

Bootcamp DIO-Everis QA Beginner

Projeto API Rest Cities

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repositório: <https://github.com/andrelugomes/digital-innovation-one>

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repositórios : <https://github.com/JoseHenriq/CitiesRestApi.git>

<https://git.heroku.com/projeto-api-rest.git>

Introdução

No vídeo apresentado antes das aulas, "Parte 1" à "Parte 15", foi nos informado que teríamos uma atividade final para o bootcamp, sobre o projeto apresentado nas aulas.

Essa atividade consistiria nas seguintes etapas:

- a- fazer o download do projeto apresentado a partir do github do instrutor;
- b- assistir às exposições do instrutor (aulas);
- c- recriação do projeto apresentado conforme o ponto de vista de cada um;
- d- competências utilizadas;
- e- incluir o endereço linkedin;
- f- fazer o upload do projeto no github.

Relatório das atividades

Na live que foi apresentada para o lançamento desse bootcamp foi realçado que as eventuais vagas seriam para desenvolvedores iniciantes ou com pouco experiência na vida prática nas áreas abordadas.

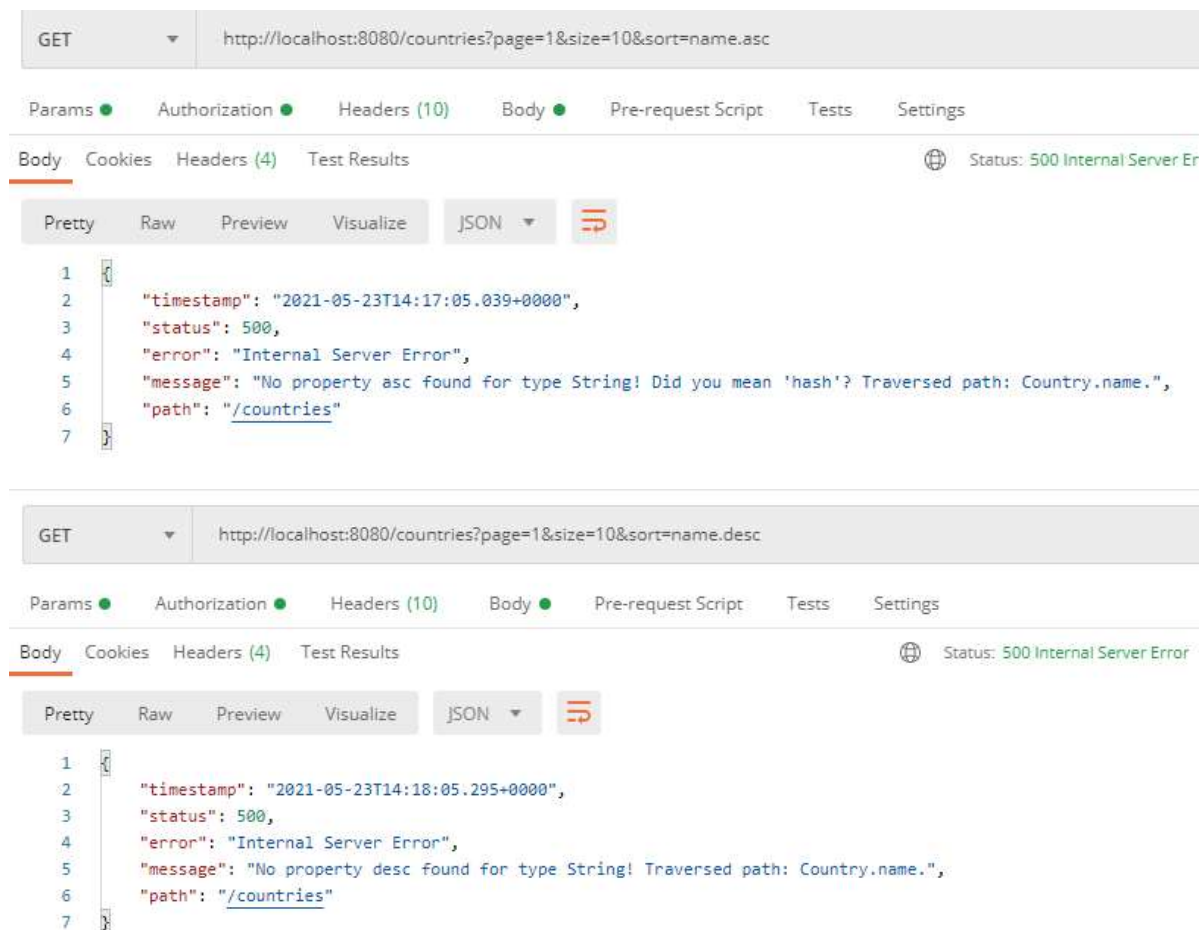
Com prazo de encerramento muito curto, o tempo disponibilizado para o bootcamp foi incompatível com a premissa apresentada na live, quanto à experiência esperada dos participantes.

O projeto-fim desse bootcamp tem uma certa complexidade e utiliza muitas tecnologias que somente desenvolvedores com muita experiência conseguiriam executá-las nesse tempo tão curto.

Após as etapas a e b, antes de opinar sobre reprojeito, instalei o projeto downloaded e estudei-o. Esse estudo foi dividido nos tópicos apresentados abaixo.

Nos testes funcionais utilizando data base local, por conta de tão pouco tempo disponível, foi deixado de ser solucionado o problema apresentado quando da utilização de queries com passagens de parâmetros para as ordenações das respostas, tanto ascendentes como descendentes. As queries que não envolvem a ordenação dos dados estão funcionando.

Segue as msgs erro apresentadas no Postman para sort por asc e por desc respectivamente:



Os testes funcionais utilizando data base remota, por conta de tão pouco tempo disponível, foram deixados de ser executados ainda na fase de setup do ambiente do sistema que seria utilizado (Heroku).

Não acredito ser necessária a recriação do projeto, uma vez que seu funcionamento me pareceu bastante adequado. Algumas melhorias de pouca monta poderiam ser feitas mas que não impactam significativamente no projeto como um todo. Talvez, se o prazo me permitisse, trabalharia e apps consumidores dessas APIs, seja em java, seja em Kotlin para sistema Android.

Quanto as competências que tais manutenções do projeto demandariam creio que deveriam ser relativas ao desenvolvimento em ambiente cliente - servidor, local e remoto, conhecimento profundo das ferramentas de desenvolvimento tais como a IDE IntelliJ da JetBrains, a Docker e a Heroku para o gerenciamento de contêineres, de gerenciadores de banco de dados SQL e relational, como o PostgreSQL, protocolos web (tcp-ip, html + CSS) e controles de versões dos projetos como o sistema git-github.

Sugestões

Gostei muito do projeto e entendo que ele tem enorme potencial para enriquecer o conhecimento dos desenvolvedores desde que:

- as aulas sejam apresentadas com mais didática e com mais detalhes; o instrutor, *sr. André Luís Gomes*, tem profundo conhecimento da área e demonstrou que pode cumprir esses objetivos, como demonstrou ao ministrar as *aulas de 1 a 5 do Modulo 5- Desenvolvimento Básico em Java* desse mesmo bootcamp, com muito sucesso;
- e mais do que tudo: não determinem, ou pelo menos, sejam mais razoáveis quanto aos prazos envolvidos;
- gostaria de sugerir também, que destaquem algum monitor com conhecimento do assunto a ser tratado para que atuem nos fóruns ou saibam encaminhar as questões mais específicas aos responsáveis porque percebi que a grande maioria dos participantes não tem esse conhecimento e ficamos na maior parte do tempo sem resposta às essas questões.

