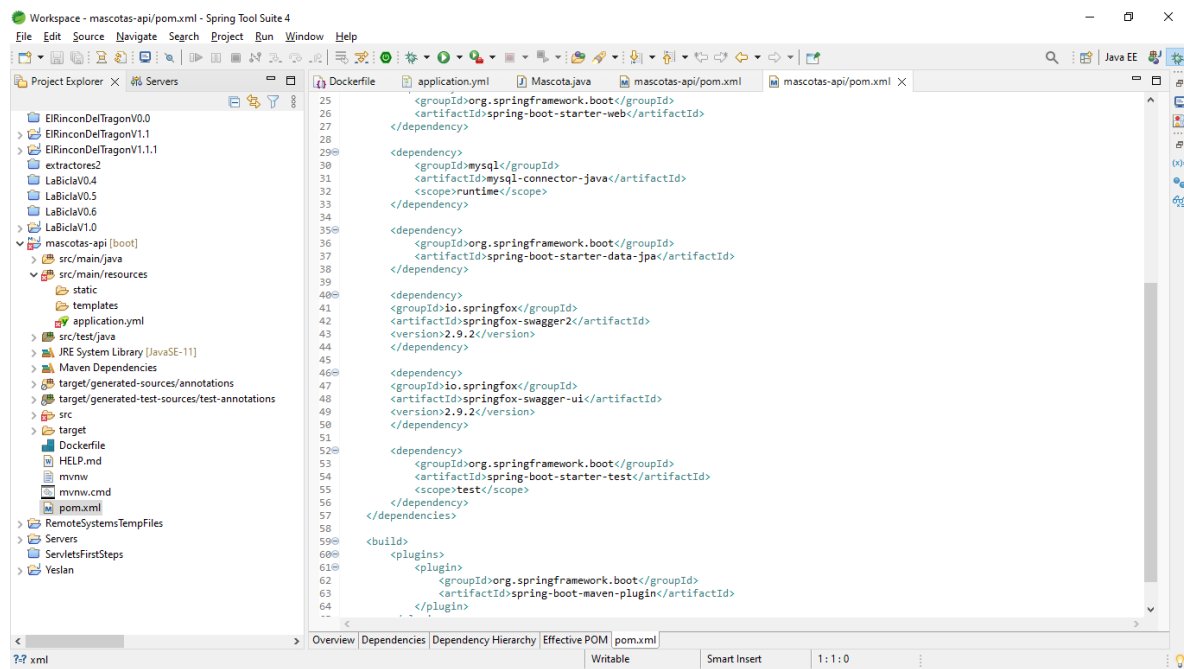


Practica Microservicios (mascotas-api)

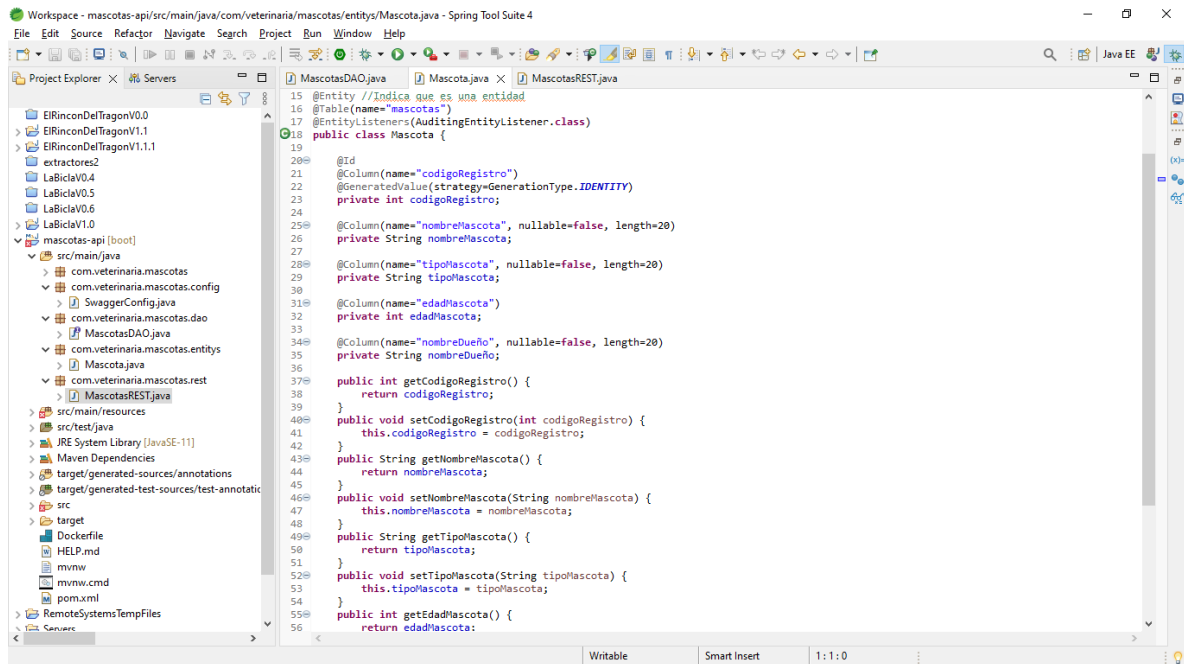
La práctica se comenzó seleccionando las siguientes tecnologías para su desarrollo:

- El lenguaje de Java mediante su jdk11.
- El framework de Spring Boot 2.6.3.
- Hibernate para la persistencia de datos que incluye como dependencia el framework.
- Maven para la generación del JAR.
- MySQL para la creación de la base de datos.
- Docker para la contenerizar los componentes.

