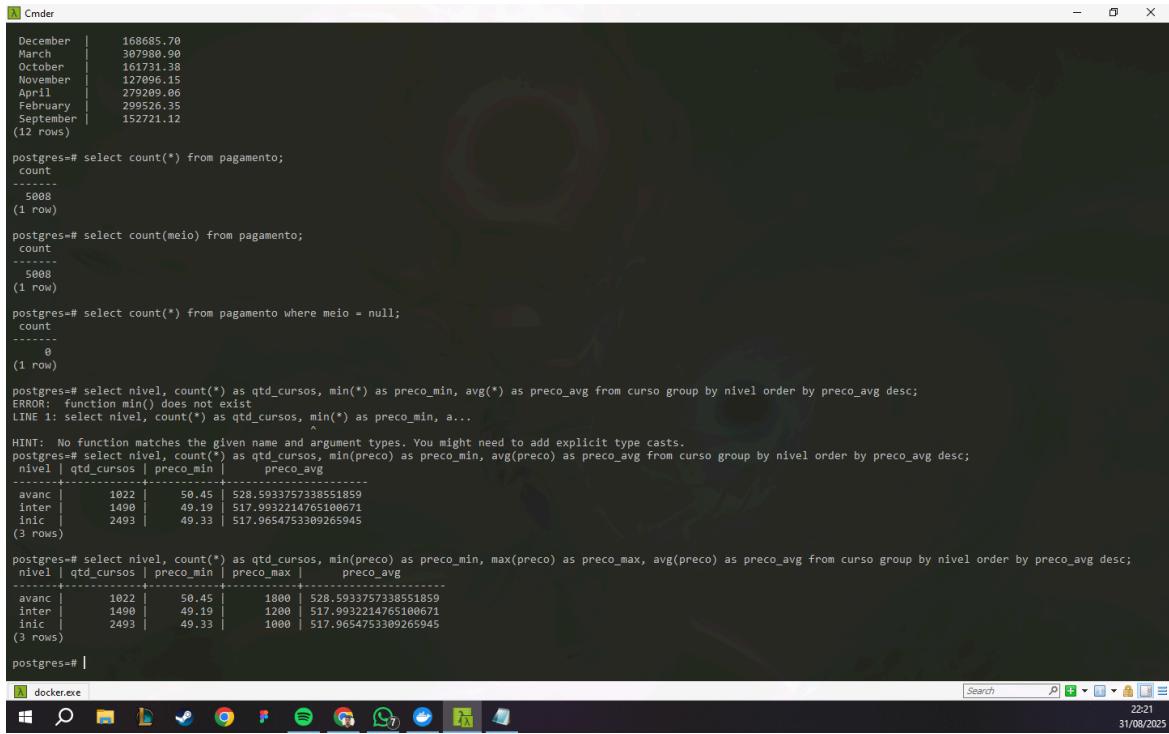
- **COUNT(*)**

Conta por uma linha inteira.

- **COUNT(meio):**

Conta somente se na coluna 'meio' estiver com valor.