Tópicos do estudo

1- Projeto apresentado no bootcamp

1.1- Arquitetura

1.2- Estrutura em termos de árvore de diretórios

2- Teste funcional utilizando DataBase local

2.1- Set up

2.2- Consultas ao db local / API pais

2.3- Consultas ao db local / API estado

2.4- Consultas ao db local / API cidade

2.5- Consultas ao db local / API cidade service distance

2.5.1- using by-cubes

2.5.1- using by-points

3- Controlando as versões utilizando git / github

3.1- Preparando o diretório do projeto na máquina local

3.2- Criando o novo repositório no github

3.3- Enviando o projeto para o novo repositório no github

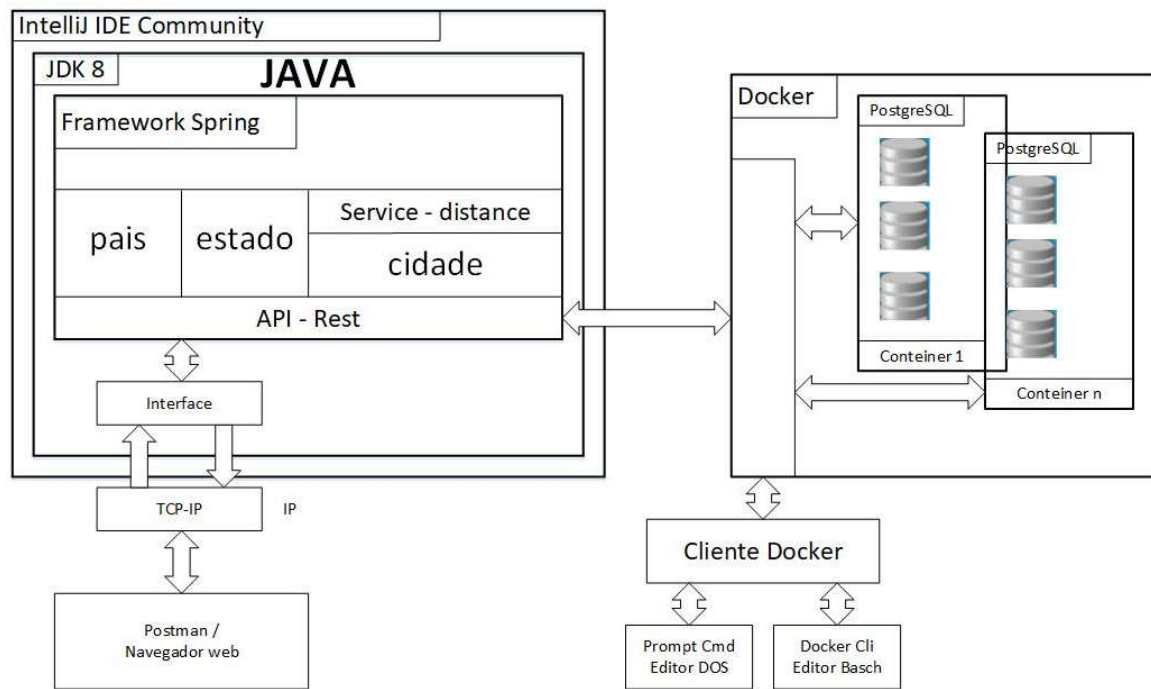
3.4- Clonando / baixando o repositório no github

4- Teste funcional utilizando DataBase remoto (Produção)

4.1- Setando o Heroku

1- Projeto apresentado no bootcamp

1.1- Arquitetura

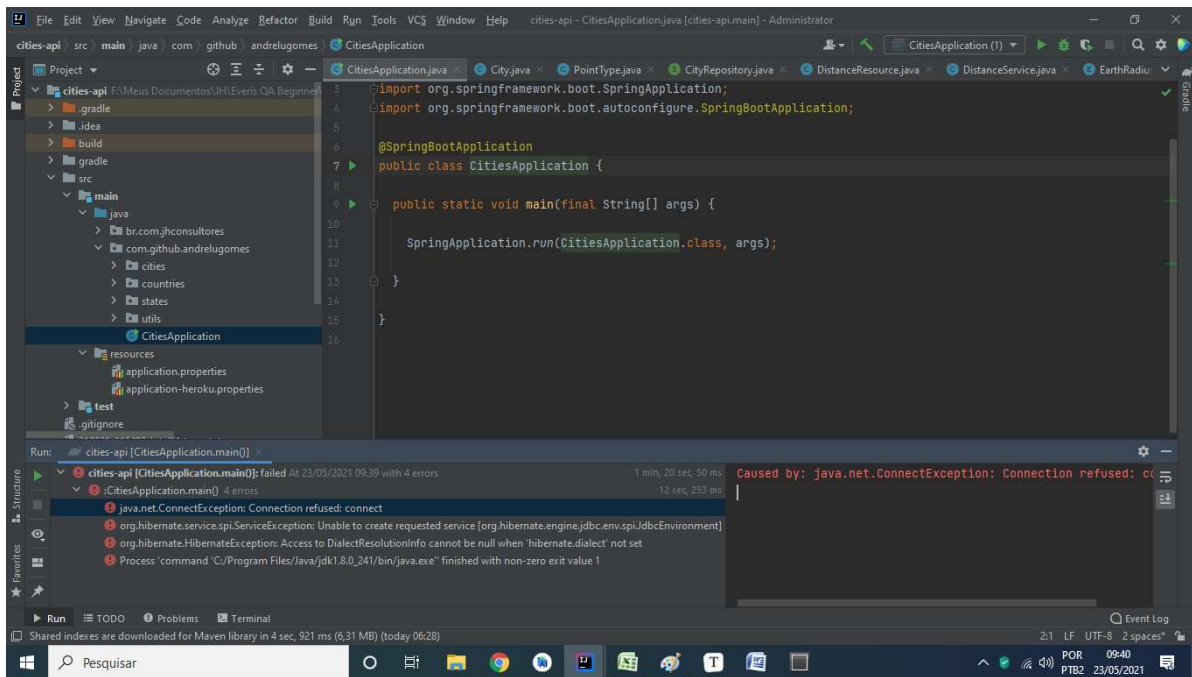


1.2- Estrutura da árvore de diretórios



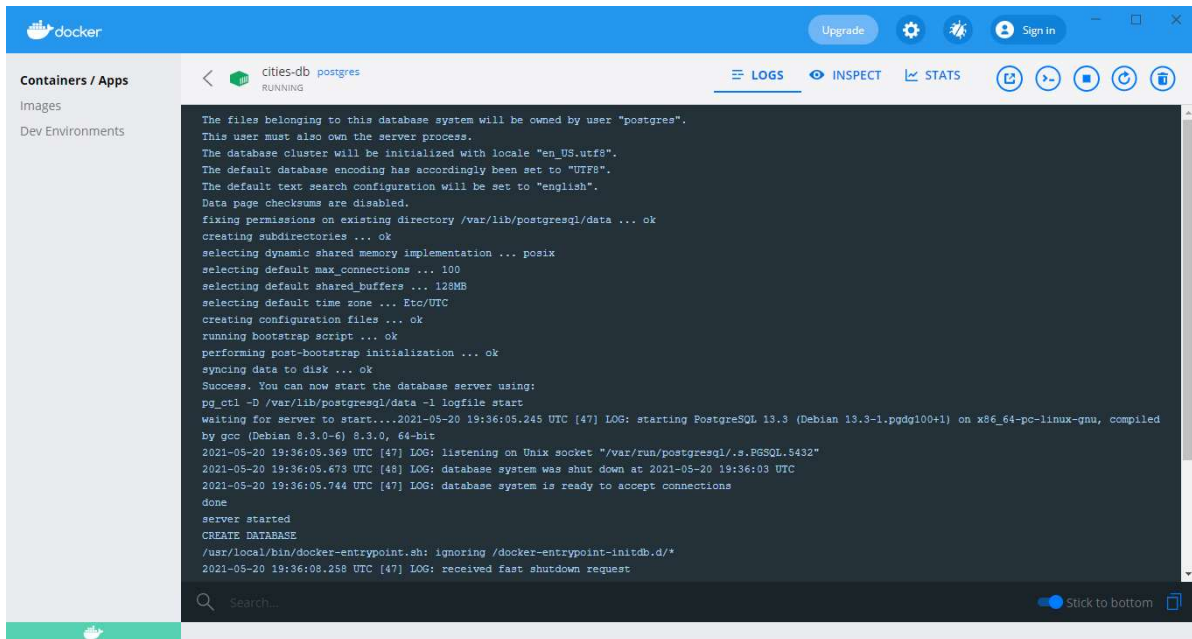
2- Teste funcional utilizando DataBase local