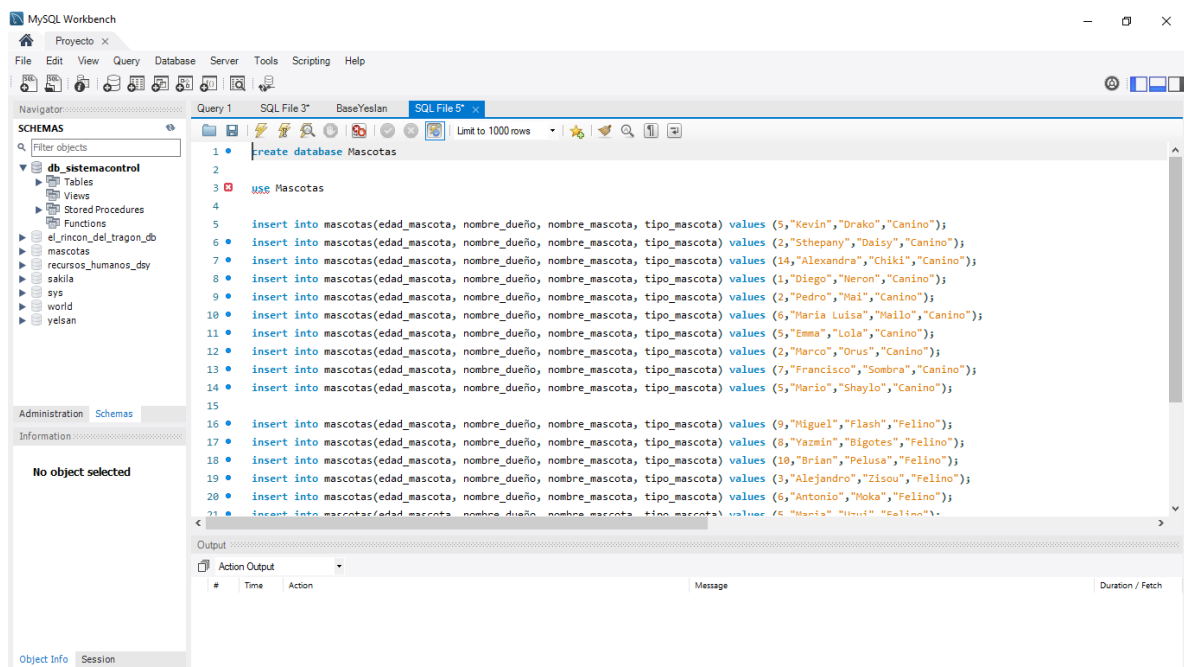
La practica se comienza creando el proyecto en un IDE especializado en la creación de proyectos Spring. Se comienza por la integración de las dependencias en el archivo **pom.xml**



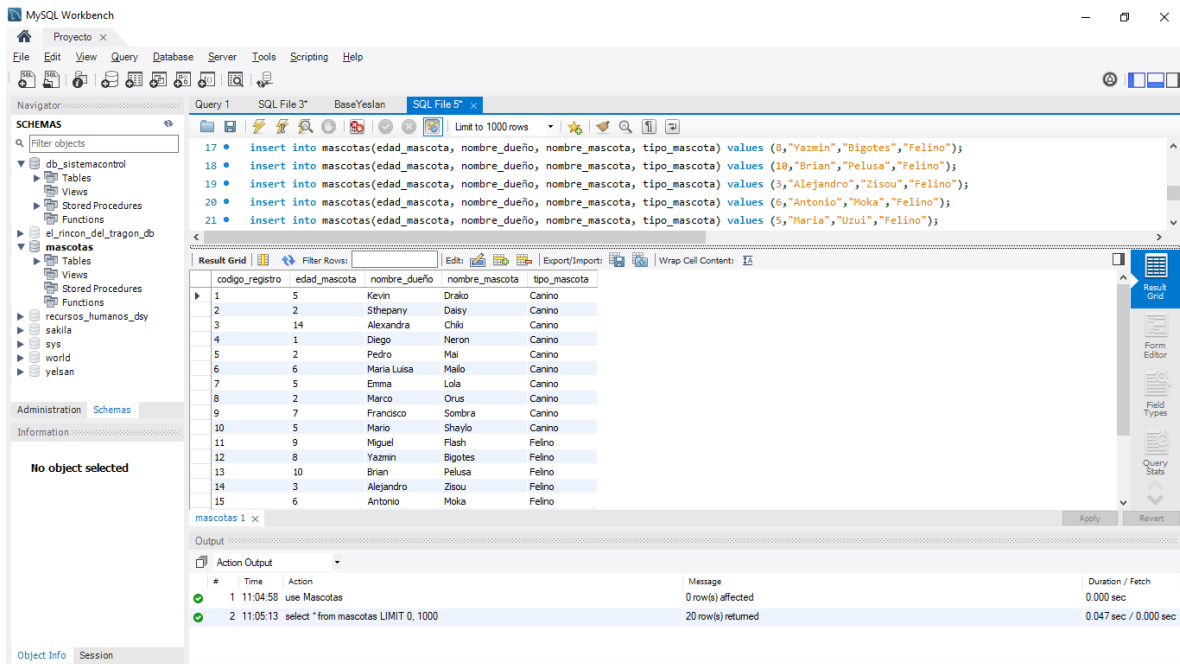
A continuación, se crean las propiedades y los métodos de acceso del objeto que consultaremos y/o devolveremos, utilizando el etiquetado que ofrece Spring, con el que podemos decirle que genere en contenido dentro de una base de datos.



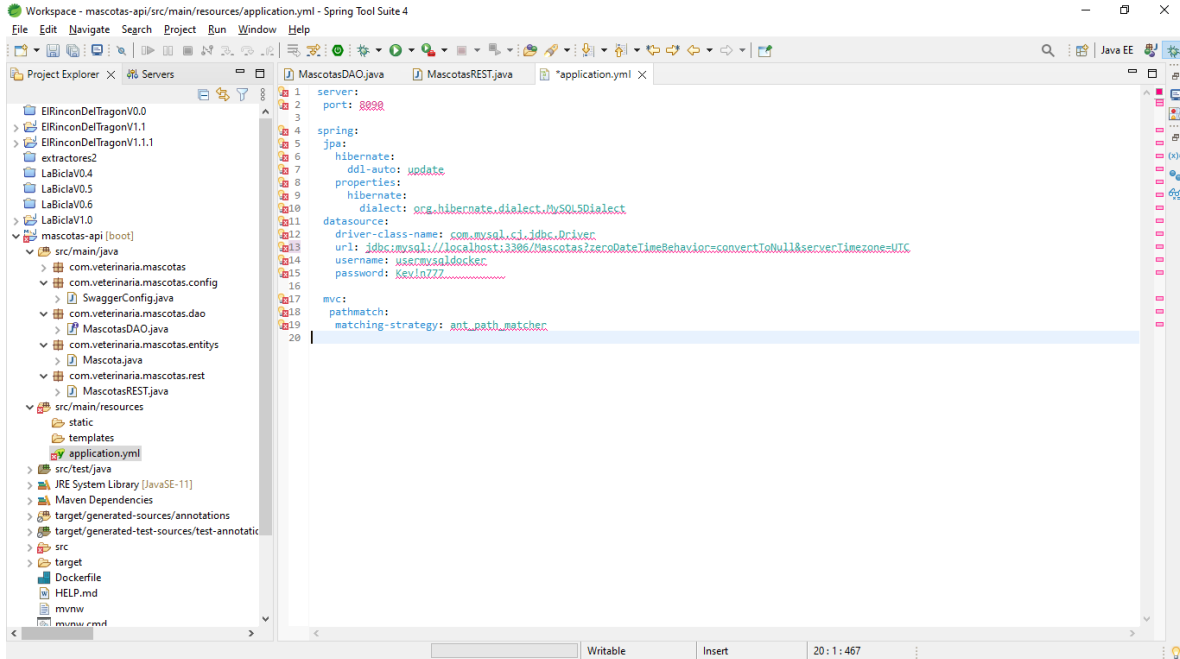
Estas propiedades, mediante su etiquetado indican los campos que contendrá la tabla “mascotas”, por lo que únicamente se deberá de crear la base de datos.



