

# Criando serviço no Heroku



# Introdução

- Utilizaremos o provedor de serviços Heroku (<https://www.heroku.com/>).
- O primeiro passo é logar no Heroku (se não tiver usuário precisará criar um).
- Uma vez logado no dashboard do Heroku:

<https://dashboard.heroku.com/apps>

deve-se clicar no botão:

**New → Create New App**

The screenshot shows the Heroku 'Free account' creation page. It features three main sections: 'Free account', 'Your app platform', and 'Deploy now'. The 'Free account' section describes creating apps, connecting databases, and collaborating for free. The 'Your app platform' section describes a platform for app management and scaling. The 'Deploy now' section describes going from code to a running app in minutes. A red arrow points from the text 'deve-se clicar no botão: New → Create New App' to the 'Deploy now' button. On the right side, there is a form for creating a free account with fields for First name, Last name, Email address, Company name, Role, Country, and Primary development language. At the bottom of the form is a reCAPTCHA checkbox labeled 'I'm not a robot' and a blue button labeled 'CREATE FREE ACCOUNT'.

**Free account**

Create apps, connect databases and add-on services, and collaborate on your apps, for free.

**Your app platform**

A platform for apps, with app management & instant scaling, for development and production.

**Deploy now**

Go from code to running app in minutes. Deploy, scale, and deliver your app to the world.

First name \*

First name

Last name \*

Last name

Email address \*

Email address

Company name

Company name

Role \*

Role

Country \*

Country

Primary development language \*

Select a language

☐ I'm not a robot

reCAPTCHA  
Privacy · Terms


**CREATE FREE ACCOUNT**



# Criando o App no Heroku



Create New App

App name

abcde-app 


abcde-app is available

Choose a region

 United States 

Add to pipeline...

Create app

Personal > abcde-app  Open app More

Overview Resources Deploy Metrics Activity Access Settings



# Provisionando o PostgreSQL

Personal > abcde-app

Overview Resources Deploy Metrics Activity Access Settings

Dynos

This app has no process types yet  
Add a Procfile to your app in order to define its process types. [Learn more](#)

Add-ons Find more add-ons

Search: Pg

- Draxlr for Postgres / MySQL
- Heroku Postgres**
- PointDNS
- PopSQL
- Application Portfolio Manager

PostgreSQL providionado

Heroku Postgres Attached as DATABASE Hobby Dev Free

Estimated Monthly Cost \$0.00

Heroku Postgres → abcde-app

By choosing "Online Order Form", this will add **Heroku Postgres** on your personal **abcde-app** application.

Plan name  
Hobby Dev – Free

[View add-on details in Elements Marketplace](#)

By submitting this order form, you agree that the Add-on is governed by the applicable provider's terms of use, and the Heroku Services are governed by the [Salesforce Master Subscription Agreement](#), unless (except for free customers) you have entered into a written Master Subscription Agreement executed by SFDC for the Heroku Services as referenced in the Documentation.

**Submit Order Form**





# Rodando o script de criação de banco

- Precisamos agora utilizar o script gerado na aula anterior (abcde\_db.sql) para criar as tabelas no banco PostgreSQL que está associado ao nosso aplicativo lá no Heroku.
- O primeiro passo é obter as configurações do banco PostgreSQL gerado pelo Heroku para o nosso serviço (App).
- Para isso é necessário ir a Settings → Config Vars é pegar o conteúdo da variável DATABASE\_URL:

Config Vars

Config vars change the way your app behaves.  
In addition to creating your own, some additions come with their own.

Hide Config Vars

DATABASE_URL	postgres://rmuywzksxnqoxs:085318bcfefff83	 
KEY	VALUE	Add



# DATABASE\_URL

- O conteúdo dessa variável para nossa aplicação é:

postgres://

rmuywzksxnqoxs:085318bcfefff83921e0c65c11e0f6302a928a170948ab902c65eda53650dbc5@ec2-34-233-114-40.compute-1.amazonaws.com:5432/da0ef1gg4j2if4

- Vamos agora extrair as informações:
  - **Usuário:** rmuywzksxnqoxs (texto até os “:”)
  - **Senha:**  
085318bcfefff83921e0c65c11e0f6302a928a170948ab902c65eda53650dbc5 (texto até o @).
  - **Servidor:** ec2-34-233-114-40.compute-1.amazonaws.com (até os “:”)
  - **Porta:** 5432 (até a /)
  - **Base de dados:** da0ef1gg4j2if4 (o que sobrou)



# Criando o servidor no pgAdmin

pgAdmin 4

File Object Tools Help

Browser

Servers (2)

Create

Server Group...

Server...

Refresh...

Remove Server Group

Properties...