2.1- Set up

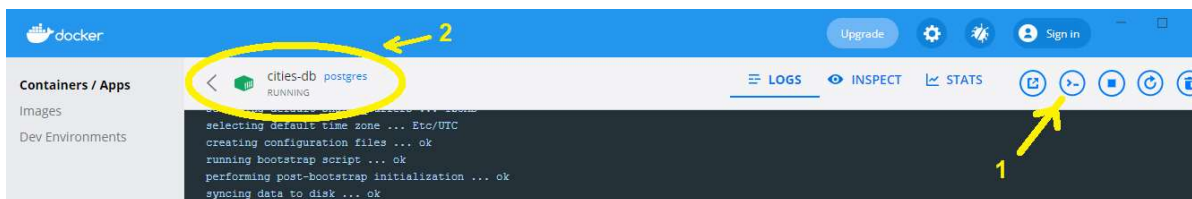


(ERRO: sem ativar o *docker*)

- Ativando o *docker*:



- 1- inicia *CLi* (bash editor) no docker e 2- startar o postgres do container



- acessa o database do container e cria as extensões para o **service** dos cálculos de distância:
(Obs: na 1a instalação)

```
#psql -h localhost -U postgres_user_city cities
```

```
cities=# CREATE EXTENSION cube;
```

```
CREATE EXTENSION
```

```
cities=# CREATE EXTENSION earthdistance;
```

```
CREATE EXTENSION
```

```
cities=#
```

```
docker exec -it 13022844787c24da632c430c9365c49bf236dedc85dca3c787e171e0dbe98b61 /bin/sh
```

```
# psql -h localhost -U postgres_user_city cities
```

```
psql (13.3 (Debian 13.3-1.pgdg100+1))
```

```
Type "help" for help.
```

```
cities=# CREATE EXTENSION cube;
```

```
CREATE EXTENSION
```

```
cities=# CREATE EXTENSION earthdistance;
```

```
CREATE EXTENSION
```

```
cities=#
```

- Verificar o acesso ao db do container:
 - estrutura das tabelas: cities=# \d cidade;
 - valores das tabelas: cities=# Select * from cidade;
- Verificar a conexão API docker:

```
Administrator: Prompt de Comando
Microsoft Windows [versão 10.0.18363.1500]
(c) 2019 Microsoft Corporation. Todos os direitos reservados.

C:\Windows\system32>docker ps
CONTAINER ID   IMAGE      COMMAND                  CREATED        STATUS
PORTS         NAMES
13022844787c   postgres  "docker-entrypoint.s..." 3 days ago    Up 14 minutes
0.0.0.0:5432->5432/tcp, :::5432->5432/tcp  cities-db

C:\Windows\system32>
```

- No IntelliJ Iniciar a API (após iniciar o *docker* e startar o servidor *postgres*)


```
> Task :compileJava UP-TO-DATE
> Task :processResources UP-TO-DATE
> Task :classes UP-TO-DATE

> Task :CitiesApplication.main()
```

```

2021-05-23 09:59:47.041 INFO 12796 --- [main] c.github.andrelugomes.CitiesApplication : Starting Cities
2021-05-23 09:59:47.046 INFO 12796 --- [main] c.github.andrelugomes.CitiesApplication : No active profil
2021-05-23 09:59:47.861 INFO 12796 --- [main] s.d.r.c.RepositoryConfigurationDelegate : Bootstrapping S
2021-05-23 09:59:47.959 INFO 12796 --- [main] s.d.r.c.RepositoryConfigurationDelegate : Finished Spring
2021-05-23 09:59:49.603 INFO 12796 --- [main] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat initiali
2021-05-23 09:59:49.619 INFO 12796 --- [main] o.apache.catalina.core.StandardService : Starting servic
2021-05-23 09:59:49.619 INFO 12796 --- [main] org.apache.catalina.core.StandardEngine : Starting Servle
2021-05-23 09:59:49.784 INFO 12796 --- [main] o.a.c.c.C.[Tomcat].[localhost].[/] : Initializing Sp
2021-05-23 09:59:49.784 INFO 12796 --- [main] o.s.web.context.ContextLoader : Root WebApplica
2021-05-23 09:59:49.964 INFO 12796 --- [main] com.zaxxer.hikari.HikariDataSource : HikariPool-1 -
2021-05-23 09:59:50.380 INFO 12796 --- [main] com.zaxxer.hikari.HikariDataSource : HikariPool-1 -
2021-05-23 09:59:50.445 INFO 12796 --- [main] o.hibernate.jpa.internal.util.LogHelper : HHH000204: Prod
2021-05-23 09:59:50.575 INFO 12796 --- [main] org.hibernate.Version : HHH000412: Hibe
2021-05-23 09:59:50.805 INFO 12796 --- [main] o.hibernate.annotations.common.Version : HCANN000001: Hi
2021-05-23 09:59:50.956 INFO 12796 --- [main] org.hibernate.dialect.Dialect : HHH000400: Usin
2021-05-23 09:59:51.598 WARN 12796 --- [main] Hibernate Types : You should use
2021-05-23 09:59:51.599 WARN 12796 --- [main] Hibernate Types : For more detail
2021-05-23 09:59:51.599 INFO 12796 --- [main] Hibernate Types :

```

```
2021-05-23 09:59:51.599 INFO 12796 --- [main] Hibernate Types : Check out the F
2021-05-23 09:59:52.267 INFO 12796 --- [main] o.h.e.t.j.p.i.JtaPlatformInitiator : HHH000490: Usin
2021-05-23 09:59:52.280 INFO 12796 --- [main] j.LocalContainerEntityManagerFactoryBean : Initialized JPA
2021-05-23 09:59:52.764 WARN 12796 --- [main] JpaBaseConfiguration$JpaWebConfiguration : spring.jpa.oper
2021-05-23 09:59:52.963 INFO 12796 --- [main] o.s.s.concurrent.ThreadPoolTaskExecutor : Initializing Ex
2021-05-23 09:59:53.200 INFO 12796 --- [main] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat started on port(s): 8080 (http) with context path ''
2021-05-23 09:59:53.202 INFO 12796 --- [main] c.github.andrelugomes.CitiesApplication : Started Cities
```

2.2- Consultas ao db local / API pais

- Ferramenta: *Postman*

GET http://localhost:8080/countries?page=0&size=10&sort=name.asc

Params

Key	Value	Description
sort	name.asc	

Body

```
1 {
2   {
3     "id": 1,
4     "name": "Brazil",
5     "portugueseName": "Brasil",
6     "code": "BR",
7     "bacen": 1058
8   },
9   {
10    "id": 2,
11    "name": "Afghanistan",
12    "portugueseName": "Afganistão",
13    "code": "AF",
14    "bacen": 132
15  }
```

Status: 200 OK Time: 214 ms Size: 22.67 KB

(Erro: NÃO paginou !!!)

- Necessário se adaptar método:

```
21  /**
22   * @GetMapping("/countries")
23   * public List<Country> cities() {
24   *
25   *     return repository.findAll();
26   * }
27   */
28
29   //--- Modificação implementada conforme Aula7 / Módulo8 video 03'59"
30   @GetMapping("/countries")
31   public Page cities(Pageable page) {
32
33       return repository.findAll(page);
34   }
35
36
37 }
```

Launchpad GET AuthRequest_p... AuthRequest POST AuthRequest... POST AuthRequest + ... No Environment

AuthRequest_prod Examples 0

GET http://localhost:8080/countries?page=1 Send

Params Authorization Headers (10) Body Pre-request Script Tests Settings

KEY	VALUE	DESCRIPTION
<input checked="" type="checkbox"/> page	1	
Key	Value	Description

Body Cookies Headers (5) Test Results Status: 200 OK Time: 53 ms Size: 2.2 KB

Pretty Raw Preview Visualize JSON

```

1 {
2   "content": [
3     {
4       "id": 21,
5       "name": "Belarus",
6       "portugueseName": "Belarus, Republica da",
7       "code": "BY",
8       "bacen": 850
9     },
10    {
11      "id": 22,
12      "name": "Belgium",
13      "portugueseName": "Bélgica",
14      "code": "BE"

```

- OK; está paginando de 20 em 20 países, conforme informado pelo Postman:

```

144   "pageable": {
145     "sort": {
146       "sorted": false,
147       "unsorted": true,
148       "empty": true
149     },
150     "offset": 20,
151     "pageNumber": 1,
152     "pageSize": 20,
153     "paged": true,
154     "unpaged": false
155   },
156   "last": false,
157   "totalPages": 13,
158   "totalElements": 255,
159   "size": 20,
160   "number": 1,
161   "sort": {
162     "sorted": false,
163     "unsorted": true,
164     "empty": true
165   },
166   "numberOfElements": 20,
167   "first": false,
168   "empty": false
169 }

