

GenAI Bootcamp

Lab 5: Embedding

PostgreSQL init process complete; ready for start up.

2024-07-11 16:23:05.004 UTC [1] LOG: starting PostgreSQL 15.4 (Debian 15.4-2.pgdg120+1) on aarch64-unknown-linux-gnu, compiled by gcc (Debian 12.2.0-14) 12.2.0, 64-bit

2024-07-11 16:23:05.004 UTC [1] LOG: listening on IPv4 address "0.0.0.0", port 5432

2024-07-11 16:23:05.005 UTC [1] LOG: listening on IPv6 address "::", port 5432

2024-07-11 16:23:05.007 UTC [1] LOG: listening on Unix socket "/var/run/postgresql/.s.PGSQL.5432"

2024-07-11 16:23:05.014 UTC [63] LOG: database system was shut down at 2024-07-11 16:23:04 UTC

2024-07-11 16:23:05.017 UTC [1] LOG: database system is ready to accept connections

NOTE: Configuring authentication for SERVER mode.

pgAdmin 4 – Application Initialisation

=====

postfix/postlog: starting the Postfix mail system

[2024-07-11 16:23:14 +0000] [1] [INFO] Starting gunicorn 22.0.0

[2024-07-11 16:23:14 +0000] [1] [INFO] Listening at: http://[:]:80 (1)

[2024-07-11 16:23:14 +0000] [1] [INFO] Using worker: gthread

[2024-07-11 16:23:14 +0000] [117] [INFO] Booting worker with pid: 117

::ffff:172.20.0.1 -- [11/Jul/2024:16:23:57 +0000] "GET / HTTP/1.1" 302 213 "--" "Mozilla/5.0 (Macintosh; Intel Mac OS X 10.15; rv:128.0) Gecko/20100101 Firefox/128.0"

::ffff:172.20.0.1 -- [11/Jul/2024:16:23:57 +0000] "GET /login?next=/ HTTP/1.1" 200 2614 "--" "Mozilla/5.0 (Macintosh; Intel Mac OS X 10.15; rv:128.0) Gecko/20100101 Firefox/128.0"

::ffff:172.20.0.1 -- [11/Jul/2024:16:23:57 +0000] "GET /static/vendor/require/require.min.js?ver=80900 HTTP/1.1" 200 7193 "http://localhost:5050/login?next=/ Mozilla/5.0 (Macintosh; Intel Mac OS X 10.15; rv:128.0) Gecko/20100101 Firefox/128.0"

::ffff:172.20.0.1 -- [11/Jul/2024:16:23:57 +0000] "GET /static/js/generated/vendor.react.js?ver=80900 HTTP/1.1" 200 87812 "http://localhost:5050/login?next=/ Mozilla/5.0 (Macintosh; Intel Mac OS X 10.15; rv:128.0) Gecko/20100101 Firefox/128.0"

::ffff:172.20.0.1 -- [11/Jul/2024:16:23:57 +0000] "GET /static/js/generated/pgadmin_commons.js?ver=80900 HTTP/1.1" 200 6099 "http://localhost:5050/login?next=/ Mozilla/5.0 (Macintosh; Intel Mac OS X 10.15; rv:128.0) Gecko/20100101 Firefox/128.0"

::ffff:172.20.0.1 -- [11/Jul/2024:16:23:57 +0000] "GET /static/js/generated/style.css?ver=80900 HTTP/1.1" 200 96054 "http://localhost:5050/login?next=/ Mozilla/5.0 (Macintosh; Intel Mac OS X 10.15; rv:128.0) Gecko/20100101 Firefox/128.0"

::ffff:172.20.0.1 -- [11/Jul/2024:16:23:57 +0000] "GET /static/js/generated/vendor.sqleditor.js?ver=80900 HTTP/1.1" 200 331177 "http://localhost:5050/login?next=/ Mozilla/5.0 (Macintosh; Intel Mac OS X 10.15; rv:128.0) Gecko/20100101 Firefox/128.0"

::ffff:172.20.0.1 -- [11/Jul/2024:16:23:57 +0000] "GET /static/js/generated/vendor.main.js?ver=80900 HTTP/1.1" 200 158186 "http://localhost:5050/login?next=/ Mozilla/5.0 (Macintosh; Intel Mac OS X 10.15; rv:128.0) Gecko/20100101 Firefox/128.0"

::ffff:172.20.0.1 -- [11/Jul/2024:16:23:57 +0000] "GET /static/js/generated/vendor.others.js?ver=80900 HTTP/1.1" 200 1041904 "http://localhost:5050/login?next=/ Mozilla/5.0 (Macintosh; Intel Mac OS X 10.15; rv:128.0) Gecko/20100101 Firefox/128.0"