Create - Server

General Connection SSL SSH Tunnel Advanced

Name abcde\_app\_db

Create - Server

General Connection SSL SSH Tunnel Advanced

Host address

DB restriction da0ef1gg4j2if4

Password file

Connection timeout (seconds) 10

Para listar apenas a nossa base de dados e não todas do servidor

Create - Server

General Connection SSL SSH Tunnel Advanced

Host name/address ec2-34-233-114-40.compute-1.amazonaws.com

Port 5432

Maintenance database da0ef1gg4j2if4

Username rmuywzksxnqoxs

Password

Save password? ☒

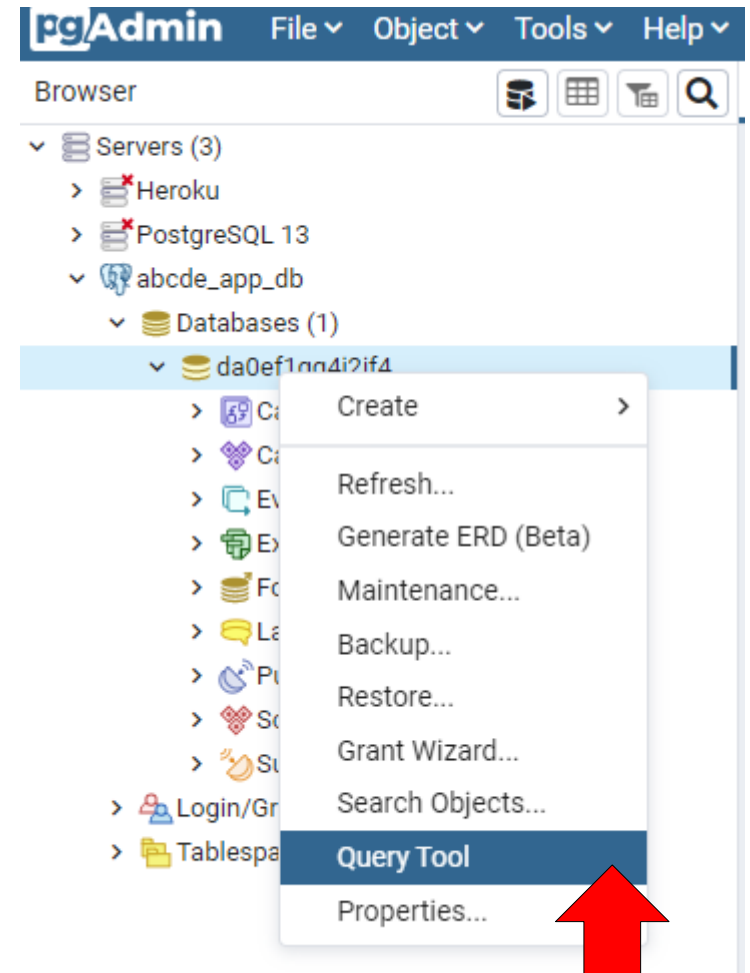
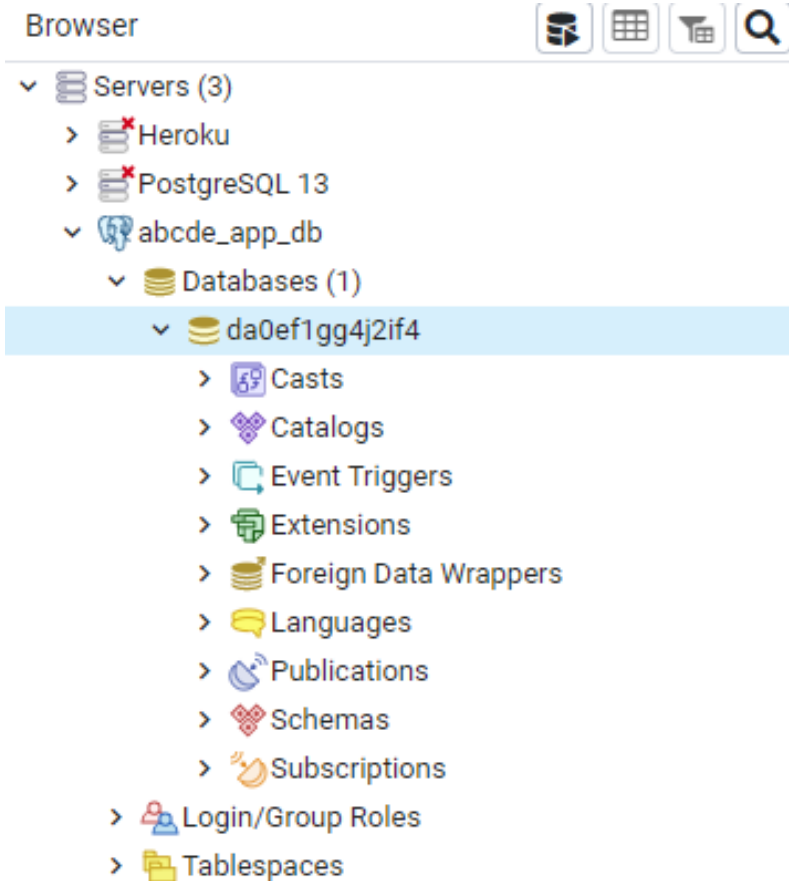
Role