Una vez creada la base de datos y que se hayan generado las tablas al compilar el proyecto, podemos insertar datos para nuestras pruebas con la API.

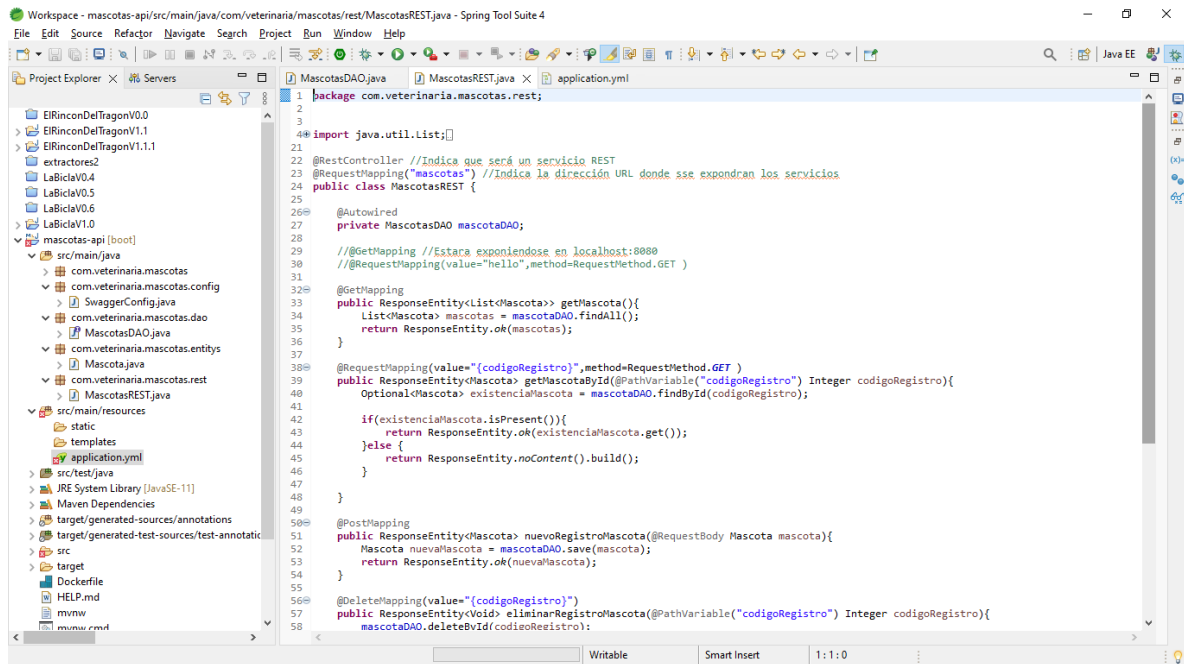


Lo siguiente es establecer la conexión a la base de datos dentro del proyecto mediante el archivo “application”, el cual se utiliza en el formato yml. Aquí se indica el puerto en donde se quiere desplegar la API y la dirección de la base de datos a donde se consumirán los datos.



Ya que se comprueba que hay conexión a la base de datos se comienzan a crear los servicios rest.

Se comienza por el servicio **GET**, dicho servicio se divide en dos, uno con el que obtenemos todos los datos de la base de datos que consultemos y otro que obtiene solo un dato en específico mediante su id.