```
select nivel, count(*) as qtd_cursos, min(preco) as preco_min, max(preco) as preco_max,
       avg(preco) as preco_avg from curso group by nivel order by preco_avg desc;
```



```
December | 168685.78
November | 207988.99
October | 161731.38
September | 127906.15
August | 279289.06
July | 209526.35
June | 152721.12
(12 rows)

postgres=# select count(*) from pagamento;
count
-----
5088
(1 row)

postgres=# select count(meio) from pagamento;
count
-----
5088
(1 row)

postgres=# select count(*) from pagamento where meio = null;
count
-----
0
(1 row)

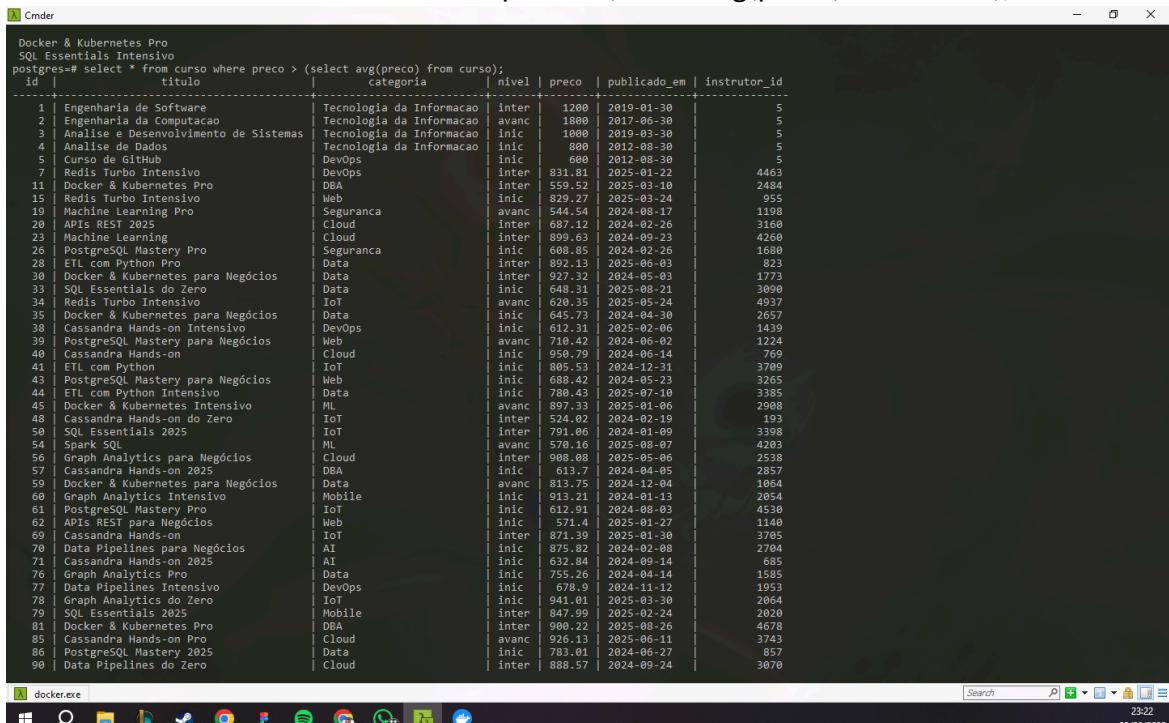
postgres# select nivel, count(*) as qtd_cursos, min(*) as preco_min, avg(*) as preco_avg from curso group by nivel order by preco_avg desc;
ERROR:  function min() does not exist
LINE 1: select nivel, count(*) as qtd_cursos, min(*) as preco_min, ...
                                         ^
HINT:  No function matches the given name and argument types. You might need to add explicit type casts.
postgres# select nivel, count(*) as qtd_cursos, min(preco) as preco_min, avg(preco) as preco_avg from curso group by nivel order by preco_avg desc;
nivel | qtd_cursos | preco_min | preco_avg
-----+-----+-----+-----+
avanc | 1022 | 50.45 | 528.5933757338551859
inter | 1498 | 49.19 | 517.9932214765100671
inic | 2493 | 49.33 | 517.9654753309265945
(3 rows)

postgres# select nivel, count(*) as qtd_cursos, min(preco) as preco_min, max(preco) as preco_max, avg(preco) as preco_avg from curso group by nivel order by preco_avg desc;
nivel | qtd_cursos | preco_min | preco_max | preco_avg
-----+-----+-----+-----+-----+
avanc | 1022 | 50.45 | 1800 | 528.5933757338551859
inter | 1498 | 49.19 | 1200 | 517.9932214765100671
inic | 2493 | 49.33 | 1000 | 517.9654753309265945
(3 rows)

postgres#
```

Bloco C

```
select * from curso where preco > (select avg(preco) from curso);
```



```
Docker & Kubernetes Pro
SQL Essentials Intensivo
postgres# select * from curso where preco > (select avg(preco) from curso);
 id | titulo | categoria | nivel | preco | publicado_em | instrutor_id
----+-----+-----+-----+-----+-----+-----+
 1 | Engenharia de Software | Tecnologia da Informacao | inter | 1200 | 2019-01-30 | 5
 2 | Engenharia da Computacao | Tecnologia da Informacao | avanc | 1800 | 2017-06-30 | 5
 3 | Analise e Desenvolvimento de Sistemas | Tecnologia da Informacao | inic | 1000 | 2012-03-30 | 5
 4 | Analise de Dados | Tecnologia da Informacao | inic | 800 | 2012-03-30 | 5
 5 | Curso Python para Data Science | DevOps | inic | 600 | 2012-08-30 | 5
 6 | Redis Turbo Intensivo | DevOps | inter | 831.51 | 2025-01-12 | 4463
 7 | Docker & Kubernetes Pro | DBA | inter | 559.52 | 2025-02-10 | 2484
 8 | Redis Turbo Intensivo | Web | inic | 829.27 | 2025-03-24 | 955
 9 | Machine Learning Pro | Seguranca | avanc | 544.54 | 2024-08-17 | 1198