Service

Cancel Reset Save

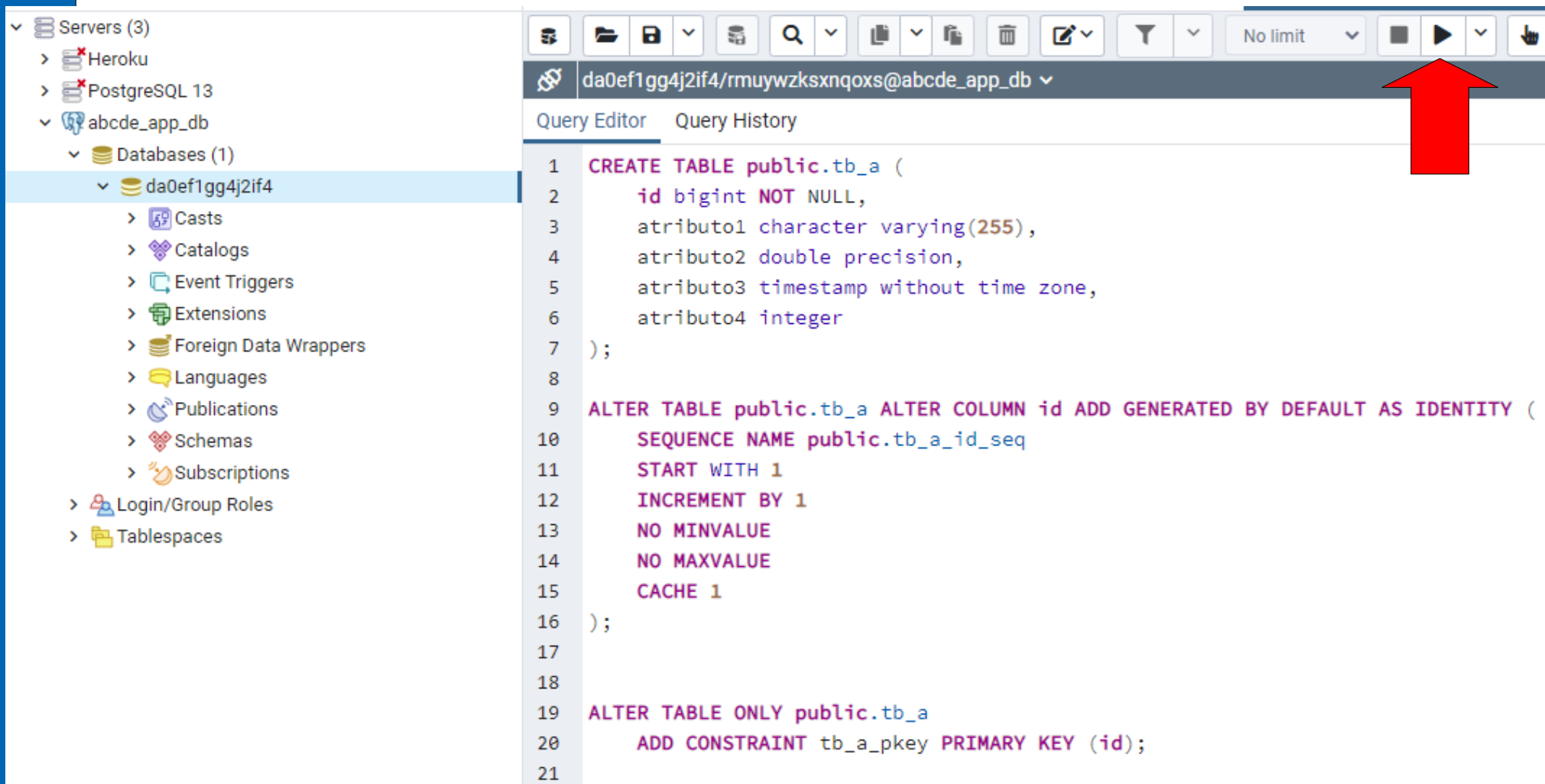
Cancel Reset Save

# Visualizando a base de dados (no Heroku) usando pgAdmin





# Rodando o script abcde\_db.sql



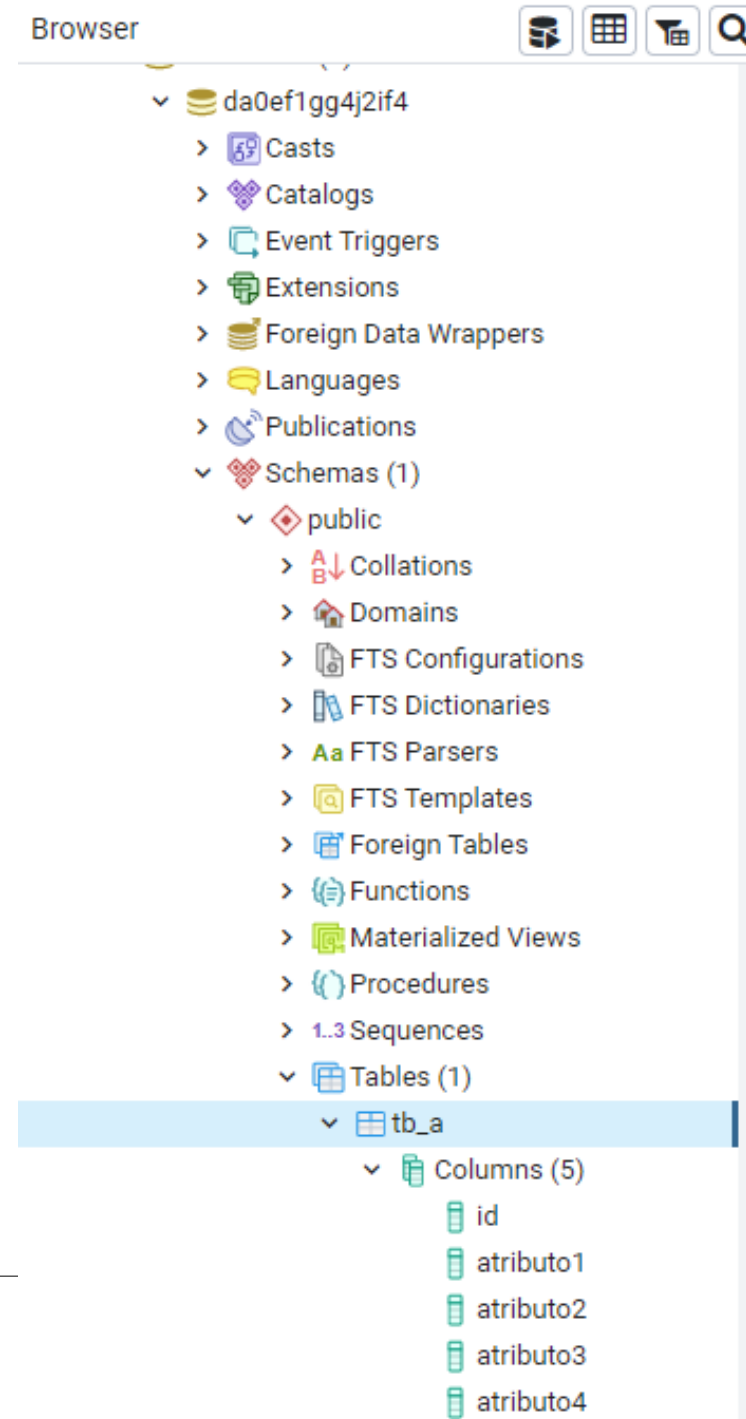
The screenshot displays a database management tool interface. On the left, a tree view shows the database structure, including servers (Heroku, PostgreSQL 13, abcde\_app\_db) and databases (da0ef1gg4j2if4). The main area shows a SQL script in the Query Editor, with a red arrow pointing to the 'Run' button (a play icon) in the top right toolbar. The script defines a table 'public.tb\_a' with columns 'id', 'atributo1', 'atributo2', 'atributo3', and 'atributo4'. It also includes an 'ALTER TABLE' statement to add a primary key constraint 'tb\_a\_pkey' on the 'id' column.

```
1 CREATE TABLE public.tb_a (  
2     id bigint NOT NULL,  
3     atributo1 character varying(255),  
4     atributo2 double precision,  
5     atributo3 timestamp without time zone,  
6     atributo4 integer  
7 );  
8  
9 ALTER TABLE public.tb_a ALTER COLUMN id ADD GENERATED BY DEFAULT AS IDENTITY (  
10     SEQUENCE NAME public.tb_a_id_seq  
11     START WITH 1  
12     INCREMENT BY 1  
13     NO MINVALUE  
14     NO MAXVALUE  
15     CACHE 1  
16 );  
17  
18  
19 ALTER TABLE ONLY public.tb_a  
20     ADD CONSTRAINT tb_a_pkey PRIMARY KEY (id);  
21
```