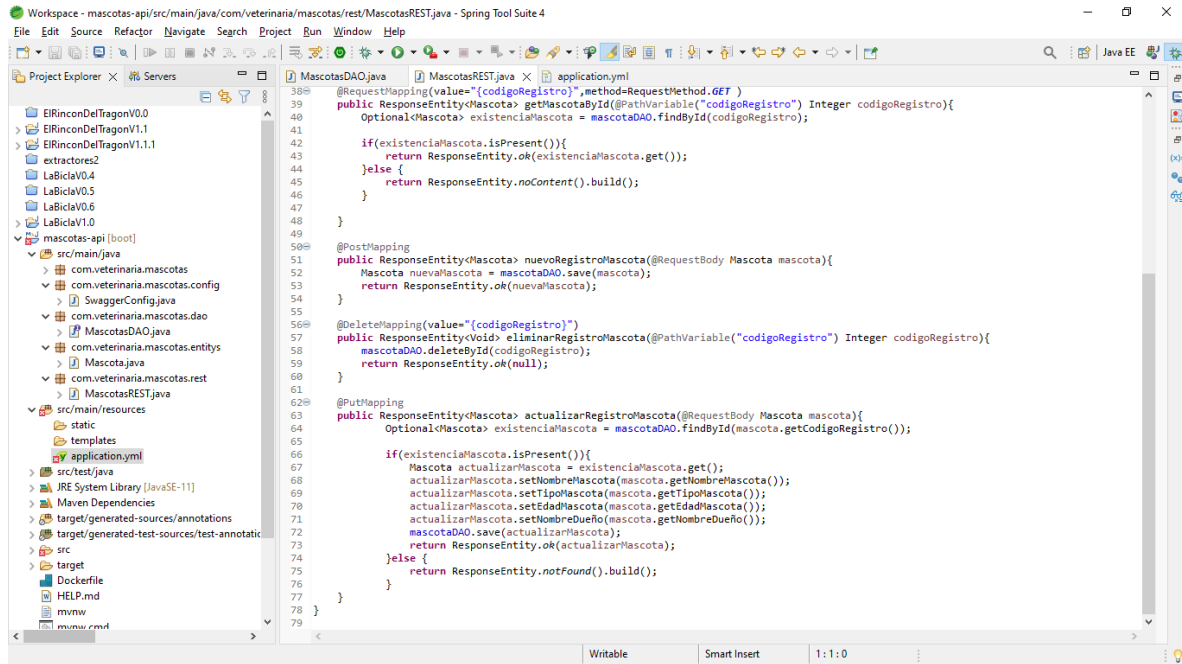
```
1 package com.veterinaria.mascotas.rest;
2
3
4 import java.util.List;
5
6 @RestController //Indica que será un servicio REST
7 @RequestMapping("mascotas") //Indica la dirección URL donde se expondrán los servicios
8 public class MascotasREST {
9
10     @Autowired
11     private MascotasDAO mascotasDAO;
12
13     //GetMapping //Estara exponiendose en localhost:8080
14     //RequestMapping(value="hello",method=RequestMethod.GET )
15
16     @GetMapping
17     public ResponseEntity<List<Mascota>> getMascotas(){
18         List<Mascota> mascotas = mascotasDAO.findAll();
19         return ResponseEntity.ok(mascotas);
20     }
21
22     @RequestMapping(value="{codigoRegistro}",method=RequestMethod.GET )
23     public ResponseEntity<Mascota> getMascotaById(@PathVariable("codigoRegistro") Integer codigoRegistro){
24         Optional<Mascota> existenciaMascota = mascotasDAO.findById(codigoRegistro);
25
26         if(existenciaMascota.isPresent()){
27             return ResponseEntity.ok(existenciaMascota.get());
28         }else {
29             return ResponseEntity.noContent().build();
30         }
31     }
32
33     @PostMapping
34     public ResponseEntity<Mascota> nuevoRegistroMascota(@RequestBody Mascota mascota){
35         Mascota nuevaMascota = mascotasDAO.save(mascota);
36         return ResponseEntity.ok(nuevaMascota);
37     }
38
39     @DeleteMapping(value="{codigoRegistro}")
40     public ResponseEntity<Void> eliminarRegistroMascota(@PathVariable("codigoRegistro") Integer codigoRegistro){
41         mascotasDAO.deleteById(codigoRegistro);
42     }
43 }
```

```
[{"codigoRegistro":1,"nombreMascota":"Drako","tipoMascota":"Canino","edadMascota":5,"nombreDueño":"Kevin"},
{"codigoRegistro":2,"nombreMascota":"Daisy","tipoMascota":"Canino","edadMascota":2,"nombreDueño":"Stepany"},
{"codigoRegistro":3,"nombreMascota":"Chiki","tipoMascota":"Canino","edadMascota":14,"nombreDueño":"Alexandra"},
{"codigoRegistro":4,"nombreMascota":"Merón","tipoMascota":"Canino","edadMascota":1,"nombreDueño":"Diego"},
{"codigoRegistro":5,"nombreMascota":"Mai","tipoMascota":"Canino","edadMascota":2,"nombreDueño":"Pedro"},
{"codigoRegistro":6,"nombreMascota":"Hailo","tipoMascota":"Canino","edadMascota":6,"nombreDueño":"Maria Luisa"},
{"codigoRegistro":7,"nombreMascota":"Lola","tipoMascota":"Canino","edadMascota":5,"nombreDueño":"Emma"},
{"codigoRegistro":8,"nombreMascota":"Orus","tipoMascota":"Canino","edadMascota":2,"nombreDueño":"Marco"},
{"codigoRegistro":9,"nombreMascota":"Sombra","tipoMascota":"Canino","edadMascota":7,"nombreDueño":"Francisco"},
{"codigoRegistro":10,"nombreMascota":"Shaylo","tipoMascota":"Canino","edadMascota":5,"nombreDueño":"Mario"},
{"codigoRegistro":11,"nombreMascota":"Flash","tipoMascota":"Felino","edadMascota":9,"nombreDueño":"Miguel"},
{"codigoRegistro":12,"nombreMascota":"Bigotes","tipoMascota":"Felino","edadMascota":8,"nombreDueño":"Vazmin"},
{"codigoRegistro":13,"nombreMascota":"Pelusa","tipoMascota":"Felino","edadMascota":10,"nombreDueño":"Brian"},
{"codigoRegistro":14,"nombreMascota":"Zisou","tipoMascota":"Felino","edadMascota":3,"nombreDueño":"Alejandro"},
{"codigoRegistro":15,"nombreMascota":"Moka","tipoMascota":"Felino","edadMascota":6,"nombreDueño":"Antonio"},
{"codigoRegistro":16,"nombreMascota":"Uzui","tipoMascota":"Felino","edadMascota":5,"nombreDueño":"Maria"},
{"codigoRegistro":17,"nombreMascota":"Mora","tipoMascota":"Felino","edadMascota":3,"nombreDueño":"Corina"},
{"codigoRegistro":18,"nombreMascota":"Creed","tipoMascota":"Felino","edadMascota":9,"nombreDueño":"Antonio"},
{"codigoRegistro":19,"nombreMascota":"Drago","tipoMascota":"Felino","edadMascota":5,"nombreDueño":"Angel"},
{"codigoRegistro":20,"nombreMascota":"Boss","tipoMascota":"Felino","edadMascota":7,"nombreDueño":"Jaan"}]
```



```
{ "codigoRegistro": 5, "nombreMascota": "Mai", "tipoMascota": "Canino", "edadMascota": 2, "nombreDueño": "Pedro" }
```