 10 | APIs REST 2025 | Cloud | inter | 687.12 | 2024-02-26 | 3160
 11 | Machine Learning | Cloud | inter | 899.63 | 2024-09-23 | 4260
 12 | PostgreSQL Mastery Pro | Seguranca | inter | 608.85 | 2024-02-26 | 1680
 13 | ETL com Python Pro | Data | inter | 892.13 | 2025-06-03 | 823
 14 | Docker & Kubernetes para Negocios | Data | inter | 927.32 | 2024-05-03 | 1773
 15 | SQL Essentials do Zero | Data | inic | 648.31 | 2025-08-21 | 3090
 16 | Redis Turbo Intensivo | IoT | avanc | 620.35 | 2025-05-24 | 4937
 17 | Docker & Kubernetes para Negocios | DevOps | inic | 600 | 2024-03-30 | 2657
 18 | Cassandra Hands-on Intensivo | Data | inter | 612.31 | 2025-03-06 | 1439
 19 | PostgreSQL Mastery para Negocios | Web | avanc | 710.42 | 2024-06-02 | 1224
 20 | Cassandra Hands-on | Cloud | inic | 958.79 | 2024-06-14 | 769
 21 | ETL com Python | IoT | inic | 805.53 | 2024-12-31 | 3709
 22 | PostgreSQL Mastery para Negocios | Web | inic | 688.42 | 2024-05-23 | 3265
 23 | ETL com Python Intensivo | Data | inic | 780.43 | 2025-07-10 | 3385
 24 | Docker & Kubernetes Intensivo | ML | avanc | 897.33 | 2025-01-06 | 2998
 25 | Cassandra Hands-on do Zero | IoT | inter | 524.02 | 2024-02-19 | 193
 26 | SQL Essentials 2025 | IoT | inter | 791.06 | 2024-01-09 | 3398
 27 | Spark SQL | ML | avanc | 570.16 | 2025-08-07 | 4283
 28 | Graph Analytics para Negocios | Cloud | inter | 908.08 | 2025-05-06 | 2538
 29 | Cassandra Hands-on 2025 | DBA | inic | 613.7 | 2024-04-05 | 2857
 30 | Docker & Kubernetes para Negocios | Data | inter | 813.7 | 2024-04-04 | 1064
 31 | Machine Learning Intensivo | Mobile | inic | 918.51 | 2024-01-13 | 2654
 32 | PostgreSQL Mastery Pro | IoT | inic | 612.91 | 2024-08-03 | 4639
 33 | APIs REST para Negocios | Web | inic | 571.4 | 2025-01-27 | 1140
 34 | Cassandra Hands-on | IoT | inter | 871.39 | 2025-01-30 | 3785
 35 | Data Pipelines para Negocios | AI | inic | 875.82 | 2024-02-08 | 2704
 36 | Cassandra Hands-on 2025 | AI | inic | 632.84 | 2024-09-14 | 685
 37 | Graph Analytics Pro | Data | inic | 755.26 | 2024-04-14 | 1585
 38 | Data Pipelines Intensivo | DevOps | inic | 678.9 | 2024-11-12 | 1953
 39 | Graph Analytics do Zero | IoT | inic | 941.01 | 2025-03-30 | 2064
 40 | SQL Essentials 2025 | Mobile | inter | 847.99 | 2025-02-24 | 2020
 41 | Docker & Kubernetes Pro | DBA | inter | 900.22 | 2025-08-26 | 4678
 42 | Cassandra Hands-on Pro | Cloud | avanc | 926.13 | 2025-06-11 | 3743
 43 | PostgreSQL Mastery 2025 | Data | inic | 783.01 | 2024-06-27 | 857
 44 | Data Pipelines do Zero | Cloud | inter | 888.57 | 2024-09-24 | 3070
```

```
select * from usuario where tipo ilike '%ALUNO%' and id not in(select instrutor_id from curso);
```

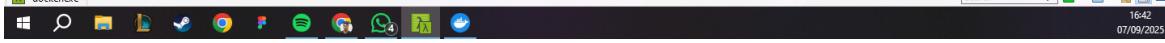
id	nome	email	tipo	criado_em
2	Mall Alves	mall.alves@infnet.edu.br	ALUNO	2024-08-29 09:00:00-03