# Resultado do script

- Ao lado podemos verificar que a base de dados PostgreSQL provisionada para o nosso serviço (App) já está com a tabela **tb\_a** criada (assim como teria feito com outras tabelas caso nosso script fosse mais complexo).



# Instalando o Heroku CLI

- Na ABA Deploy do dashboard do Heroku temos instruções para o deploy do App (o primeiro passo é clicar no link Heroku CLI e promover a instalação):

## Deploy using Heroku Git

Use git in the command line or a GUI tool to deploy this app.

## Install the Heroku CLI

Download and install the [Heroku CLI](#).

If you haven't already, log in to your Heroku account and follow the prompts to create a new SSH public key.

```
$ heroku login
```

## Create a new Git repository

Initialize a git repository in a new or existing directory

```
$ cd my-project/  
$ git init  
$ heroku git:remote -a abcde-app
```

## Deploy your application

Commit your code to the repository and deploy it to Heroku using Git.

```
$ git add .  
$ git commit -am "make it better"  
$ git push heroku master
```



You can now change your main deploy branch from "master" to "main" for both manual and automatic deploys, please follow the instructions [here](#).

## Existing Git repository

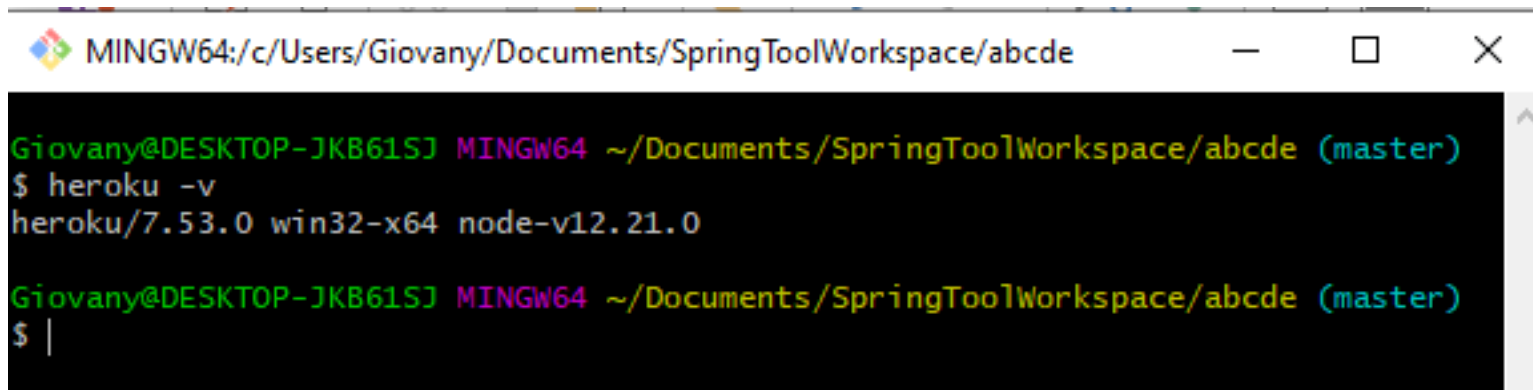
For existing repositories, simply add the `heroku` remote

```
$ heroku git:remote -a abcde-app
```



# Testando a instalação do Heroku CLI

- No terminal do Git:



A screenshot of a Windows terminal window. The title bar shows the path 'MINGW64:/c/Users/Giovany/Documents/SpringToolWorkspace/abcde'. The terminal content shows the user 'Giovany@DESKTOP-JKB61SJ' in the 'MINGW64' environment at the directory '~/Documents/SpringToolWorkspace/abcde' on the 'master' branch. They run the command '\$ heroku -v', which outputs 'heroku/7.53.0 win32-x64 node-v12.21.0'. The prompt '\$ |' is visible on the next line.

```
MINGW64:/c/Users/Giovany/Documents/SpringToolWorkspace/abcde

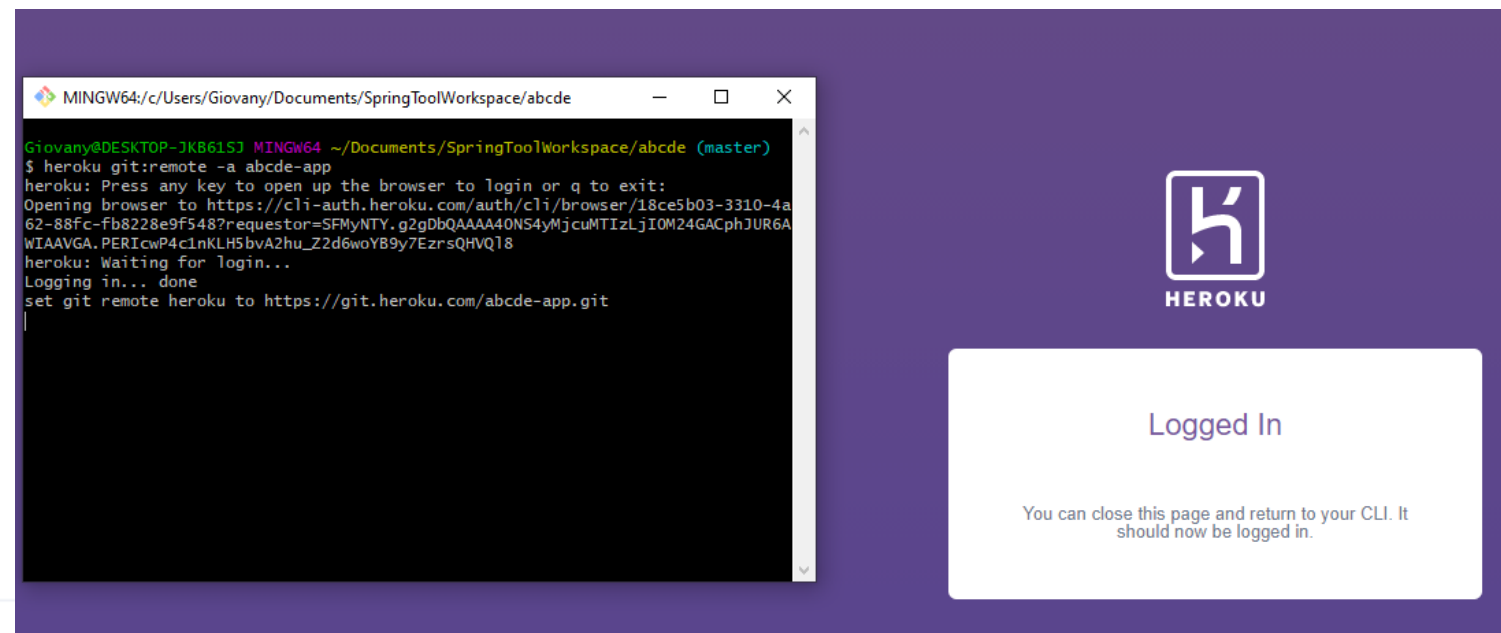
Giovany@DESKTOP-JKB61SJ MINGW64 ~/Documents/SpringToolWorkspace/abcde (master)
$ heroku -v
heroku/7.53.0 win32-x64 node-v12.21.0

Giovany@DESKTOP-JKB61SJ MINGW64 ~/Documents/SpringToolWorkspace/abcde (master)
$ |
```



# Deploy do App no Heroku

- O Heroku possui integração com o Git dessa forma será necessário associar nosso projeto ao Heroku.



Existing Git repository

For existing repositories, simply add the `heroku` remote

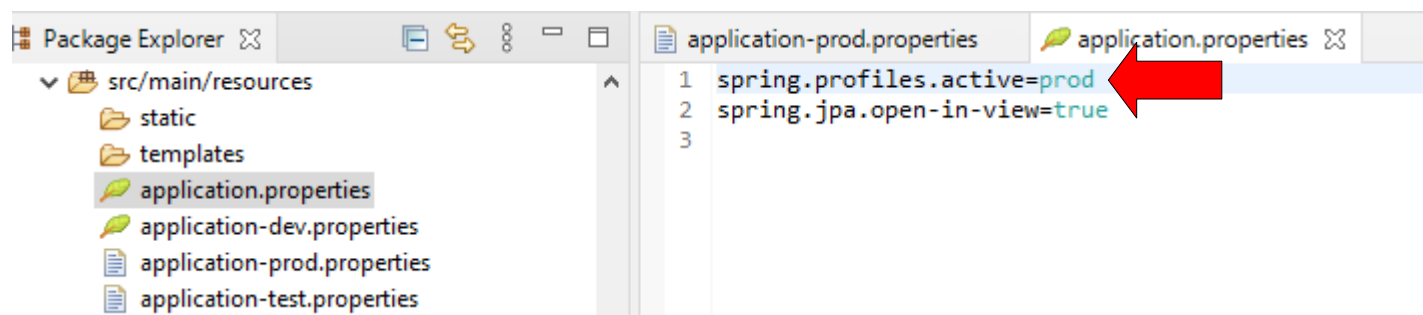
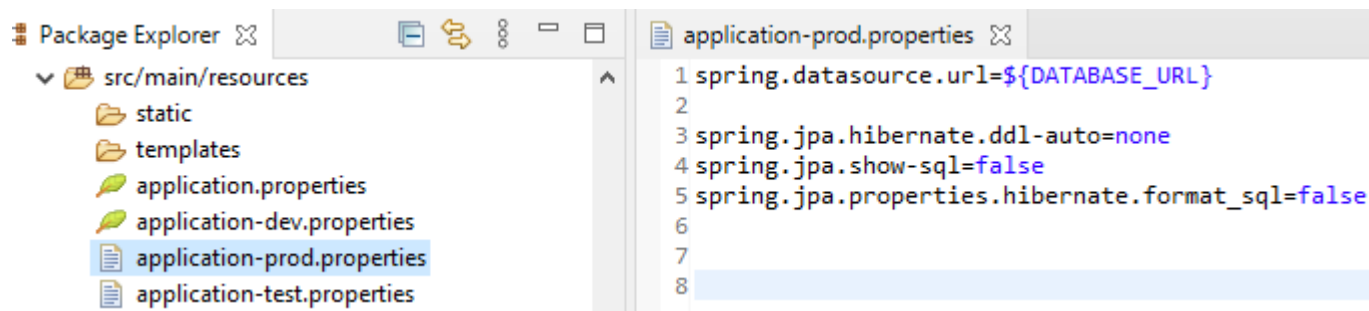
```
$ heroku git:remote -a abcde-app
```

The image shows a terminal window with a title bar 'MINGW64: c:/Users/Giovany/Documents/SpringToolWorkspace/abcde'. The command prompt shows 'Giovany@DESKTOP-JKB61S3 MINGW64 ~/Documents/SpringToolWorkspace/abcde (master)'. The user enters '\$ git remote -v'. The output shows 'heroku https://git.heroku.com/abcde-app.git (fetch)', 'heroku https://git.heroku.com/abcde-app.git (push)', 'origin https://github.com/GiovanyFT/abcde.git (fetch)', and 'origin https://github.com/GiovanyFT/abcde.git (push)'.