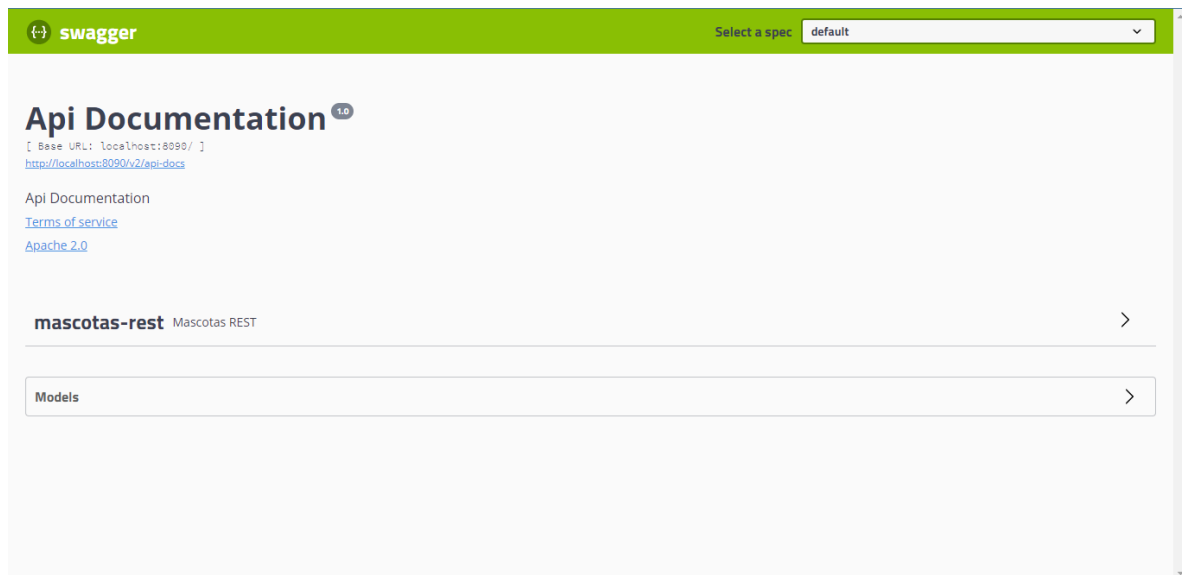
Se continua con los métodos **POST, PUT, DELETE**, con los cuales se obtiene una API RESTful, y para definirlos según su tipo de utiliza el etiquetado que ofrece Spring, dentro de esas etiquetas se ingresan las variables correspondientes al servicio, como lo son la ruta en donde se encontrara y el parámetro de entrada que solicitara para otorgar el servicio.

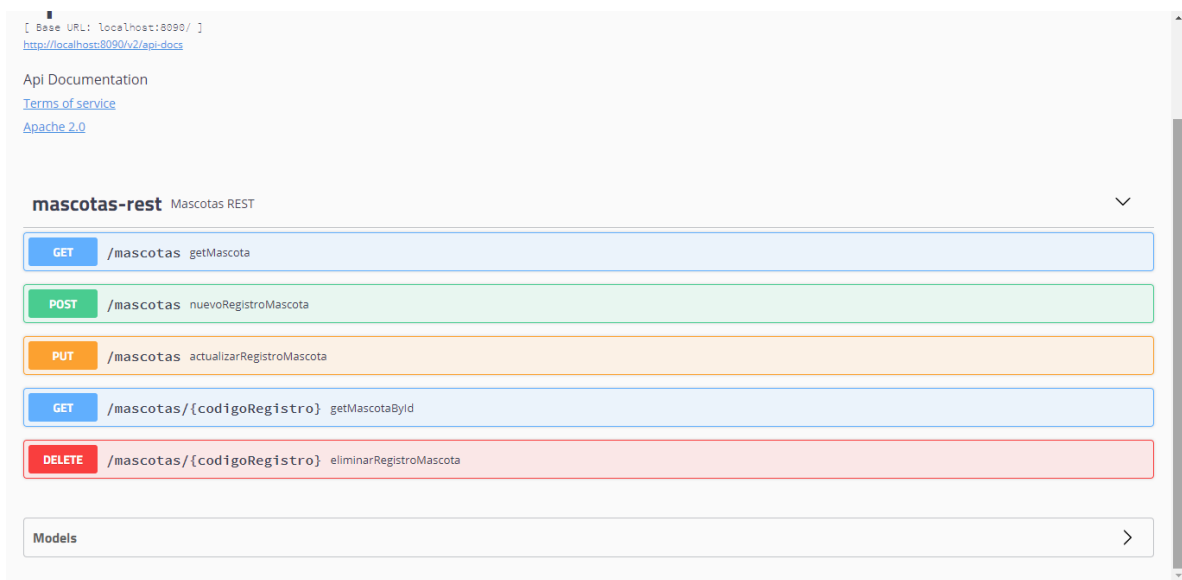
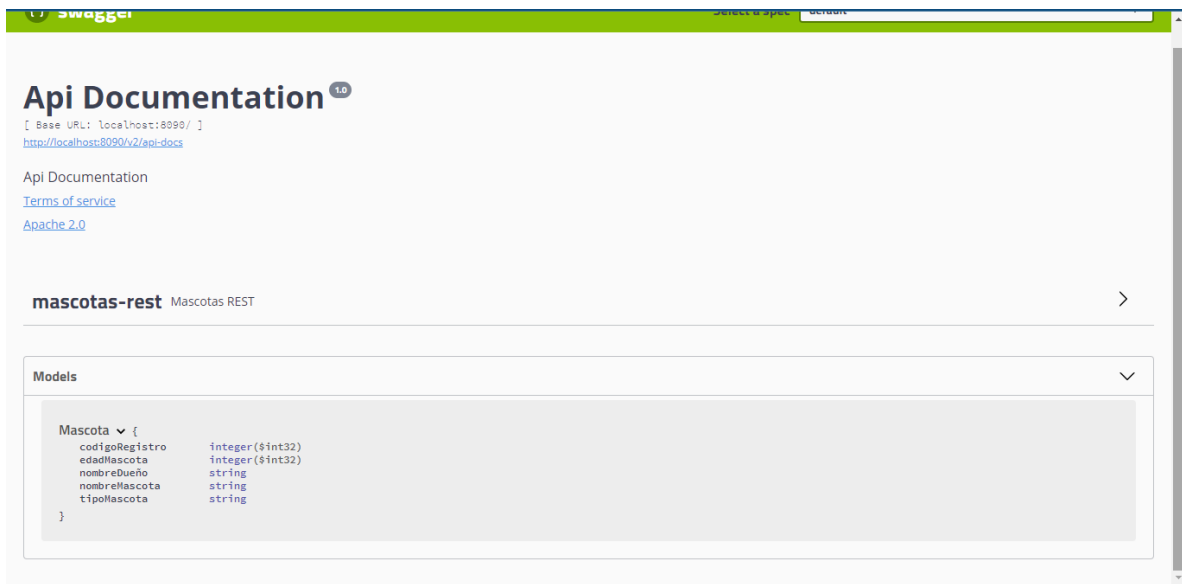


```
38 @RequestMapping(value = "/codigoRegistro", method = RequestMethod.GET)
39 public ResponseEntity<Mascota> getMascotaById(@PathVariable("codigoRegistro") Integer codigoRegistro){
40     Optional<Mascota> existenciaMascota = mascotaDAO.findById(codigoRegistro);
41
42     if(existenciaMascota.isPresent()){
43         return ResponseEntity.ok(existenciaMascota.get());
44     }else {
45         return ResponseEntity.noContent().build();
46     }
47 }
48
49
50 @PostMapping
51 public ResponseEntity<Mascota> nuevoRegistroMascota(@RequestBody Mascota mascota){
52     Mascota nuevaMascota = mascotaDAO.save(mascota);
53     return ResponseEntity.ok(nuevaMascota);
54 }
55
56 @DeleteMapping(value = "/codigoRegistro")
57 public ResponseEntity<Void> eliminarRegistroMascota(@PathVariable("codigoRegistro") Integer codigoRegistro){
58     mascotaDAO.deleteById(codigoRegistro);
59     return ResponseEntity.ok(null);
60 }
61
62 @PutMapping
63 public ResponseEntity<Mascota> actualizarRegistroMascota(@RequestBody Mascota mascota){
64     Optional<Mascota> existenciaMascota = mascotaDAO.findById(mascota.getCodigoRegistro());
65
66     if(existenciaMascota.isPresent()){
67         Mascota actualizarMascota = existenciaMascota.get();
68         actualizarMascota.setNombreMascota(mascota.getNombreMascota());
69         actualizarMascota.setTipoMascota(mascota.getTipoMascota());
70         actualizarMascota.setEdadMascota(mascota.getEdadMascota());
71         actualizarMascota.setNombreDueño(mascota.getNombreDueño());
72         mascotaDAO.save(actualizarMascota);
73         return ResponseEntity.ok(actualizarMascota);
74     }else {
75         return ResponseEntity.notFound().build();
76     }
77 }
78
79 }
```