```

- Queries para país:

```
GET http://localhost:8080/countries?page=1&size=10&sort=name.asc

Params Authorization Headers (10) Body Pre-request Script Tests Settings

Body Cookies Headers (4) Test Results Status: 500 Internal Server Error

Pretty Raw Preview Visualize JSON

1 {
2   "timestamp": "2021-05-23T14:17:05.039+0000",
3   "status": 500,
4   "error": "Internal Server Error",
5   "message": "No property asc found for type String! Did you mean 'hash'? Traversed path: Country.name.",
6   "path": "/countries"
7 }
```

```
GET http://localhost:8080/countries?page=1&size=10&sort=name.desc

Params Authorization Headers (10) Body Pre-request Script Tests Settings

Body Cookies Headers (4) Test Results Status: 500 Internal Server Error

Pretty Raw Preview Visualize JSON

1 {
2   "timestamp": "2021-05-23T14:18:05.295+0000",
3   "status": 500,
4   "error": "Internal Server Error",
5   "message": "No property desc found for type String! Traversed path: Country.name.",
6   "path": "/countries"
7 }
```

ERRO: o sort de "name" não está funcionando quando se ordena (asc ou desc) !

-

2.3- Consultas ao db local / API estado

<http://localhost:8080/staties> OK

```
GET http://localhost:8080/staties

Params Authorization Headers (10) Body Pre-request Script Tests Settings

Body Cookies Headers (5) Test Results Status: 200 OK Time: 56 ms

Pretty Raw Preview Visualize JSON

1  [
2  {
3    "id": 1,
4    "name": "Acre",
5    "uf": "AC",
6    "ibge": 12,
7    "country": {
8      "id": 1,
9      "name": "Brazil",
10     "portugueseName": "Brasil",
11     "code": "BR",
12     "bacen": 1058
13   },
14   "ddd": [
15     68
16   ]
17 },
18 {
19   "id": 2,
20   "name": "Alagoas",
21   "uf": "AL",
22   "ibge": 27,
23   "country": {
24     "id": 1,
25     "name": "Brazil",
26     "portugueseName": "Brasil",
27     "code": "BR",
28     "bacen": 1058
29   },
30   "ddd": [
31     82
32   ]
33 },
34 {
35   "id": 3,
36   "name": "Amazonas",
37   "uf": "AM",
38   "ibge": 13,
39   "country": {
40     "id": 1,
41     "name": "Brazil",
42     "portugueseName": "Brasil",
43     "code": "BR",
44     "bacen": 1058
45   },
46   "ddd": [
47     67
48   ]
49 },
50 {
51   "id": 4,
52   "name": "Amapa",
53   "uf": "AP",
54   "ibge": 16,
55   "country": {
56     "id": 1,
57     "name": "Brazil",
58     "portugueseName": "Brasil",
59     "code": "BR",
60     "bacen": 1058
61   },
62   "ddd": [
63     68
64   ]
65 },
66 {
67   "id": 5,
68   "name": "Bahia",
69   "uf": "BA",
70   "ibge": 28,
71   "country": {
72     "id": 1,
73     "name": "Brazil",
74     "portugueseName": "Brasil",
75     "code": "BR",
76     "bacen": 1058
77   },
78   "ddd": [
79     71
80   ]
81 },
82 {
83   "id": 6,
84   "name": "Ceara",
85   "uf": "CE",
86   "ibge": 31,
87   "country": {
88     "id": 1,
89     "name": "Brazil",
90     "portugueseName": "Brasil",
91     "code": "BR",
92     "bacen": 1058
93   },
94   "ddd": [
95     85
96   ]
97 },
98 {
99   "id": 7,
100  "name": "Cia",
101  "uf": "DF",
102  "ibge": 53,
103  "country": {
104    "id": 1,
105    "name": "Brazil",
106    "portugueseName": "Brasil",
107    "code": "BR",
108    "bacen": 1058
109  },
110  "ddd": [
111    61
112  ]
113 },
114 {
115   "id": 8,
116   "name": "Espirito Santo",
117   "uf": "ES",
118   "ibge": 15,
119   "country": {
120     "id": 1,
121     "name": "Brazil",
122     "portugueseName": "Brasil",
123     "code": "BR",
124     "bacen": 1058
125   },
126   "ddd": [
127     70
128   ]
129 },
130 {
131   "id": 9,
132   "name": "Goia",
133   "uf": "GO",
134   "ibge": 35,
135   "country": {
136     "id": 1,
137     "name": "Brazil",
138     "portugueseName": "Brasil",
139     "code": "BR",
140     "bacen": 1058
141   },
142   "ddd": [
143     62
144   ]
145 },
146 {
147   "id": 10,
148   "name": "Maranhao",
149   "uf": "MA",
150   "ibge": 21,
151   "country": {
152     "id": 1,
153     "name": "Brazil",
154     "portugueseName": "Brasil",
155     "code": "BR",
156     "bacen": 1058
157   },
158   "ddd": [
159     98
160   ]
161 },
162 {
163   "id": 11,
164   "name": "Mato Grosso",
165   "uf": "MT",
166   "ibge": 33,
167   "country": {
168     "id": 1,
169     "name": "Brazil",
170     "portugueseName": "Brasil",
171     "code": "BR",
172     "bacen": 1058
173   },
174   "ddd": [
175     65
176   ]
177 },
178 {
179   "id": 12,
180   "name": "Mato Grosso do Sul",
181   "uf": "MS",
182   "ibge": 29,
183   "country": {
184     "id": 1,
185     "name": "Brazil",
186     "portugueseName": "Brasil",
187     "code": "BR",
188     "bacen": 1058
189   },
190   "ddd": [
191     67
192   ]
193 },
194 {
195   "id": 13,
196   "name": "Mec",
197   "uf": "RO",
198   "ibge": 11,
199   "country": {
200     "id": 1,
201     "name": "Brazil",
202     "portugueseName": "Brasil",
203     "code": "BR",
204     "bacen": 1058
205   },
206   "ddd": [
207     67
208   ]
209 },
210 {
211   "id": 14,
212   "name": "Mec",
213   "uf": "TO",
214   "ibge": 17,
215   "country": {
216     "id": 1,
217     "name": "Brazil",
218     "portugueseName": "Brasil",
219     "code": "BR",
220     "bacen": 1058
221   },
222   "ddd": [
223     63
224   ]
225 },
226 {
227   "id": 15,
228   "name": "Parana",
229   "uf": "PR",
230   "ibge": 33,
231   "country": {
232     "id": 1,
233     "name": "Brazil",
234     "portugueseName": "Brasil",
235     "code": "BR",
236     "bacen": 1058
237   },
238   "ddd": [
239     41
240   ]
241 },
242 {
243   "id": 16,
244   "name": "Parana",
245   "uf": "SC",
246   "ibge": 27,
247   "country": {
248     "id": 1,
249     "name": "Brazil",
250     "portugueseName": "Brasil",
251     "code": "BR",
252     "bacen": 1058
253   },
254   "ddd": [
255     47
256   ]
257 },
258 {
259   "id": 17,
260   "name": "Parana",
261   "uf": "RS",
262   "ibge": 32,
263   "country": {
264     "id": 1,
265     "name": "Brazil",
266     "portugueseName": "Brasil",
267     "code": "BR",
268     "bacen": 1058
269   },
270   "ddd": [
271     51
272   ]
273 },
274 {
275   "id": 18,
276   "name": "Parana",
277   "uf": "RN",
278   "ibge": 20,
279   "country": {
280     "id": 1,
281     "name": "Brazil",
282     "portugueseName": "Brasil",
283     "code": "BR",
284     "bacen": 1058
285   },
286   "ddd": [
287     84
288   ]
289 },
290 {
291   "id": 19,
292   "name": "Parana",
293   "uf": "SE",
294   "ibge": 14,
295   "country": {
296     "id": 1,
297     "name": "Brazil",
298     "portugueseName": "Brasil",
299     "code": "BR",
300     "bacen": 1058
301   },
302   "ddd": [
303     79
304   ]
305 },
306 {
307   "id": 20,
308   "name": "Parana",
309   "uf": "SP",
310   "ibge": 35,
311   "country": {
312     "id": 1,
313     "name": "Brazil",
314     "portugueseName": "Brasil",
315     "code": "BR",
316     "bacen": 1058
317   },
318   "ddd": [
319     11
320   ]
321 },
322 {
323   "id": 21,
324   "name": "Parana",
325   "uf": "RJ",
326   "ibge": 32,
327   "country": {
328     "id": 1,
329     "name": "Brazil",
330     "portugueseName": "Brasil",
331     "code": "BR",
332     "bacen": 1058
333   },
334   "ddd": [
335     21
336   ]
337 },
338 {
339   "id": 22,
340   "name": "Parana",
341   "uf": "PA",
342   "ibge": 14,
343   "country": {
344     "id": 1,
345     "name": "Brazil",
346     "portugueseName": "Brasil",
347     "code": "BR",
348     "bacen": 1058
349   },
350   "ddd": [
351     91
352   ]
353 },
354 {
355   "id": 23,
356   "name": "Parana",
357   "uf": "AC",
358   "ibge": 12,
359   "country": {
360     "id": 1,
361     "name": "Brazil",
362     "portugueseName": "Brasil",
363     "code": "BR",
364     "bacen": 1058
365   },
366   "ddd": [
367     68
368   ]
369 },
370 {
371   "id": 24,
372   "name": "Parana",
373   "uf": "AL",
374   "ibge": 27,
375   "country": {
376     "id": 1,
377     "name": "Brazil",
378     "portugueseName": "Brasil",
379     "code": "BR",
380     "bacen": 1058
381   },
382   "ddd": [
383     82
384   ]
385 },
371 {
372   "id": 25,
373   "name": "Parana",
374   "uf": "AM",
375   "ibge": 13,
376   "country": {
377     "id": 1,
378     "name": "Brazil",
379     "portugueseName": "Brasil",
380     "code": "BR",
381     "bacen": 1058
382   },
383   "ddd": [
384     67
385   ]
386 },
387 {
388   "id": 26,
389   "name": "Parana",
390   "uf": "AP",
391   "ibge": 16,
392   "country": {
393     "id": 1,
394     "name": "Brazil",
395     "portugueseName": "Brasil",
396     "code": "BR",
397     "bacen": 1058
398   },
399   "ddd": [
400     68
401   ]
402 },
393 {
394   "id": 27,
395   "name": "Parana",
396   "uf": "BA",
397   "ibge": 28,
398   "country": {
399     "id": 1,
400     "name": "Brazil",
401     "portugueseName": "Brasil",
402     "code": "BR",
403     "bacen": 1058
404   },
405   "ddd": [
406     71
407   ]
408 },
409 {
410   "id": 28,
411   "name": "Parana",
412   "uf": "CE",
413   "ibge": 31,
414   "country": {
415     "id": 1,
416     "name": "Brazil",
417     "portugueseName": "Brasil",
418     "code": "BR",
419     "bacen": 1058
420   },
421   "ddd": [
422     85
423   ]
424 },
425 {
426   "id": 29,
427   "name": "Parana",
428   "uf": "DF",
429   "ibge": 53,
430   "country": {
431     "id": 1,
432     "name": "Brazil",
433     "portugueseName": "Brasil",
434     "code": "BR",
435     "bacen": 1058
436   },
437   "ddd": [
438     61
439   ]
440 },
441 {
442   "id": 30,
443   "name": "Parana",
444   "uf": "ES",
445   "ibge": 15,
446   "country": {
447     "id": 1,
448     "name": "Brazil",
449     "portugueseName": "Brasil",