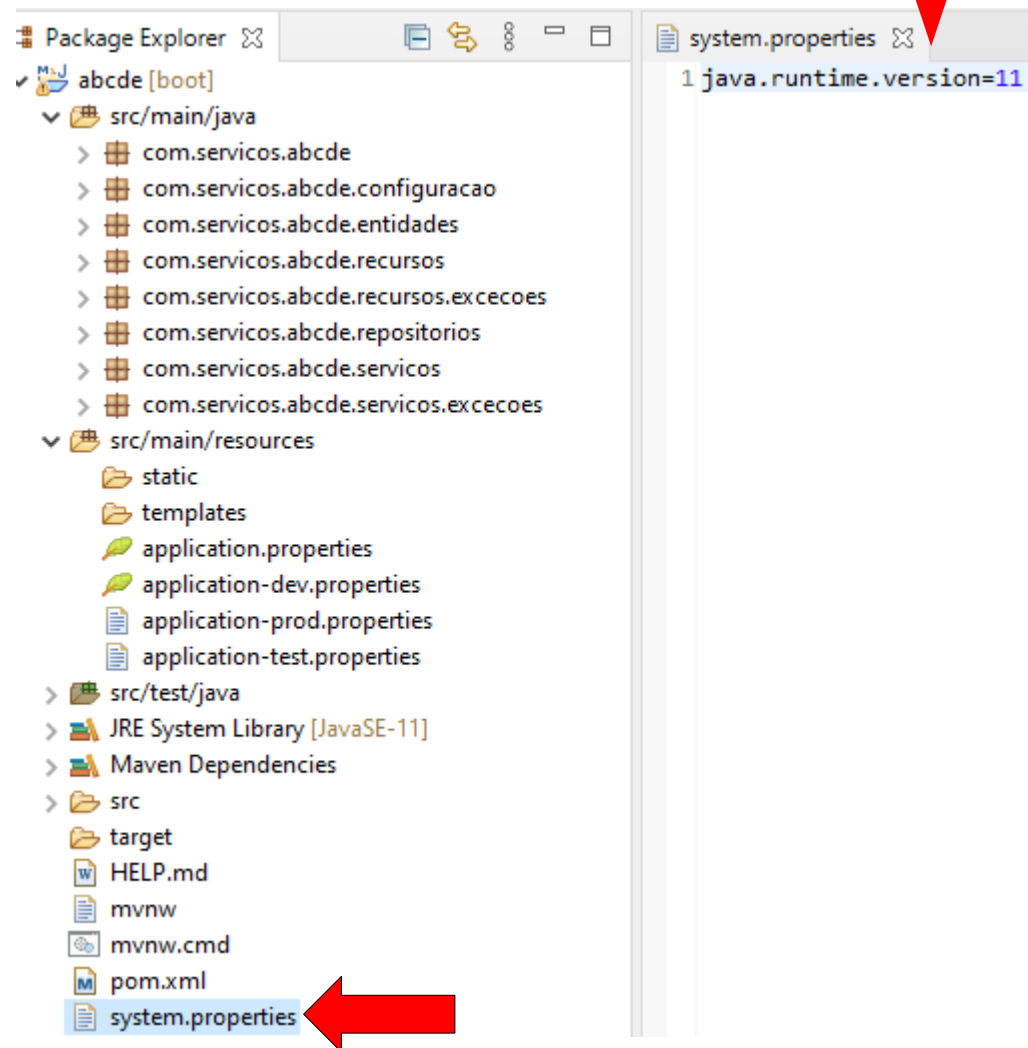
# application-prod.properties

- Precisamos agora de um arquivo, no projeto, com as configurações de produção:



# Avisando para o Heroku a versão do Java

- Deve-se criar o arquivo system.properties



# Enviando para o Heroku

```
MINGW64:/c/Users/Giovany/Documents/SpringToolWorkspace/abcde

Giovany@DESKTOP-JKB61SJ MINGW64 ~/Documents/SpringToolWorkspace/abcde (master)
$ git add .
warning: LF will be replaced by CRLF in src/main/resources/application.properties.
The file will have its original line endings in your working directory

Giovany@DESKTOP-JKB61SJ MINGW64 ~/Documents/SpringToolWorkspace/abcde (master)
$ git commit -m "Deploy para o Heroku"
[master 6a48602] Deploy para o Heroku
3 files changed, 9 insertions(+), 1 deletion(-)
create mode 100644 src/main/resources/application-prod.properties
create mode 100644 system.properties

Giovany@DESKTOP-JKB61SJ MINGW64 ~/Documents/SpringToolWorkspace/abcde (master)
$ git push heroku master
```

```
MINGW64:/c/Users/Giovany/Documents/SpringToolWorkspace/abcde

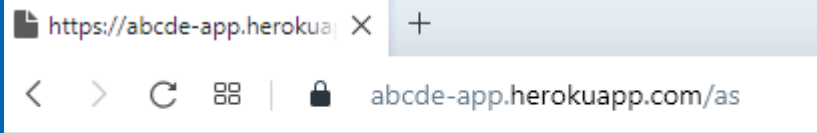
-----
remote:      [INFO] BUILD SUCCESS
remote:      [INFO] -----
-----
remote:      [INFO] Total time: 23.579 s
remote:      [INFO] Finished at: 2021-06-25T17:26:43Z
remote:      [INFO] -----
-----
remote: ----> Discovering process types
remote: Procfile declares types -> (none)
remote: Default types for buildpack -> web
remote: ----> Compressing...
remote: Done: 93.6M
remote: ----> Launching...
remote: Released v5
remote: https://abcde-app.herokuapp.com/ deployed to Heroku
remote: Verifying deploy... done.
To https://git.heroku.com/abcde-app.git
 * [new branch] master -> master

Giovany@DESKTOP-JKB61SJ MINGW64 ~/Documents/SpringToolWorkspace/abcde (master)
$ |
```