Ya que están creados los servicios se pueden probar y hacer su documentación, la documentación o contrato de la API se crea en Swagger, utilizando una herramienta del mismo Spring que permite integrar a Swagger en las dependencias, así como hacer que esta funcione documentando todo el proyecto de forma automatiza.

La documentación se puede ver en la ruta de “**servidor**”/swagger-ui.html





Code

Details

200

Response body

```
[
  {
    "codigoRegistro": 1,
    "nombreMascota": "Drako",
    "tipoMascota": "Canino",
    "edadMascota": 5,
    "nombreDueño": "Kevin"
  },
  {
    "codigoRegistro": 2,
    "nombreMascota": "Daisy",
    "tipoMascota": "Canino",
    "edadMascota": 2,
    "nombreDueño": "Sthepany"
  },
  {
    "codigoRegistro": 3,
    "nombreMascota": "Chiki",
    "tipoMascota": "Canino",
    "edadMascota": 14,
    "nombreDueño": "Alexandra"
  },
  {
    "codigoRegistro": 4,
    "nombreMascota": "Neron",
    "tipoMascota": "Canino",
  }
]
```

Download

Response headers

```
connection: keep-alive
content-type: application/json
date: Mon, 24 Jan 2022 17:39:35 GMT
keep-alive: timeout=60
transfer-encoding: chunked
```

Responses

Name

Description

mascota required

(body)

Example Value

Model

```
{
  "edadMascota": 6,
  "nombreDueño": "Iamarcus",
  "nombreMascota": "Taquito",
  "tipoMascota": "Canino"
}
```

Cancel

Parameter content type

application/json

Execute

Clear

Curl

```
curl -X POST "http://localhost:8090/mascotas" -H "accept: */*" -H "Content-Type: application/json" -d '{"edadMascota": 6, "nombreDueño": "Jamarcus", "nombreMascota": "Taquito", "tipoMascota": "Canino"}'
```

Request URL

http://localhost:8090/mascotas

Server response

Code	Details
200	<p>Response body</p> <pre>{ "codigoRegistro": 21, "nombreMascota": "Taquito", "tipoMascota": "Canino", "edadMascota": 6, "nombreDueño": "Jamarcus"}</pre> <p>Download</p> <p>Response headers</p> <pre>connection: keep-alive content-type: application/json date: Mon, 24 Jan 2022 17:41:54 GMT keep-alive: timeout=60 transfer-encoding: chunked</pre>

Responses

Code	Description
------	-------------

Si volvemos a ejecutar el servicio **GET**

Code	Details
200	<p>Response body</p> <pre>{ "tipoMascota": "Felino", "edadMascota": 9, "nombreDueño": "Antonio"}, { "codigoRegistro": 19, "nombreMascota": "Drago", "tipoMascota": "Felino", "edadMascota": 5, "nombreDueño": "Angel"}, { "codigoRegistro": 28, "nombreMascota": "Boss", "tipoMascota": "Felino", "edadMascota": 7, "nombreDueño": "Jaen"}, { "codigoRegistro": 21, "nombreMascota": "Taquito", "tipoMascota": "Canino", "edadMascota": 6, "nombreDueño": "Jamarcus"}</pre> <p>Download</p> <p>Response headers</p> <pre>connection: keep-alive content-type: application/json date: Mon, 24 Jan 2022 17:43:17 GMT keep-alive: timeout=60 transfer-encoding: chunked</pre>

Responses

Code	Description
------	-------------

PUT/mascotasactualizarRegistroMascota

Parameters

Cancel

Name	Description
mascota <small>* required</small> <small>(body)</small>	mascota

Example Value

Model

```
{
  "codigoRegistro": 21,
  "edadMascota": 5,
  "nombreDueño": "Cooper",
  "nombreMascota": "Odddy",
  "tipoMascota": "Canind"
}
```

Cancel

Parameter content type
application/json

200

Response body

```
{
  "codigoRegistro": 21,
  "nombreMascota": "Odddy",
  "tipoMascota": "Canino",
  "edadMascota": 5,
  "nombreDueño": "Cooper"
}
```

Download

Response headers

```
connection: keep-alive
content-type: application/json
date: Mon, 24 Jan 2022 17:46:08 GMT
keep-alive: timeout=60
transfer-encoding: chunked
```

Responses

Code	Description
200	<div>OK</div> <div><div>Example Value</div><div>Model</div></div> <div><pre>{ "codigoRegistro": 0, "edadMascota": 0, "nombreDueño": "string", "nombreMascota": "string", "tipoMascota": "string" }</pre></div>
201	<div>Created</div>