450     "code": "BR",
451     "bacen": 1058
452   },
453   "ddd": [
454     70
455   ]
456 },
457 {
458   "id": 31,
459   "name": "Parana",
460   "uf": "GO",
461   "ibge": 35,
462   "country": {
463     "id": 1,
464     "name": "Brazil",
465     "portugueseName": "Brasil",
466     "code": "BR",
467     "bacen": 1058
468   },
469   "ddd": [
470     62
471   ]
472 },
473 {
474   "id": 32,
475   "name": "Parana",
476   "uf": "MA",
477   "ibge": 21,
478   "country": {
479     "id": 1,
480     "name": "Brazil",
481     "portugueseName": "Brasil",
482     "code": "BR",
483     "bacen": 1058
484   },
485   "ddd": [
486     98
487   ]
488 },
489 {
490   "id": 33,
491   "name": "Parana",
492   "uf": "MT",
493   "ibge": 33,
494   "country": {
495     "id": 1,
496     "name": "Brazil",
497     "portugueseName": "Brasil",
498     "code": "BR",
499     "bacen": 1058
500   },
501   "ddd": [
502     65
503   ]
504 },
505 {
506   "id": 34,
507   "name": "Parana",
508   "uf": "MS",
509   "ibge": 29,
510   "country": {
511     "id": 1,
512     "name": "Brazil",
513     "portugueseName": "Brasil",
514     "code": "BR",
515     "bacen": 1058
516   },
517   "ddd": [
518     67
519   ]
520 },
521 {
522   "id": 35,
523   "name": "Parana",
524   "uf": "RO",
525   "ibge": 11,
526   "country": {
527     "id": 1,
528     "name": "Brazil",
529     "portugueseName": "Brasil",
530     "code": "BR",
531     "bacen": 1058
532   },
533   "ddd": [
534     67
535   ]
536 },
537 {
538   "id": 36,
539   "name": "Parana",
540   "uf": "TO",
541   "ibge": 17,
542   "country": {
543     "id": 1,
544     "name": "Brazil",
545     "portugueseName": "Brasil",
546     "code": "BR",
547     "bacen": 1058
548   },
549   "ddd": [
550     63
551   ]
552 },
553 {
554   "id": 37,
555   "name": "Parana",
556   "uf": "PR",
557   "ibge": 33,
558   "country": {
559     "id": 1,
560     "name": "Brazil",
561     "portugueseName": "Brasil",
562     "code": "BR",
563     "bacen": 1058
564   },
565   "ddd": [
566     41
567   ]
568 },
569 {
570   "id": 38,
571   "name": "Parana",
572   "uf": "SC",
573   "ibge": 27,
574   "country": {
575     "id": 1,
576     "name": "Brazil",
577     "portugueseName": "Brasil",
578     "code": "BR",
579     "bacen": 1058
580   },
581   "ddd": [
582     47
583   ]
584 },
585 {
586   "id": 39,
587   "name": "Parana",
588   "uf": "RS",
589   "ibge": 32,
590   "country": {
591     "id": 1,
592     "name": "Brazil",
593     "portugueseName": "Brasil",
594     "code": "BR",
595     "bacen": 1058
596   },
597   "ddd": [
598     51
599   ]
600 },
601 {
602   "id": 40,
603   "name": "Parana",
604   "uf": "RN",
605   "ibge": 20,
606   "country": {
607     "id": 1,
608     "name": "Brazil",
609     "portugueseName": "Brasil",
610     "code": "BR",
611     "bacen": 1058
612   },
613   "ddd": [
614     84
615   ]
616 },
617 {
618   "id": 41,
619   "name": "Parana",
620   "uf": "SE",
621   "ibge": 14,
622   "country": {
623     "id": 1,
624     "name": "Brazil",
625     "portugueseName": "Brasil",
626     "code": "BR",
627     "bacen": 1058
628   },
629   "ddd": [
630     79
631   ]
632 },
633 {
634   "id": 42,
635   "name": "Parana",
636   "uf": "SP",
637   "ibge": 35,
638   "country": {
639     "id": 1,
640     "name": "Brazil",
641     "portugueseName": "Brasil",
642     "code": "BR",
643     "bacen": 1058
644   },
645   "ddd": [
646     11
647   ]
648 },
649 {
650   "id": 43,
651   "name": "Parana",
652   "uf": "RJ",
653   "ibge": 32,
654   "country": {
655     "id": 1,
656     "name": "Brazil",
657     "portugueseName": "Brasil",
658     "code": "BR",
659     "bacen": 1058
660   },
661   "ddd": [
662     21
663   ]
664 },
665 {
666   "id": 44,
667   "name": "Parana",
668   "uf": "PA",
669   "ibge": 14,
670   "country": {
671     "id": 1,
672     "name": "Brazil",
673     "portugueseName": "Brasil",
674     "code": "BR",
675     "bacen": 1058
676   },
677   "ddd": [
678     91
679   ]
680 },
681 {
682   "id": 45,
683   "name": "Parana",
684   "uf": "AC",
685   "ibge": 12,
686   "country": {
687     "id": 1,
688     "name": "Brazil",
689     "portugueseName": "Brasil",
690     "code": "BR",
691     "bacen": 1058
692   },
693   "ddd": [
694     68
695   ]
696 },
697 {
698   "id": 46,
699   "name": "Parana",
700   "uf": "AL",
701   "ibge": 27,
702   "country": {
703     "id": 1,
704     "name": "Brazil",
705     "portugueseName": "Brasil",
706     "code": "BR",
707     "bacen": 1058
708   },
709   "ddd": [
710     82
711   ]
712 },
713 {
714   "id": 47,
715   "name": "Parana",
716   "uf": "AM",
717   "ibge": 13,
718   "country": {
719     "id": 1,
720     "name": "Brazil",
721     "portugueseName": "Brasil",
722     "code": "BR",
723     "bacen": 1058
724   },
725   "ddd": [
726     67
727   ]
728 },
729 {
730   "id": 48,
731   "name": "Parana",
732   "uf": "AP",
733   "ibge": 16,
734   "country": {
735     "id": 1,
736     "name": "Brazil",
737     "portugueseName": "Brasil",
738     "code": "BR",
739     "bacen": 1058
740   },
741   "ddd": [
742     68
743   ]
744 },
745 {
746   "id": 49,
747   "name": "Parana",
748   "uf": "BA",
749   "ibge": 28,
750   "country": {
751     "id": 1,
752     "name": "Brazil",
753     "portugueseName": "Brasil",
754     "code": "BR",
755     "bacen": 1058
756   },
757   "ddd": [
758     71
759   ]
760 },
761 {
762   "id": 50,
763   "name": "Parana",
764   "uf": "CE",
765   "ibge": 31,
766   "country": {
767     "id": 1,
768     "name": "Brazil",
769     "portugueseName": "Brasil",
770     "code": "BR",
771     "bacen": 1058
772   },
773   "ddd": [
774     85
775   ]
776 },
777 {
778   "id": 51,
779   "name": "Parana",
780   "uf": "DF",
781   "ibge": 53,
782   "country": {
783     "id": 1,
784     "name": "Brazil",
785     "portugueseName": "Brasil",
786     "code": "BR",
787     "bacen": 1058
788   },
789   "ddd": [
790     61
791   ]
792 },
793 {
794   "id": 52,
795   "name": "Parana",
796   "uf": "ES",
797   "ibge": 15,
798   "country": {
799     "id": 1,
800     "name": "Brazil",
801     "portugueseName": "Brasil",
802     "code": "BR",
803     "bacen": 1058
804   },
805   "ddd": [
806     70
807   ]
808 },
809 {
810   "id": 53,
811   "name": "Parana",
812   "uf": "GO",
813   "ibge": 35,
814   "country": {
815     "id": 1,
816     "name": "Brazil",
817     "portugueseName": "Brasil",
818     "code": "BR",
819     "bacen": 1058
820   },
821   "ddd": [
822     62
823   ]
824 },
825 {
826   "id": 54,
827   "name": "Parana",
828   "uf": "MA",
829   "ibge": 21,
830   "country": {
831     "id": 1,
832     "name": "Brazil",
833     "portugueseName": "Brasil",
834     "code": "BR",
835     "bacen": 1058
836   },
837   "ddd": [
838     98
839   ]
840 },
841 {
842   "id": 55,
843   "name": "Parana",
844   "uf": "MT",
845   "ibge": 33,
846   "country": {
847     "id": 1,
848     "name": "Brazil",
849     "portugueseName": "Brasil",
850     "code": "BR",
851     "bacen": 1058
852   },
853   "ddd": [
854     65
855   ]
856 },
857 {
858   "id": 56,
859   "name": "Parana",
860   "uf": "MS",
861   "ibge": 29,
862   "country": {
863     "id": 1,
864     "name": "Brazil",
865     "portugueseName": "Brasil",
866     "code": "BR",
867     "bacen": 1058
868   },
869   "ddd": [
870     67
871   ]
872 },
873 {
874   "id": 57,
875   "name": "Parana",
876   "uf": "RO",
877   "ibge": 11,
878   "country": {
879     "id": 1,
880     "name": "Brazil",
881     "portugueseName": "Brasil",
882     "code": "BR",
883     "bacen": 1058
884   },
885   "ddd": [
886     67
887   ]
888 },
889 {
890   "id": 58,
891   "name": "Parana",
892   "uf": "TO",
893   "ibge": 17,
894   "country": {
895     "id": 1,
896     "name": "Brazil",
897     "portugueseName": "Brasil",
898     "code": "BR",
899     "bacen": 1058
900   },
901   "ddd": [
902     63
903   ]
904 },
905 {
906   "id": 59,
907   "name": "Parana",
908   "uf": "PR",
909   "ibge": 33,
910   "country": {
911     "id": 1,
912     "name": "Brazil",
913     "portugueseName": "Brasil",
914     "code": "BR",
915     "bacen": 1058
916   },
917   "ddd": [
918     41
919   ]
920 },
921 {
922   "id": 60,
923   "name": "Parana",
924   "uf": "SC",
925   "ibge": 27,
926   "country": {
927     "id": 1,
928     "name": "Brazil",
929     "portugueseName": "Brasil",
930     "code": "BR",
931     "bacen": 1058
932   },
933   "ddd": [
934     47
935   ]
936 },
937 {
938   "id": 61,
939   "name": "Parana",
940   "uf": "RS",
941   "ibge": 32,
942   "country": {
943     "id": 1,
944     "name": "Brazil",
945     "portugueseName": "Brasil",
946     "code": "BR",
947     "bacen": 1058
948   },
949   "ddd": [
950     51
951   ]
952 },
953 {
954   "id": 62,
955   "name": "Parana",
956   "uf": "RN",
957   "ibge": 20,
958   "country": {
959     "id": 1,
960     "name": "Brazil",
961     "portugueseName": "Brasil",
962     "code": "BR",
963     "bacen": 1058
964   },
965   "ddd": [
966     84
967   ]
968 },
969 {
970   "id": 63,
971   "name": "Parana",
972   "uf": "SE",
973   "ibge": 14,
974   "country": {
975     "id": 1,
976     "name": "Brazil",
977     "portugueseName": "Brasil",
978     "code": "BR",
979     "bacen": 1058
980   },
981   "ddd": [
982     79
983   ]
984 },
985 {
986   "id": 64,
987   "name": "Parana",
988   "uf": "SP",
989   "ibge": 35,
990   "country": {
991     "id": 1,
992     "name": "Brazil",
993     "portugueseName": "Brasil",
994     "code": "BR",
995     "bacen": 1058
996   },
997   "ddd": [
998     11
999   ]
1000 }
```