::ffff:172.20.0.1 -- [11/Jul/2024:16:23:57 +0000] "GET /static/js/generated/fonts/Roboto-Regular..ttf HTTP/1.1" 200 0 "http://localhost:5050/static/js/generated/style.css?ver=80900 Mozilla/5.0 (Macintosh; Intel Mac OS X 10.15; rv:128.0) Gecko/20100101 Firefox/128.0"

::ffff:172.20.0.1 -- [11/Jul/2024:16:23:57 +0000] "GET /favicon.ico?ver=80900 HTTP/1.1" 302 245 "http://localhost:5050/login?next=/ Mozilla/5.0 (Macintosh; Intel Mac OS X 10.15; rv:128.0) Gecko/20100101 Firefox/128.0"

::ffff:172.20.0.1 -- [11/Jul/2024:16:23:57 +0000] "GET /static/js/generated/security.pages.js?ver=80900 HTTP/1.1" 200 130441 "http://localhost:5050/login?next=/ Mozilla/5.0 (Macintosh; Intel Mac OS X 10.15; rv:128.0) Gecko/20100101 Firefox/128.0"

::ffff:172.20.0.1 -- [11/Jul/2024:16:23:57 +0000] "GET /static/favicon.ico?ver=80900 HTTP/1.1" 200 0 "http://localhost:5050/login?next=/ Mozilla/5.0 (Macintosh; Intel Mac OS X 10.15; rv:128.0) Gecko/20100101 Firefox/128.0"

::ffff:172.20.0.1 -- [11/Jul/2024:16:23:57 +0000] "GET /browser/js/endpoints.js?ver=80900 HTTP/1.1" 200 16336 "http://localhost:5050/login?next=/ Mozilla/5.0 (Macintosh; Intel Mac OS X 10.15; rv:128.0) Gecko/20100101 Firefox/128.0"

::ffff:172.20.0.1 -- [11/Jul/2024:16:23:57 +0000] "GET /tools/translations.js?ver=80900 HTTP/1.1" 200 321 "http://localhost:5050/login?next=/ Mozilla/5.0 (Macintosh; Intel Mac OS X 10.15; rv:128.0) Gecko/20100101 Firefox/128.0"



pgAdmin

Login

[Forgotten your password?](#)

Login

Object Explorer

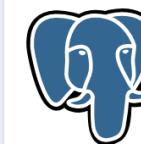


Dashboard X Properties X SQL X Statistics X Dependencies X Dependents X Processes X

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Servers

Welcome



pgAdmin

Management Tools for PostgreSQL

Feature rich | Maximises PostgreSQL | Open Source

pgAdmin is an Open Source administration and management tool for the PostgreSQL database. It includes a graphical administration interface, an SQL query tool, a procedural code debugger and much more. The tool is designed to answer the needs of developers, DBAs and system administrators alike.

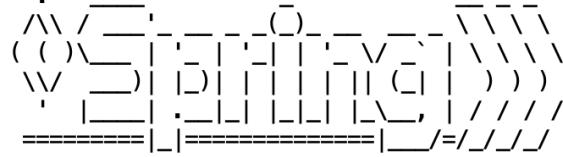
Quick Links

[Add New Server](#)[Configure pgAdmin](#)

Getting Started

[PostgreSQL Documentation](#)[pgAdmin Website](#)[Planet PostgreSQL](#)[Community Support](#)

```
[INFO] >>> spring-boot:3.3.1:run (default-cli) > test-compile @ gen_ai_training_05 >>>
[INFO]
[INFO] --- resources:3.3.1:resources (default-resources) @ gen_ai_training_05 ---
[INFO] Copying 1 resource from src/main/resources to target/classes
[INFO] Copying 0 resource from src/main/resources to target/classes
[INFO]
[INFO] --- compiler:3.13.0:compile (default-compile) @ gen_ai_training_05 ---
[INFO] Nothing to compile - all classes are up to date.
[INFO]
[INFO] --- resources:3.3.1:testResources (default-testResources) @ gen_ai_training_05 ---
[INFO] skip non existing resourceDirectory /Users/jegors/Projects.epam/epam-gen-ai-bootcamp-coursework/lab5/src/test/resources
[INFO]
[INFO] --- compiler:3.13.0:testCompile (default-testCompile) @ gen_ai_training_05 ---
[INFO] Nothing to compile - all classes are up to date.
[INFO]
[INFO] <<< spring-boot:3.3.1:run (default-cli) < test-compile @ gen_ai_training_05 <<<
[INFO]
[INFO]
[INFO] --- spring-boot:3.3.1:run (default-cli) @ gen_ai_training_05 ---
[INFO] Attaching agents: []
```