3	Taylor Gonzaga	taylor.gonzaga@infnet.edu.br	ALUNO	2024-08-29 09:00:00-03
7	Sara Rocha	sara.rocha5178@yahoo.com	ALUNO	2024-12-02 06:31:01-03
19	Joao Souza	joaosouza45840@ufrrj.br	ALUNO	2024-10-26 19:48:17-03
22	Nina Monteiro	ninanamonteiro67178@outlook.com	ALUNO	2024-02-17 18:54:36-03
33	Julia Lima	juliulia1574@outlook.com	ALUNO	2025-07-31 13:03:13-03
43	Luana Freitas	luanafreitas10898@gmail.com	ALUNO	2024-05-25 23:39:22-03
45	Yasmin Xavier	yasminxavier58932@outlook.com	ALUNO	2024-10-13 03:34:37-03
46	Renata Santos	renatasantos44700@usp.br	ALUNO	2024-02-01 16:47:36-03
49	Paula Pereira	paulapereira63523@yahoo.com	ALUNO	2024-07-20 06:59:18-03
51	Carla Xavier	carlav Xavier12030@outlook.com	ALUNO	2025-03-02 18:56:37-03
52	Renato Monteiro	renatamonteiro3758@ufrrj.br	ALUNO	2025-02-07 21:19:39-03
57	Vitor Costa	vitorcosta4971@usp.br	ALUNO	2025-03-18 22:23:57-03
62	Maria Goncalves	mariagoncalves1990@edu.br	ALUNO	2024-03-10 18:00:00-03
68	Renata Pereira	renata.pereira57910@gmail.com	ALUNO	2023-02-23 14:04:56-03
70	Daniela Pereira	danielaperreira42960@ed	ALUNO	2024-11-25 19:44:17-03
76	Ana Silva	anasilva19836@ed	ALUNO	2024-04-13 13:01:58-03
80	Rodrigo Teixeira	rodrigoteixeira3669@ufrrj.br	ALUNO	2024-02-26 19:20:15-03
84	Fabio Melo	fabiomelo90220@uni.com.br	ALUNO	2024-11-30 16:33:36-03
85	Otavio Carvalho	otaviocarvalho957@umb.br	ALUNO	2024-01-12 02:59:40-03
94	Yasmin Goncalves	yasmingtongoncalves12778@yahoo.com	ALUNO	2024-02-05 22:47:39-03
96	Nina Silva	ninasilva12537@proton.me	ALUNO	2024-07-12 09:43:18-03
100	Karina Monteiro	karinamonteiro38004@uni.com.br	ALUNO	2024-04-09 22:38:14-03
108	Marina Teixeira	marinatexieira43456@usp.br	ALUNO	2024-05-06 05:14:51-03
114	Gabi Cavalcanti	gabivacalca114286@uni.com.br	ALUNO	2024-12-26 08:09:37-03
118	Hellen Farias	hellenfarias12839@ed	ALUNO	2024-07-08 11:00:46-03
124	Eduardo Monteiro	eduardomonteiro516@ed	ALUNO	2024-07-19 19:15:01-03
124	Eduardo Cavalcanti	eduardocavalcanti051947@ufrrj.br	ALUNO	2024-04-12 13:00:36-03
129	Eduardo Oliveira	eduardo oliveira50280@yahoo.com	ALUNO	2024-12-30 17:14:47-03
142	Gabi Freitas	gabifreitas90754@ufrrj.br	ALUNO	2024-04-12 02:30:58-03
147	Rodrigo Teixeira	rodrigoteixeira11665@proton.me	ALUNO	2024-09-05 16:21:14-03
148	Sara Araujo	saraarausj07225@infnet.edu.br	ALUNO	2025-02-16 21:36:04-03
154	Camila Rocha	camilarocha8262@gmail.com	ALUNO	2024-01-21 02:47:35-03
155	Thiago Monteiro	thiagomonteiro51947@ufrrj.br	ALUNO	2024-06-04 22:44:28-03
157	Daniela Cavalcanti	danielacavalcanti310@edu.br	ALUNO	2025-03-28 17:17:11-03
160	Vinicius Souza	viniciussouza42220@gmail.com	ALUNO	2024-04-14 04:47:36-03
164	Karina Farias	karinafarias23063@ufrrj.br	ALUNO	2024-04-06 13:28:41-03
165	Sara Costa	sara costa44640@ed	ALUNO	2025-03-16 01:22:04-03
166	Roberta Castro	roberta castro3858@infnet.edu.br	ALUNO	2024-09-15 08:01:32-03
169	Henrique Rocha	henrique rocha74320@usp.br	ALUNO	2024-03-25 06:17:12-03