Si volvemos a ejecutar el servicio **GET**

The screenshot shows a REST client interface with the following details:

- Method:** GET
- Endpoint:** /mascotas/{codigoRegistro} getMascotaById
- Response Body (JSON):**

```
[{"tipoMascota": "Felino", "edadMascota": 9, "nombreDue\u00f1o": "Antonio"}, {"codigoRegistro": 19, "nombreMascota": "Drago", "tipoMascota": "Felino", "edadMascota": 5, "nombreDue\u00f1o": "Angel"}, {"codigoRegistro": 20, "nombreMascota": "Boss", "tipoMascota": "Felino", "edadMascota": 7, "nombreDue\u00f1o": "Jaen"}, {"codigoRegistro": 21, "nombreMascota": "Oddy", "tipoMascota": "Canino", "edadMascota": 5, "nombreDue\u00f1o": "Cooper"}]
```
- Response Headers:**

```
connection: keep-alive
content-type: application/json
date: Mon, 24 Jan 2022 17:46:48 GMT
keep-alive: timeout=60
transfer-encoding: chunked
```
- Status:** 200 OK

The screenshot shows a REST client interface for the DELETE endpoint with the following details:

- Method:** DELETE
- Endpoint:** /mascotas/{codigoRegistro} eliminarRegistroMascota
- Parameters:**
 - Name:** codigoRegistro (required, integer(\$int32), path)
 - Description:** codigoRegistro
 - Value:** 21
- Action:** Execute
- Response Content Type:** */*
- Status:** 200 OK

The screenshot shows a REST client interface. At the top, a dark bar contains the command: `curl -X DELETE "http://localhost:8090/mascotas/21" -H "accept: */*"`. Below this, the 'Request URL' is `http://localhost:8090/mascotas/21`. The 'Server response' section shows a status code of 200. The 'Response headers' are: `connection: keep-alive`, `content-length: 0`, `date: Mon, 24 Jan 2022 17:48:01 GMT`, and `keep-alive: timeout=60`. At the bottom, a 'Responses' table lists status codes and their descriptions: 200 (OK), 204 (No Content), 401 (Unauthorized), and 403 (Forbidden).

Si volvemos a ejecutar el servicio **GET**

The screenshot shows a REST client interface. The 'Server response' section shows a status code of 200. The 'Response body' is a JSON array of three objects, each representing a pet. The 'Response headers' are: `connection: keep-alive`, `content-type: application/json`, `date: Mon, 24 Jan 2022 17:48:55 GMT`, `keep-alive: timeout=60`, and `transfer-encoding: chunked`. A 'Download' button is visible next to the response body.

Ya que comprobamos que nuestra API funciona, lo siguiente es descargar Docker, con lo que podremos crear un contenedor para nuestra API. Y Maven con lo que podremos empaquetar nuestra aplicación en un archivo JAR.

Ya se instaló Docker, ahora se crea un contenedor para MySQL y se configura como se muestra a continuación.

```
C:\WINDOWS\system32\cmd.exe

C:\Workspace\mascotas-api>docker pull mysql
Using default tag: latest
latest: Pulling from library/mysql
72a69066d2fe: Pull complete
93619dbc5b36: Pull complete
99da31dd6142: Pull complete
e5c70785bec0: Pull complete
fc41578cbf60: Pull complete
4785d896ef10: Pull complete
7d258cd4c93b: Pull complete
909700f41903: Pull complete
45fd33301836: Pull complete
92f970c68b71: Pull complete
bb3544339a9e: Pull complete
f66ddf4c43fa: Pull complete
Digest: sha256:d0507b088897c39f6cbc76285af1171d4551988475e00e91344060023cd9c553
Status: Downloaded newer image for mysql:latest
docker.io/library/mysql:latest

C:\Workspace\mascotas-api>docker images
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
mascotasapidocker   latest             1148b3a685cc       38 minutes ago     429MB
mysql                latest             5b4c624c7fe1       3 days ago         519MB

C:\Workspace\mascotas-api>docker run -d -p 13306:3306 --name mysqldocker -e MYSQL_ROOT_PASSWORD=Kevin777 mysql --character-set-server=utf8mb4 --collation-server=utf8mb4_unicode_ci
92d7a9e0e6a4bcf22bb769bad60fe35af33592da1daa5db6223d21504a0c38e1

C:\Workspace\mascotas-api>docker ps -a
CONTAINER ID        IMAGE               COMMAND             CREATED             STATUS              PORTS                               NAMES
92d7a9e0e6a4        mysql              "docker-entrypoint.s..." 24 seconds ago     Up 20 seconds      33060/tcp, 0.0.0.0:13306->3306/tcp  mysqldocker
f6ecb957c5e5        mascotasapidocker  "java -Djava.securit..." 42 minutes ago     Exited (1) 42 minutes ago                                     quizzical_bhabha

C:\Workspace\mascotas-api>docker exec -it mysqldocker mysql -uroot -p
Enter password:
ERROR 2002 (HY000): Can't connect to local MySQL server through socket '/var/run/mysql/mysql.sock' (2)

C:\Workspace\mascotas-api>docker exec -it mysqldocker mysql -uroot -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 8
Server version: 8.0.28 MySQL Community Server - GPL

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```

```
C:\WINDOWS\system32\cmd.exe

mysql                latest             5b4c624c7fe1       3 days ago         519MB

C:\Workspace\mascotas-api>docker run -d -p 13306:3306 --name mysqldocker -e MYSQL_ROOT_PASSWORD=Kevin777 mysql --character-set-server=utf8mb4 --collation-server=utf8mb4_unicode_ci
92d7a9e0e6a4bcf22bb769bad60fe35af33592da1daa5db6223d21504a0c38e1

C:\Workspace\mascotas-api>docker ps -a
CONTAINER ID        IMAGE               COMMAND             CREATED             STATUS              PORTS                               NAMES
92d7a9e0e6a4        mysql              "docker-entrypoint.s..." 24 seconds ago     Up 20 seconds      33060/tcp, 0.0.0.0:13306->3306/tcp  mysqldocker
f6ecb957c5e5        mascotasapidocker  "java -Djava.securit..." 42 minutes ago     Exited (1) 42 minutes ago                                     quizzical_bhabha

C:\Workspace\mascotas-api>docker exec -it mysqldocker mysql -uroot -p
Enter password:
ERROR 2002 (HY000): Can't connect to local MySQL server through socket '/var/run/mysql/mysql.sock' (2)