:: Spring Boot :: (v3.3.1)

```
2024-07-11T19:36:02.110+03:00 INFO 27677 --- [lab5] [main] c.e.training.gen.ai.PgvectorApplication : Starting PgvectorApplication using Java 21.0.2 with PID 27677 (/Users/jegors/Projects/epam/epam-gen-ai-bootcamp-coursework/lab5/target/classes started by jegors in /Users/jegors/Projects/epam/epam-gen-ai-bootcamp-coursework/lab5)
2024-07-11T19:36:02.112+03:00 INFO 27677 --- [lab5] [main] c.e.training.gen.ai.PgvectorApplication : No active profile set, falling back to 1 default profile: "default"
2024-07-11T19:36:02.653+03:00 INFO 27677 --- [lab5] [main] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat initialized with port 8080 (http)
2024-07-11T19:36:02.659+03:00 INFO 27677 --- [lab5] [main] o.apache.catalina.core.StandardService : Starting service [Tomcat]
2024-07-11T19:36:02.659+03:00 INFO 27677 --- [lab5] [main] o.apache.catalina.core.StandardEngine : Starting Servlet engine: [Apache Tomcat/10.1.25]
2024-07-11T19:36:02.683+03:00 INFO 27677 --- [lab5] [main] o.a.c.c.C.[Tomcat].[localhost].[] : Initializing Spring embedded WebApplicationContext
2024-07-11T19:36:02.683+03:00 INFO 27677 --- [lab5] [main] w.s.c.ServletWebServerApplicationContext : Root WebApplicationContext: initialization completed in 550 ms
2024-07-11T19:36:02.766+03:00 WARN 27677 --- [lab5] [main] c.a.c.http.netty.implementation.Utility : The following Netty dependencies have versions that do not match the versions specified in the azure-core-http-netty pom.xml file. This may result in unexpected behavior. If your application runs without issue this message can be ignored, otherwise please update the Netty dependencies to match the versions specified in the pom.xml file. Versions found in runtime: 'io.netty:netty-common' version: 4.1.111.Final (expected: 4.1.101.Final), 'io.netty:netty-handler' version: 4.1.111.Final (expected: 4.1.101.Final), 'io.netty:netty-handler-proxy' version: 4.1.111.Final (expected: 4.1.101.Final), 'io.netty:netty-buffer' version: 4.1.111.Final (expected: 4.1.101.Final), 'io.netty:netty-codec' version: 4.1.111.Final (expected: 4.1.101.Final), 'io.netty:netty-codec-http' version: 4.1.111.Final (expected: 4.1.101.Final), 'io.netty:netty-codec-http2' version: 4.1.111.Final (expected: 4.1.101.Final), 'io.netty:netty-transport-native-unix-common' version: 4.1.111.Final (expected: 4.1.101.Final), 'io.netty:netty-transport-native-epoll' version: 4.1.111.Final (expected: 4.1.101.Final), 'io.netty:netty-transport-native-kqueue' version: 4.1.111.Final (expected: 4.1.101.Final)
2024-07-11T19:36:02.869+03:00 INFO 27677 --- [lab5] [main] com.zaxxer.hikari.HikariDataSource : HikariPool-1 - Starting...
2024-07-11T19:36:02.948+03:00 INFO 27677 --- [lab5] [main] com.zaxxer.hikari.pool.HikariPool : HikariPool-1 - Added connection org.postgresql.jdbc.PgConnection@498a612d
2024-07-11T19:36:02.949+03:00 INFO 27677 --- [lab5] [main] com.zaxxer.hikari.HikariDataSource : HikariPool-1 - Start completed.
```

Project

- .idea
- .mvn
- servers.json
- src
 - main
 - test
 - java
 - com.epam.training.gen.ai
 - PgvectorApplicationTests
 - resources
 - API dimensions.http
- target
- Azure
- docker-compose.yml

PgvectorApplication.java OpenAIProperties.java OpenAIConfig.java pom.xml (gen_ai_training_05) API dimensions.http Examples ✓

+ ⏱ ⏴ ⏵ Run with: No Environment

```
1 # curl --location --request GET 'localhost:8080/ai/dimensions'
2 GET localhost:8080/ai/dimensions
3 |
```

Services

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HTTP Request

GET dimensions | #1 Status: 200 (225 ms)

Docker

Compose: docker-compose.yml

Docker-compose: lab5 healthy

Containers

Images

Networks

Volumes

Azure

GET http://localhost:8080/ai/dimensions
Show Request

HTTP/1.1 200
(Headers) ...Content-Type: application/json...