180	Eduarda Silva	eduarda silva42987@gmail.com	ALUNO	2024-08-26 11:56:28-03
192	Sara Araujo	saraarausj02103@gmail.com	ALUNO	2025-07-14 06:01:19-03
197	Larissa Pinto	larissapinto09872@gmail.com	ALUNO	2024-09-18 12:20:50-03



Bloco E

```
select instrutor_id, string_agg(titulo,'' order by publicado_em) as cursos from curso
group by instrutor_id having count(*) > 3;
```

instrutor_id	cursos
5	Curso de GitHub,Análise de Dados,Engenharia da Computação,Engenharia de Software,Análise e Desenvolvimento de Sistemas
27	Machine Learning Intensivo,ETL com Python do Zero,Cassandra Hands-on para Negócios,ETL com Python para Negócios
95	Machine Learning Pro,Docker & Kubernetes 2025,Machine Learning,Spark SQL do Zero
159	PostgreSQL Mastery,Machine Learning com Python 2025,Machine Learning,Spark SQL do Zero,Graph Analytics Intensivo
160	SQL Essentials 2025,Data Pipelines para Negócios,SQL Essentials 2025,Redis Turbo Intensivo
159	SQL Essentials 2025,Data Pipelines para Negócios,SQL Pipelines 2025,Redis Turbo Intensivo
217	Spark SQL 2025,Redis Turbo Intensivo,ETL com Python do Zero,Spark SQL Pro
355	Data Pipelines Intensivo,Redis Turbo Intensivo,Graph Analytics Pro,Cassandra Hands-on do Zero
487	Cassandra Hands-on,Graph Analytics Pro,ETL com Python do Zero,PostgreSQL Mastery para Negócios
505	Spark Analytics Intensivo,Graph Analytics Intensivo,Cassandra Hands-on 2025,Cassandra Hands-on do Zero
513	Spark SQL,APIs REST,Graph Analytics,Redis Turbo para Negócios
573	APIs REST para Negócios,Docker & Kubernetes Intensivo,SQL Essentials 2025,SQL Essentials,Data Pipelines
653	Cassandra Hands-on do Zero,Data Pipelines do Zero,Spark SQL Intensivo,Spark SQL Pro
675	Machine Learning para Negócios,Cassandra Hands-on do Zero,Spark SQL do Zero,SQL Essentials Intensivo,Cassandra Hands-on do Zero
783	Graph Analytics para Negócios,ETL com Python 2025,Graph Analytics Intensivo,APIs REST 2025
801	Cassandra Hands-on do Zero,Cassandra Hands-on do Zero,Data Pipelines 2025,ETL com Python 2025
842	APIs REST Intensivo,APIs REST para Negócios,SQL Essentials Intensivo,Spark SQL Intensivo
850	Docker & Kubernetes para Negócios,Redis,Tutorial PostgreSQL Mastery,Redis com Python Intensivo
887	Data Pipelines Intensivo,PostgreSQL Mastery,Redis com Python Intensivo,Cassandra Hands-on do Zero,Cassandra Hands-on
988	PostgreSQL Mastery,Intensivo,PostgreSQL Mastery,Redis com Python Intensivo,Cassandra Hands-on do Zero,Cassandra Hands-on
1054	Graph Analytics Intensivo,Spark SQL do Zero,Spark SQL do Zero,APIs REST 2025,Cassandra Hands-on para Negócios
1278	ETL com Python,Data Pipelines do Zero,ETL com Python Intensivo,Machine Learning 2025
1296	Cassandra Hands-on 2025,SQL Essentials 2025,Docker & Kubernetes do Zero,Data Pipelines Pro
1361	Data Pipelines,PostgreSQL Mastery 2025,APIs REST,Machine Learning