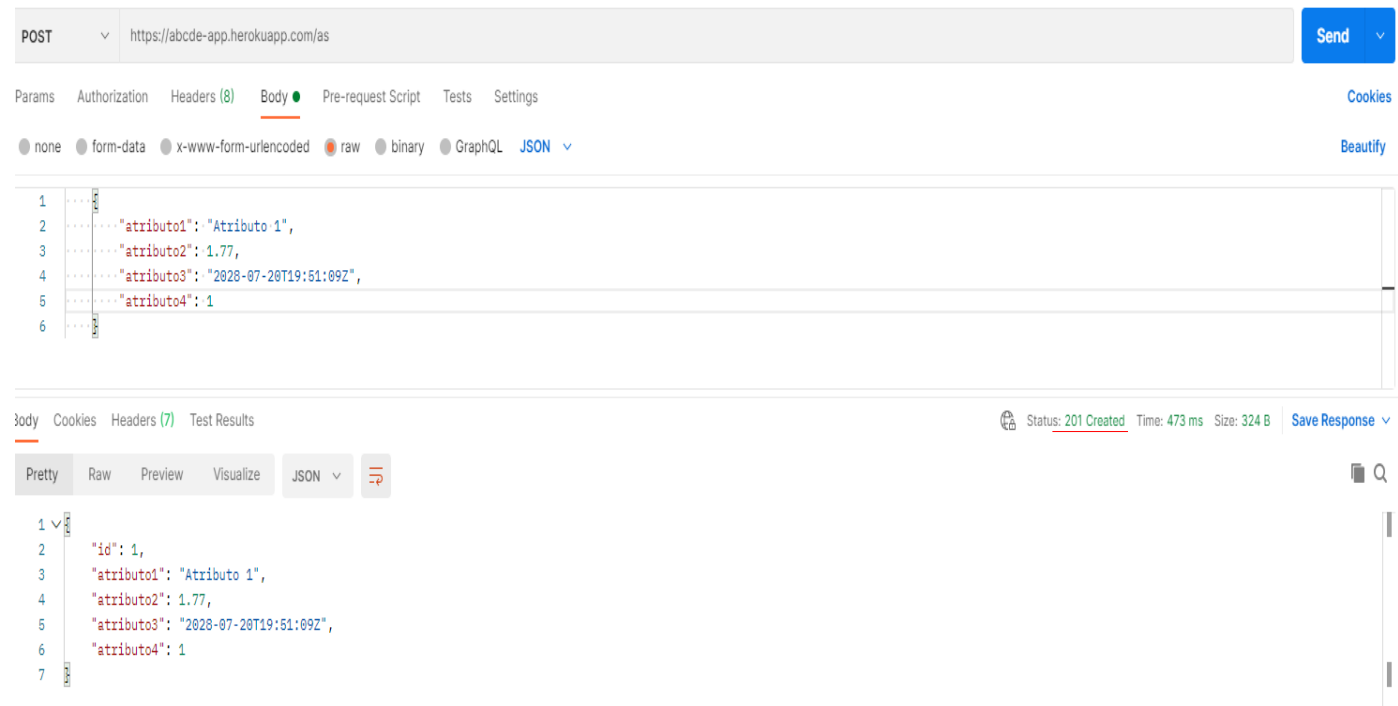
# Testando o serviço (a aplicação)



[ ]

## Base de dados vazia

### Inserindo um registro



# Testando o serviço (a aplicação)

The screenshot displays a REST client interface with a POST request to `https://abcde-app.herokuapp.com/as`. The request body is a JSON object with four attributes. The response status is 201 Created, with a time of 491 ms and a size of 324 B. The response body is a JSON object with the same four attributes, plus an 'id' field set to 2.

**Request:**

```
POST https://abcde-app.herokuapp.com/as
```

**Body (JSON):**

```
{  "atributo1": "Atributo 2",  "atributo2": 2.77,  "atributo3": "2028-07-20T19:51:09Z",  "atributo4": 2}
```

**Response:**

```
Status: 201 Created Time: 491 ms Size: 324 B
```

**Body (JSON):**

```
{  "id": 2,  "atributo1": "Atributo 2",  "atributo2": 2.77,  "atributo3": "2028-07-20T19:51:09Z",  "atributo4": 2}
```

**Inserindo o segundo registro**




# Testando o serviço (a aplicação)

https://abcde-app.herokuapp.com/as/1 **Buscando os registros inseridos**

< > ⌂ 🔒 abcde-app.herokuapp.com/as

[{"id":1,"atributo1":"Atributo 1","atributo2":1.77,"atributo3":"2028-07-20T19:51:09Z","atributo4":1}, {"id":2,"atributo1":"Atributo 2","atributo2":2.77,"atributo3":"2028-07-20T19:51:09Z","atributo4":2}]


GET https://abcde-app.herokuapp.com/as/1  **Send**

Params Authorization Headers (8) Body ● Pre-request Script Tests Settings Cookies

Query Params

KEY	VALUE	DESCRIPTION	...	Bulk Edit
-----	-------	-------------	-----	-----------

Body Cookies Headers (6) Test Results Status: 200 OK Time: 187 ms Size: 271 B Save Response