2.4- Consultas ao db local / API cidade

<http://localhost:8080/cities?page=0&size=30&sort=name> : OK

```
GET http://localhost:8080/cities?page=0&size=30&sort=name

Params Authorization Headers (10) Body Pre-request Script Tests Settings

Body Cookies Headers (5) Test Results Status: 200 OK Time: 182 ms

Pretty Raw Preview Visualize JSON

1  {
2    "content": [
3      {
4        "id": 883,
5        "name": "Abadia de Goiás",
6        "uf": 9,
7        "ibge": 5200050,
8        "geolocation": "(-16.7572994232178,-49.4412002563477)",
9        "location": {
10         "x": -16.7572994232178,
11         "y": -49.4412002563477
12       }
13     },
14     {
15       "id": 1565,
16       "name": "Abadia dos Dourados",
17       "uf": 11,
18       "ibge": 3100104,
19     },
20   ],
21   "pageable": {
22     "sort": {
23       "sorted": true,
24       "unsorted": false,
25       "empty": false
26     },
27     "offset": 0,
28     "pageNumber": 0,
29     "pageSize": 30,
30     "paged": true,
31     "unpaged": false
32   },
33   "last": false,
34   "totalPages": 187,
35   "totalElements": 5595,
36   "size": 30,
37   "number": 0,
38   "sort": {
39     "sorted": true,
40     "unsorted": false,
41     "empty": false
42   },
43   "numberOfElements": 30,
44   "first": true,
45   "empty": false
46 }
```