1439	APIs REST para Negócios,Redis Turbo 2025,Cassandra Hands-on Intensivo,Docker & Kubernetes Pro
1589	Spark SQL,ETL com Python,APIs REST Intensivo,ETL com Python do Zero
1631	Machine Learning Pro,Cassandra Hands-on,ETL com Python Pro,Graph Analytics Pro
1666	Graph Analytics para Negócios,ETL com Python do Zero,APIs REST do Zero,Redis Turbo Intensivo
1680	PostgreSQL Mastery Pro,Data Pipelines do Zero,ETL com Python do Zero,SQL Essentials do Zero
1718	Docker & Kubernetes do Zero,Spark SQL Pro,Graph Analytics para Negócios,Cassandra Hands-on,Pro,Machine Learning
1873	Data Pipelines para Negócios,Cassandra Hands-on para Negócios,PostgreSQL Mastery 2025,Redis Turbo Pro
1959	Data Pipelines do Zero,Spark SQL do Zero,Graph Analytics 2025,PostgreSQL Mastery 2025
1975	PostgreSQL Mastery,Graph Analytics Intensivo,Cassandra Hands-on Intensivo,Spark SQL Intensivo
2141	Data Pipelines 2025,APIs REST Intensivo,ETL com Python,SQL Essentials para Negócios,Redis Turbo do Zero,Data Pipelines Intensivo
2232	APIs REST,APIs REST Intensivo,Spark SQL
2238	Cassandra Hands-on,Data Pipelines Intensivo,APIs REST 2025,APIs REST
2240	Data Pipelines,Spark SQL do Zero,PostgreSQL Mastery Pro,ETL com Python do Zero,ETL com Python Pro
2243	ETL com Python,Spark SQL 2025,PostgreSQL Mastery,Cassandra Hands-on Intensivo
2369	Cassandra Hands-on 2025,SQL Essentials Pro,Data Pipelines 2025,SQL Essentials Intensivo
2421	Redis Turbo 2025,PostgreSQL Mastery 2025,Machine Learning para Negócios,Data Pipelines Pro
2517	ETL com Python para Negócios,Data Pipelines 2025,Docker & Kubernetes Intensivo,Cassandra Hands-on Intensivo
2548	Spark SQL do Zero,Graph Analytics,ETL com Python,SQL Essentials
2589	APIs REST Pro,PostgreSQL Mastery do Zero,Data Pipelines 2025,Data Pipelines para Negócios
2608	SQL Essentials para Negócios,PostgreSQL Mastery Pro,APIs REST 2025,Data Pipelines
2608	PostgreSQL Mastery Intensivo,PostgreSQL Mastery para Negócios,Data Pipelines Intensivo,Machine Learning



```
select substring(email, position('@' in email)) as dominio_email, count(*) from usuario
group by dominio_email order by dominio_email desc;
```

```
Cmder
LINE 1: select substring(email,charindex('@',email),len(email)) as dominio_email
^
postgres=# select substring(email,charindex('@',email),len(email)) as dominio_email from usuario group by dominio_email order by dominio_email desc;
ERROR: function charindex(unknown, text) does not exist
LINE 1: select substring(email,charindex('@',email),len(email)) as dominio_email
^
HINT: No function matches the given name and argument types. You might need to add explicit type casts.
postgres=# select substring(email, position('@' in email), len(email)) as dominio_email from usuario group by dominio_email order by dominio_email desc;
ERROR: function len(text) does not exist
LINE 1: select substring(email, position('@' in email), len(email)) ...