Pretty Raw Preview Visualize JSON 

```
1 {
2   "id": 1,
3   "atributo1": "Atributo 1",
4   "atributo2": 1.77,
5   "atributo3": "2028-07-20T19:51:09Z",
6   "atributo4": 1
7 }
```

**Buscando por id**



# Testando o serviço (a aplicação)

PUT <https://abcde-app.herokuapp.com/as/1> Send

Params Authorization Headers (8) **Body** Pre-request Script Tests Settings

none form-data x-www-form-urlencoded raw binary GraphQL **JSON**

```
1 .....
2 ..... "atributo1": "Atributo 1 - Modificado",
3 ..... "atributo2": 111.77,
4 ..... "atributo3": "2028-07-20T19:51:09Z",
5 ..... "atributo4": 111
6 .....
```

**Atualizando um registro**

Body Cookies Headers (6) Test Results Status: 200 OK Time: 532 ms Size: 288 B Save Response

Pretty Raw Preview Visualize **JSON**

```
1 {
2   "id": 1,
3   "atributo1": "Atributo 1 - Modificado",
4   "atributo2": 111.77,
5   "atributo3": "2028-07-20T19:51:09Z",
6   "atributo4": 111
7 }
```

<https://abcde-app.herokuapp.com/as>

```
[{"id":1,"atributo1":"Atributo 1","atributo2":1.77,"atributo3":"2028-07-20T19:51:09Z","atributo4":1}, {"id":2,"atributo1":"Atributo 2","atributo2":2.77,"atributo3":"2028-07-20T19:51:09Z","atributo4":2}]
```

<https://abcde-app.herokuapp.com/as>

```
[{"id":2,"atributo1":"Atributo 2","atributo2":2.77,"atributo3":"2028-07-20T19:51:09Z","atributo4":2}, {"id":1,"atributo1":"Atributo 1 - Modificado","atributo2":111.77,"atributo3":"2028-07-20T19:51:09Z","atributo4":111}]
```



# Testando o serviço (a aplicação)



DELETE ▼ <https://abcde-app.herokuapp.com/as/2> Send ▼

Params Authorization Headers (8) Body ● Pre-request Script Tests Settings Excluindo um registro Cookies

Query Params

KEY	VALUE	DESCRIPTION	...	Bulk Edit
-----	-------	-------------	-----	-----------

Body Cookies Headers (5) Test Results Status: 204 No Content Time: 655 ms Size: 139 B Save Response ▼

Pretty Raw Preview Visualize Text ▼

<https://abcde-app.herokuapp.com/as> + Após a exclusão do registro de id = 2

< > ↺ ⌘ | 🔒 [abcde-app.herokuapp.com/as](https://abcde-app.herokuapp.com/as)

```
[{"id":1,"atributo1":"Atributo 1 - Modificado","atributo2":111.77,"atributo3":"2028-07-20T19:51:09Z","atributo4":111}]
```



# Testando o serviço (a aplicação)

https://abcde-app.herokuapp.com/as/1

```
{"id":1,"atributo1":"Atributo 1 - Modificado","atributo2":111.77,"atributo3":"2028-07-20T19:51:09Z","atributo4":111}
```

https://abcde-app.herokuapp.com/as/2

```
{"timestamp":"2021-06-25T17:48:24Z","status":404,"error":"Objeto não encontrado!!! ","message":"Objeto não encontrado. ID = 2","path":"/as/2"}
```

id inválido tanto para a busca quanto para a exclusão

DELETE https://abcde-app.herokuapp.com/as/2 Send

Params Authorization Headers (8) Body ● Pre-request Script Tests Settings Cookies

Query Params

KEY	VALUE	DESCRIPTION	...	Bulk Edit
-----	-------	-------------	-----	-----------

Body Cookies Headers (6) Test Results Status: 404 Not Found Time: 649 ms Size: 323 B Save Response

Pretty Raw Preview Visualize JSON

```
1 ✓  
2 "timestamp": "2021-06-25T17:49:59Z",  
3 "status": 404,  
4 "error": "Objeto não encontrado!!! ",  
5 "message": "Objeto não encontrado. ID = 2",  
6 "path": "/as/2"  
7
```



# Testando o serviço (a aplicação)

The image shows a web browser at the top with the address bar displaying `https://abcde-app.herokuapp.com/as/`. Below the browser, an API client interface is shown. The request method is `PUT` and the URL is `https://abcde-app.herokuapp.com/as/2`. The request body is a JSON object: `{ "id": 1, "atributo1": "Atributo 1 - Modificado", "atributo2": 111.77, "atributo3": "2028-07-20T19:51:09Z", "atributo4": 111 }`. The response status is `404 Not Found` with a message: `"error": "Objeto não encontrado!!!", "message": "Objeto não encontrado. ID = 2", "path": "/as/2"`. A green text overlay `id inválido para atualização` is positioned over the response body.

```
[{"id":1,"atributo1":"Atributo 1 - Modificado","atributo2":111.77,"atributo3":"2028-07-20T19:51:09Z","atributo4":111}]
```

PUT `https://abcde-app.herokuapp.com/as/2` Send

Params Authorization Headers (8) Body Pre-request Script Tests Settings

none form-data x-www-form-urlencoded raw binary GraphQL JSON

```
1 .....
2 ..... "atributo1": "Atributo 2 - Modificado",
3 ..... "atributo2": 222.77,
4 ..... "atributo3": "2028-07-20T19:51:09Z",
5 ..... "atributo4": 222
6 .....
```

id inválido para atualização

Body Cookies Headers (6) Test Results

Status: 404 Not Found Time: 524 ms Size: 323 B Save Response

Pretty Raw Preview Visualize JSON

```
1 .....
2 ..... "timestamp": "2021-06-25T17:53:25Z",
3 ..... "status": 404,
4 ..... "error": "Objeto não encontrado!!! ",
5 ..... "message": "Objeto não encontrado. ID = 2",
6 ..... "path": "/as/2"
7 .....
```



# Dúvidas?