2.5- Consultas ao db local / API cidade service distance

2.5.1- using by-cubes

<http://localhost:8080/distances/by-cube?from=4929&to=5254>

GET http://localhost:8080/distances/by-cube?from=4929&to=5254

Status: 500 Internal Server Error Time: 196 ms Size: 416 B

```

1 {
2   "timestamp": "2021-05-23T15:41:58.756+0000",
3   "status": 500,
4   "error": "Internal Server Error",
5   "message": "could not extract ResultSet; SQL [n/a]; nested exception is org.hibernate.exception.SQLGrammarException: could not
6     extract ResultSet",
7   "path": "/distances/by-cube"
8 }

```

- **Erro:** Na query acima, ainda NÃO se tinha criado a respectiva extensão

```

cities=# Select * from cidade where nome='Itapeva' and uf='26';
 id | nome | uf | ibge | lat_lon | latitude | longitude | cod_tom
-----+-----+-----+-----+-----+-----+-----+-----
4964 | Itapeva | 26 | 3522406 | (-23.9787998199463,-48.8763999938965) | -23.9787998199463 | -48.8763999938965 | 6549
(1 row)

cities=# Select * from cidade where nome='São Paulo' and uf='26';
 id | nome | uf | ibge | lat_lon | latitude | longitude | cod_tom
-----+-----+-----+-----+-----+-----+-----+-----
5270 | São Paulo | 26 | 3550308 | (-23.5328998565674,-46.6394996643066) | -23.5328998565674 | -46.6394996643066 | 7107
(1 row)

cities=#

```

GET http://localhost:8080/distances/by-cube?from=4964&to=5270

Status: 200 OK 62 ms

```

1 233252.65691047724

```

2.5.2- using by-points

<http://localhost:8080/cities/distances/by-points?from=4929&to=5254>

- **Erro:** Na query acima, ainda NÃO se tinha criado a respectiva extensão

GET http://localhost:8080/distances/by-points?from=4929&to=5254

Status: 200 OK Time: 52 ms

```

1 7.57102293200459

```

3- Controlando as versões utilizando git / github

3.1- preparando o diretório do projeto na máquina local

-

```
F:\Meus Documentos\JH\Everis QA Beginner\Modulo08- Construindo uma API
Rest\CitiesRestApi>git init
Initialized empty Git repository in F:/Meus Documentos/JH/Everis QA Beginner/Modulo08-
Construindo uma API Rest/CitiesRestApi/.git/
```

```
F:\Meus Documentos\JH\Everis QA Beginner\Modulo08- Construindo uma API
Rest\CitiesRestApi>git status
On branch master
```

No commits yet

Untracked files:

(use "git add ..." to include in what will be committed)

```
.gitignore
build.gradle
gradle/
gradlew
gradlew.bat
settings.gradle
src/
```

nothing added to commit but untracked files present (use "git add" to track)

```
F:\Meus Documentos\JH\Everis QA Beginner\Modulo08- Construindo uma API Rest\CitiesRestApi
> add .
```

warning: LF will be replaced by CRLF in .gitignore.

The file will have its original line endings in your working directory

warning: LF will be replaced by CRLF in build.gradle.

The file will have its original line endings in your working directory

warning: LF will be replaced by CRLF in gradle/wrapper/gradle-wrapper.properties.

The file will have its original line endings in your working directory

warning: LF will be replaced by CRLF in gradlew.

The file will have its original line endings in your working directory

warning: LF will be replaced by CRLF in settings.gradle.

The file will have its original line endings in your working directory

warning: LF will be replaced by CRLF in

src/main/java/br/com/jhconsultores/CitiesAPI/CitiesApiApplication.java.

The file will have its original line endings in your working directory

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

warning: LF will be replaced by CRLF in

src/test/java/br/com/jhconsultores/CitiesAPI/CitiesApiApplicationTests.java.

The file will have its original line endings in your working directory

```
F:\Meus Documentos\JH\Everis QA Beginner\Modulo08- Construindo uma API
Rest\CitiesRestApi>git commit -m "Primeiro commit"
```

[master (root-commit) 09867e7] Primeiro commit

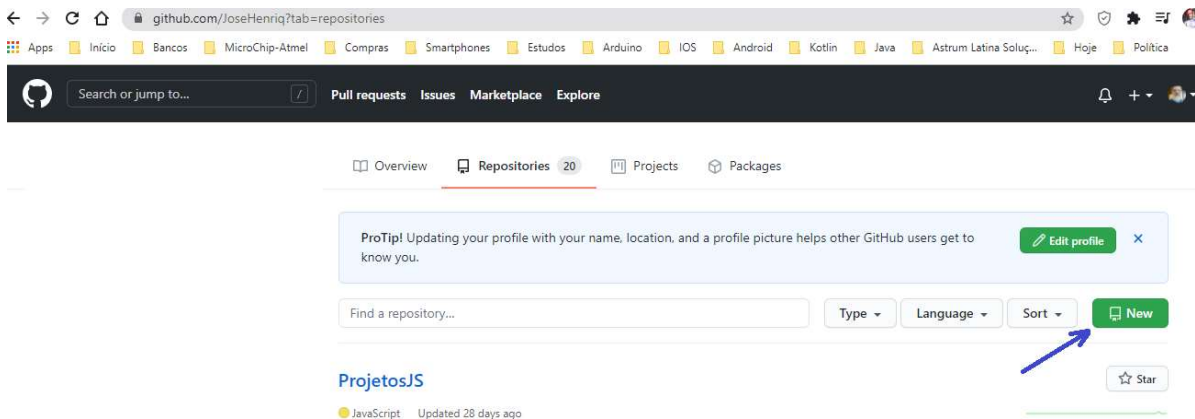
10 files changed, 374 insertions(+)

create mode 100644 .gitignore

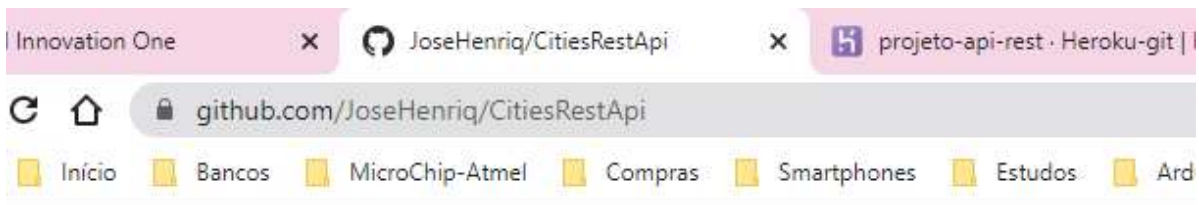
create mode 100644 build.gradle

create mode 100644 gradle/wrapper/gradle-wrapper.jar
create mode 100644 gradle/wrapper/gradle-wrapper.properties
create mode 100644 gradlew
create mode 100644 gradlew.bat
create mode 100644 settings.gradle
create mode 100644 src/main/java/br/com/jhconsultores/CitiesAPI/CitiesApiApplication.java
create mode 100644 src/main/resources/application.properties
create mode 100644 src/test/java/br/com/jhconsultores/CitiesAPI/CitiesApiApplicationTests.java

3.2- criando o novo repositório no github



- Scripts gerados pelo github na criação do repositório ok:



...or create a new repository on the command line

```
echo "# CitiesRestApi" >> README.md
git init
git add README.md
git commit -m "first commit"
git branch -M main
git remote add origin https://github.com/JoseHenriq/CitiesRestApi.git
git push -u origin main
```

...or push an existing repository from the command line

```
git remote add origin https://github.com/JoseHenriq/CitiesRestApi.git
git branch -M main
git push -u origin main
```

...or import code from another repository

You can initialize this repository with code from a Subversion, Mercurial, or TFS project.