^
HINT: No function matches the given name and argument types. You might need to add explicit type casts.
postgres=# select substring(email, position('@' in email)) as dominio_email from usuario group by dominio_email order by dominio_email desc;
      dominio_email
-----
@yahoo.com          460
@usp.br            472
@uni.com.br        461
@unesp.br          450
@unb.br             420
@ufrj.br            419
@proton.me         492
@prof.infnet.edu.br    1
@outlook.com       443
@infnet.edu.br     444
@gmail.com          444
@edu.br              495
@al.infnet.edu.br      4
(13 rows)

postgres=# select substring(email, position('@' in email)) as dominio_email, count(*) from usuario group by dominio_email order by dominio_email desc;
      dominio_email | count
-----+-----
@yahoo.com          | 460
@usp.br            | 472
@uni.com.br        | 461
@unesp.br          | 450
@unb.br             | 420
@ufrj.br            | 419
@proton.me         | 492
@prof.infnet.edu.br | 1
@outlook.com       | 443
@infnet.edu.br     | 444
@gmail.com          | 444
@edu.br              | 495
@al.infnet.edu.br      | 4
(13 rows)

postgres=#
[1] docker.exe
[2] Search
[3] 23:07
[4] 31/08/2025
```

Bloco F

```
select * from pagamento where status='OK' and valor_pago <=0;
select * from pagamento where status='OK' and valor_pago >=0;
```

```
Cmder
ERROR: column "curso.id" must appear in the GROUP BY clause or be used in an aggregate function
LINE 1: select * from curso having preco >= avg(preco);
^
postgres=# select * from pagamento where status='OK' and valor_pago <=0;
id | matricula_id | valor_pago | realizado_em | meio | status
---+---+---+---+---+---+
(0 rows)

postgres=# select * from pagamento where status='OK' and valor_pago >=0;
      id | matricula_id | valor_pago | realizado_em | meio | status
-----+-----+-----+-----+-----+-----+
      1 |           1 |      1250 | 2020-01-02 00:00:00-03 | CARTAO | OK
      2 |           2 |       875 | 2024-05-30 00:00:00-03 | PIX | OK
      5 |           5 |      6250 | 2019-09-10 00:00:00-03 | BOLETO | OK
      6 |           6 |      1000 | 2024-12-10 00:00:00-03 | PIX | OK
      7 |           7 |      1000 | 2023-11-07 00:00:00-03 | CARTAO | OK
      8 |           8 |      2700 | 2018-10-28 00:00:00-03 | BOLETO | OK
     12 |        11441 |     176.73 | 2025-04-11 13:26:44-03 | BOLETO | OK
     13 |       17588 |     264.37 | 2024-03-20 11:34:50-03 | PIX | OK
     15 |         964 |     189.5 | 2025-06-09 09:51:39-03 | PIX | OK
     16 |       3611 |     288.98 | 2025-05-15 17:56:19-03 | BOLETO | OK
     17 |       17271 |     1680.67 | 2024-05-05 10:04:44-03 | CARTAO | OK
     19 |        8491 |     1000.4 | 2024-05-05 11:06:45-03 | PIX | OK
     20 |      16249 |     748.46 | 2024-05-16 04:25:35-03 | PIX | OK
     23 |      10832 |     762.53 | 2024-05-03 18:14:21-03 | CARTAO | OK
     24 |      11575 |     1177.21 | 2024-03-20 09:25:08-03 | CARTAO | OK
     25 |         893 |     817.82 | 2024-01-21 13:01:18-03 | CARTAO | OK
     26 |     14657 |     1196.06 | 2024-08-21 07:28:03-03 | PIX | OK
     27 |        2241 |      545.01 | 2024-04-18 02:28:04-03 | PIX | OK
     29 |      10031 |     1450.89 | 2024-12-18 01:57:08-03 | BOLETO | OK