1536
Response file saved.
[2024-07-11T194056.200.json](#)

Response code: 200; Time: 225ms (225 ms); Content length: 4 bytes (4 B)

Project ion.java OpenAIProperties.java OpenAIConfig.java pom.xml (gen_ai_training_05) API dimensions.http API embedding.http Examples

.mvn servers.json src main test

+ ⏷ ⏸ ⏹ ⏹ Run with: No Environment

1 **### Get embedding for a message**

2 **GOT <http://localhost:8080/ai/embedding>**

3 **?message=do-vector-pls**

4

Services

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HTTP Request **dimensions** | #1 Status: 200 (225 ms)

embedding | Get embedding for a message Status: 200

Docker

- Compose: docker-compose.yml
- Docker-compose: lab5 healthy
- Containers
- Images
- Networks
- Volumes

Azure

-0.01557103004551703,

0.010873550549149513,

-0.03211001679301262,

-0.02252807468175888,

0.020951109007000923,

-0.005290342960506678,

-0.014966150745749474,

-0.010948644019663334,

0.021912306547164917,

0.004062562715262175,

-0.0020838468335568905,

0.014560645446181297,

-0.03135908022522926,

-0.03343166410923004,

0.029481740668416023,

-0.014733361080288887,

-0.013584429398179054,

-0.0016285920282825828,

-0.02353432960808277

]

}

}

}

Response file saved.

> [2024-07-11T194255.200.json](#)

Project

lab5 [gen_ai_training_05] ~/Projects.epam/epam/lab5

- .idea
- .mvn
- servers.json
- src
 - main
 - test
 - java
 - com.epam.training.gen.ai
 - PgvectorApplicationTests
 - resources

API dimensions.http

API embedding.http

ion.java OpenAIProperties.java OpenAIConfig.java pom.xml (gen_ai_training_05) Examples

Run with: No Environment

```
1  ##### Get embedding for a message
2  GET http://localhost:8080/ai/embedding
3  ?message=do-vector-pls
4
5  ##### post embedding for a message
6  POST http://localhost:8080/ai/embedding
7  Content-Type: application/json
8
9  {
10   "field": "Lorem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard
11 }
12 }
```

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Services



HTTP Request

- (GET) dimensions | #1 Status: 200 (225 ms)
- (POST) embedding | Get embedding for a long message Status: 200
- (GET) embedding | Get embedding for a message Status: 200

Docker

- Compose: docker-compose.yml
 - Docker-compose: lab5 healthy
 - Containers
 - Images
 - Networks
 - Volumes
- > Azure



POST http://localhost:8080/ai/embedding

Show Request

HTTP/1.1 200

Content-Length: 0

Date: Thu, 11 Jul 2024 16:48:12 GMT

<Response body is empty>

Response code: 200; Time: 871ms (871 ms); Content length: 0 bytes (0 B)

Project **lab5 [gen_ai_training_05]** ~/Projects.epam/epam/lab5

File: API embedding.http

```
ion.java      OpenAIProperties.java      OpenAIConfig.java      pom.xml (gen_ai_training_05)      API dimensions.http      API embedding.http
+ | Run with: No Environment
```

Examples

```
9
10 {
11     "field": "Lorem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make a type specimen book. It has survived not only five centuries, but also the leap into electronic typesetting, remaining essentially unchanged. It was popularised in the 1960s with the release of Letraset sheets containing Lorem Ipsum passages, and more recently with desktop publishing software like Aldus PageMaker including versions of Lorem Ipsum.\n",
12 }
13
14 ### Search for a message
15 GET localhost:8080/ai/embedding/search
16 ?message=lorem
17 |
```

Services

+ ☺ □ ▲ ×

API HTTP Request

- GET dimensions** | #1 Status: 200 (225 ms)
- embedding | Get embedding for a long message** Status: 200
- embedding | Get embedding for a message** Status: 200
- embedding | search** Status: 200 (1 sec, 640 ms)

Docker

- Compose: docker-compose.yml
- Docker-compose: lab5 healthy
- Containers
- Images
- Networks
- Volumes
- Azure

-0.014473657123744488

[
"content": "{\n \"field\": \"Lorem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make a type specimen book. It has survived not only five centuries, but also the leap into electronic typesetting, remaining essentially unchanged. It was popularised in the 1960s with the release of Letraset sheets containing Lorem Ipsum passages, and more recently with desktop publishing software like Aldus PageMaker including versions of Lorem Ipsum.\n\"},
"id": "2ab077ff-0b58-4f80-81b1-08fe046e4cad",
"metadata": {
 "distance": 0.19327335
},
"media": []
]
Response file saved.
> 2024-07-11T195006.200.json