Import code

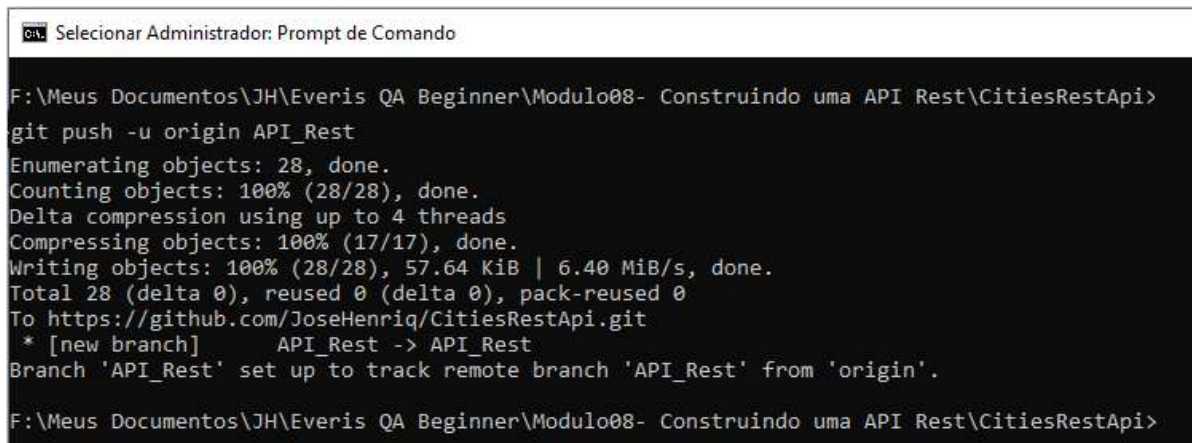
3.3- Enviando o projeto para o novo repositório no github

F:\Meus Documentos\JH\Everis QA Beginner\Modulo08- Construindo uma API

Rest\CitiesRestApi>git remote add origin <https://github.com/JoseHenriq/CitiesRestApi.git>

F:\Meus Documentos\JH\Everis QA Beginner\Modulo08- Construindo uma API

Rest\CitiesRestApi>git -M API_Rest



3.4- Clonando / baixando o repositório no github

A diferença entre clonar e fazer o download do zip é que na *clonagem*, é *criado* o diretório do projeto e *não se precisa inicializá-lo* na instalação do git na máquina local.

- comando: `>git clone https://github.com/JoseHenriq/CitiesRestApi.git`

```
C:\> Administrador: Prompt de Comando

Microsoft Windows [versão 10.0.18363.1500]
(c) 2019 Microsoft Corporation. Todos os direitos reservados.

C:\Windows\system32>cd F:\Meus Documentos\JH\Everis QA Beginner\Modulo08- Construindo uma API Rest
C:\Windows\system32>f:

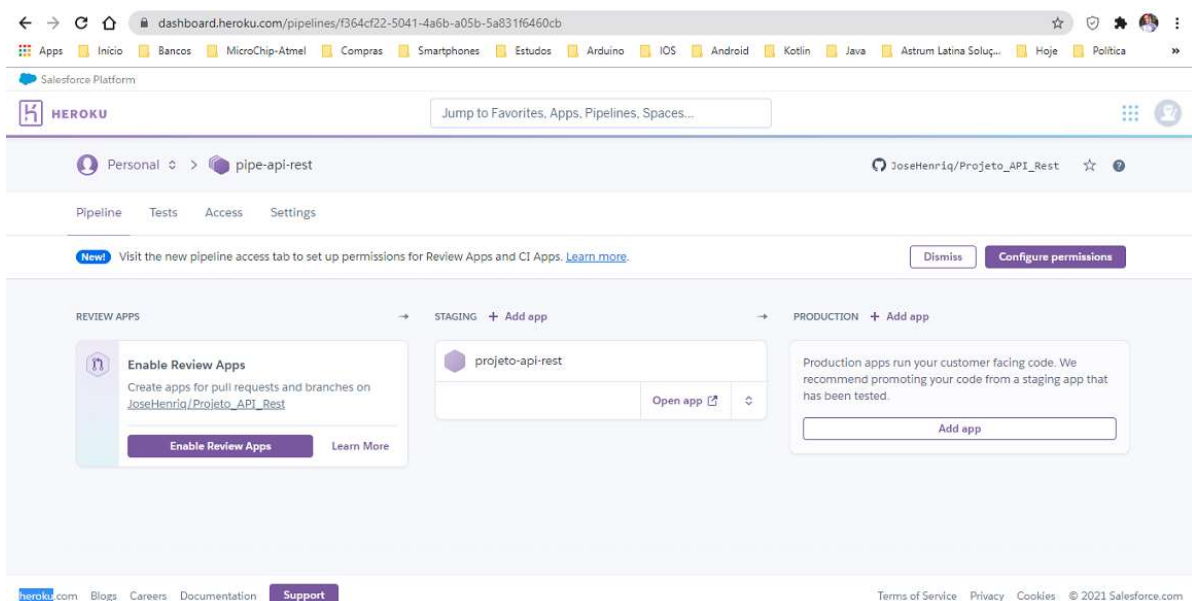
F:\Meus Documentos\JH\Everis QA Beginner\Modulo08- Construindo uma API Rest>
git clone https://github.com/JoseHenriq/CitiesRestApi.git

Cloning into 'CitiesRestApi'...
remote: Enumerating objects: 58, done.
remote: Counting objects: 100% (58/58), done.
remote: Compressing objects: 100% (34/34), done.
remote: Total 58 (delta 6), reused 56 (delta 4), pack-reused 0
Receiving objects: 100% (58/58), 207.92 KiB | 1.07 MiB/s, done.
Resolving deltas: 100% (6/6), done.

F:\Meus Documentos\JH\Everis QA Beginner\Modulo08- Construindo uma API Rest>_
```

4- Teste funcional utilizando DataBase remoto (Produção)

4.1- Setando o Heroku



App Information

App Name

projeto-api-rest

Region

United States

Stack

heroku-20

Framework

No framework detected

Slug size

No slug detected

GitHub repo

JoseHenriq/Projeto_API_Rest

Heroku git URL

<https://git.heroku.com/projeto-api-rest.git>

Administrador: Prompt de Comando

```
F:\Meus Documentos\JH\Everis QA Beginner\Modulo08- Construindo uma API Rest>heroku create
Creating app... !
! Invalid credentials provided.
heroku: Press any key to open up the browser to login or q to exit:
Opening browser to https://cli-auth.heroku.com/auth/cli/browser/4c834aa5-c0c4-4922-bc41-b8899c103
gA.vZKLbittasw7GCLnd71MSP1DrDzC5vFrpJ6SATd6knU
Logging in... done
Logged in as j.henriq@uol.com.br
Creating app... done, ☑ peaceful-dawn-43203
https://peaceful-dawn-43203.herokuapp.com/ | https://git.heroku.com/peaceful-dawn-43203.git

F:\Meus Documentos\JH\Everis QA Beginner\Modulo08- Construindo uma API Rest>heroku create
Creating app... done, ☑ morning-river-62211
https://morning-river-62211.herokuapp.com/ | https://git.heroku.com/morning-river-62211.git

F:\Meus Documentos\JH\Everis QA Beginner\Modulo08- Construindo uma API Rest>
```

Administrador: Prompt de Comando

```
F:\Meus Documentos\JH\Everis QA Beginner\Modulo08- Construindo uma API Rest\CitiesRestApi>heroku create
Creating app... done, ☑ peaceful-tundra-41521
https://peaceful-tundra-41521.herokuapp.com/ | https://git.heroku.com/peaceful-tundra-41521.git

F:\Meus Documentos\JH\Everis QA Beginner\Modulo08- Construindo uma API Rest\CitiesRestApi>heroku apps
=== j.henriq@uol.com.br Apps
morning-river-62211
murmuring-shore-17438
peaceful-dawn-43203
peaceful-tundra-41521
projeto-api-rest

F:\Meus Documentos\JH\Everis QA Beginner\Modulo08- Construindo uma API Rest\CitiesRestApi>git remote -v
heroku https://git.heroku.com/projeto-api-rest.git (fetch)
heroku https://git.heroku.com/projeto-api-rest.git (push)
origin https://github.com/JoseHenriq/CitiesRestApi.git (fetch)
origin https://github.com/JoseHenriq/CitiesRestApi.git (push)

F:\Meus Documentos\JH\Everis QA Beginner\Modulo08- Construindo uma API Rest\CitiesRestApi>
```

```
F:\Meus Documentos\JH\Everis QA Beginner\Modulo08- Construindo uma API Rest\CitiesRestApi>git push heroku master
error: src refspec master does not match any
error: failed to push some refs to 'https://git.heroku.com/projeto-api-rest.git'

F:\Meus Documentos\JH\Everis QA Beginner\Modulo08- Construindo uma API Rest\CitiesRestApi>
```