     30 |      19003 |      87.56 | 2024-04-20 00:51:05-03 | BOLETO | OK
     31 |      4221 |      98.51 | 2024-01-02 14:49:56-03 | BOLETO | OK
     32 |      16437 |     613.6 | 2025-05-23 20:38:42-03 | CARTAO | OK
     33 |      16436 |     148.43 | 2024-09-09 06:52:35-03 | BOLETO | OK
     34 |      13180 |      58.19 | 2024-07-01 07:45:10-03 | BOLETO | OK
     35 |      37653 |     136.15 | 2024-07-17 02:53:34-03 | BOLETO | OK
     36 |      13408 |     1244.76 | 2025-07-04 03:33:13-03 | PIX | OK
     39 |      18692 |     1889.45 | 2025-03-01 18:00:31-03 | BOLETO | OK
     40 |      15322 |      654.06 | 2024-08-14 03:39:07-03 | BOLETO | OK
     41 |      2881 |     1459.51 | 2025-04-23 03:14:19-03 | BOLETO | OK
     42 |      16327 |     227.09 | 2025-07-15 10:36:58-03 | BOLETO | OK
     43 |      4904 |     1318.63 | 2025-08-26 09:51:51-03 | BOLETO | OK
     44 |     11447 |     107.86 | 2025-01-01 23:08:50-03 | BOLETO | OK
     45 |     11067 |     1491.8 | 2025-08-24 09:02:24-03 | PIX | OK
     47 |      9556 |     1321.08 | 2024-03-17 04:19:39-03 | CARTAO | OK
     48 |      9814 |      73.65 | 2024-02-12 05:18:21-03 | CARTAO | OK
     49 |     10893 |      679.96 | 2025-03-02 08:57:46-03 | BOLETO | OK
     50 |     16777 |      77.56 | 2024-01-01 18:43:02-03 | BOLETO | OK
     51 |      8901 |     547.43 | 2024-01-03 16:31:00-03 | PIX | OK
(51 rows)

postgres=
[1] docker.exe
[2] Search
[3] 22:32
[4] 31/08/2025
```

```
select email, count(*) from usuario group by email having count(*) > 1
```

```
cmdr C:\> eduardacavalcanti3238@infnet.edu.br | 1  
henriquerocha38457@outlook.com | 1  
karinallima6486@edu.br | 1  
paularodrigues45745@proton.me | 1  
gabisilva08435@usp.br | 1  
carlaoliveira18972@uni.com.br | 1  
camilaafarias42969@uni.com.br | 1  
robertaferreiras2113@proton.me | 1  
priscillaaraajo49887@outlook.com | 1  
rafaelrodriques91759@unesp.br | 1  
joaoalvino88509@outlook.com | 1  
otaviofariasas36502@outlook.com | 1  
otaviojorgeveiga8838@outlook.com | 1  
renatafaria12@outlook.com | 1  
leonardocostas90666@outlook.com | 1  
beatrizfernanda3827@gmail.com | 1  
thiagobarbosaa62792@umb.br | 1  
saracavalanti57732@unesp.br | 1  
luanapereira13253@uni.com.br | 1  
marinasouza89688@frj.br | 1  
camilacavalanti6580@proton.me | 1  
renatacardoso17455@proton.me | 1  
karinaoliveira28645@yahoo.com | 1  
ningomes29534@outlook.com | 1  
rodrigorodrigues1737@unb.br | 1  
pedronunes23230@outlook.com.br | 1  
pedroscillegos39110@outlook.com.br | 1  
diegofarias7484@proton.me | 1  
fabiorocha49817@proton.me | 1  
rafaelfarias38859@uni.com.br | 1  
gabillima71541@outlook.com | 1  
diegoointo95443@gmail.com | 1  
juliamelo73775@yahoo.com | 1  
gustavoauj091696@uni.com.br | 1  
pedrosales29454@edu.br | 1  
larissasales43883@unb.br | 1  
beatrizfarias50419@uni.com.br | 1  
hemiricentes77882@yahoo.com | 1  
pedronunes23230@outlook.com.br | 1  
robertalima35972@frj.br | 1  
eduardapinto59112@outlook.com.br | 1  
luanaharbos36878@usp.br | 1  
karinacavalanti47021@infnet.edu.br | 1  
postgres=# select email, count(*) from usuario group by email having count(*) > 1;  
email | count  
-----+-----  
(0 rows)  
postgres=# |
```

docker.exe

Search 22:39 31/08/2025