C:\Workspace\mascotas-api>docker exec -it mysqldocker mysql -uroot -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 8
Server version: 8.0.28 MySQL Community Server - GPL

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Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

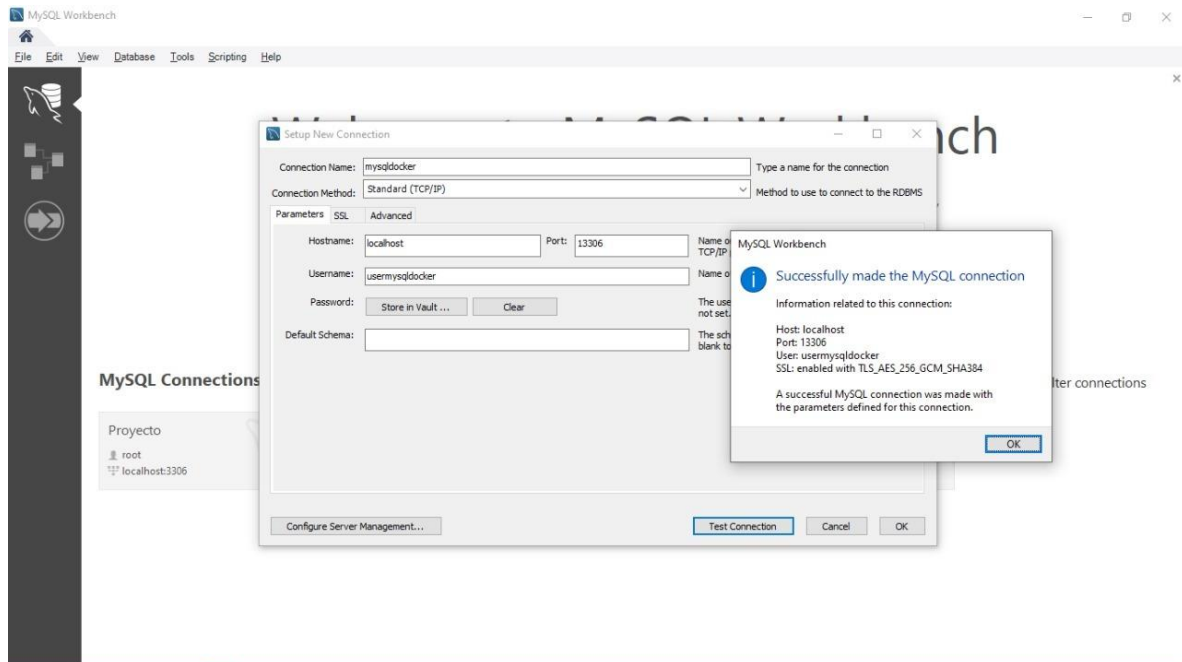
mysql> create user 'usermysqldocker' identified by 'Kevin777'
-> ;
Query OK, 0 rows affected (0.19 sec)

mysql> grant all privileges on *.* to 'usermysqldocker'@'%';
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'privileges on *.* to 'usermysqldocker'@'%' at line 1
mysql> grant all privileges on *.* to 'usermysqldocker'@'%';
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'privileges on *.* to 'usermysqldocker'@'%' at line 1
mysql> grant all privileges on *.* to 'usermysqldocker'@'%';
Query OK, 0 rows affected (0.43 sec)

mysql> exit
Bye

C:\Workspace\mascotas-api>
```

Probamos la conexión al contenedor mediante la herramienta de Workbench



Ya que se comprueba que se puede acceder y hay conexión, procedemos a cambiarla de la red **bridge** que utiliza Docker, para introducirla en una red propia que llamamos **contenedores-apimascotas**.

```
C:\WINDOWS\system32\cmd.exe
C:\Workspace\mascotas-api>docker network inspect bridge
[
  {
    "Name": "bridge",
    "Id": "2583c326ac3413addc7975a46cf91369e7c47579c0bd7f2f985590d60de5664",
    "Created": "2022-01-23T20:26:10.7959377Z",
    "Scope": "local",
    "Driver": "bridge",
    "EnableIPv6": false,
    "IPAM": {
      "Driver": "default",
      "Options": null,
      "Config": [
        {
          "Subnet": "172.17.0.0/16",
          "Gateway": "172.17.0.1"
        }
      ]
    },
    "Internal": false,
    "Attachable": false,
    "Ingress": false,
    "ConfigFrom": {
      "Network": ""
    },
    "ConfigOnly": false,
    "Containers": {
      "92d7a9e0e6a4bcf22bb769bad60fe35af33592da1daa5db6223d21594a0c38e1": {
        "Name": "mysqldocker",
        "EndpointID": "d239778d24958c6c1d4ab3331a1136a67d2bda12c5e521cb17ed9bb8484d4887",
        "MacAddress": "02:42:ac:11:00:02",
        "IPv4Address": "172.17.0.2/16",
        "IPv6Address": ""
      }
    },
    "Options": {
      "com.docker.network.bridge.default_bridge": "true",
      "com.docker.network.bridge.enable_icc": "true",
      "com.docker.network.bridge.enable_ip_masquerade": "true",
      "com.docker.network.bridge.host_binding_ipv4": "0.0.0.0",
      "com.docker.network.bridge.name": "docker0",
      "com.docker.network.driver.mtu": "1500"
    },
    "Labels": {}
  }
]
```



```

C:\WINDOWS\system32\cmd.exe
Microsoft Windows [Versi3n 10.0.19044.1469]
(c) Microsoft Corporation. Todos los derechos reservados.

C:\Users\Kev Antua>cd ..
C:\Users>cd ..
C:\>cd Workspace
C:\Workspace>cd mascotas-api

C:\Workspace\mascotas-api>mvn install
[INFO] Scanning for projects...
[INFO]
[INFO] -----< com.mascotas:mascotas-api >-----
[INFO] Building mascotas-api 0.0.1
[INFO] -----[ jar ]-----
[INFO] Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-install-plugin/2.5.2/maven-install-plugin-2.5.2.pom
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-install-plugin/2.5.2/maven-install-plugin-2.5.2.pom (6.4 kB at 2.4 kB/s)
[INFO] Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-plugins/25/maven-plugins-25.pom
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-plugins/25/maven-plugins-25.pom (9.6 kB at 75 kB/s)
[INFO] Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/maven-parent/24/maven-parent-24.pom
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/maven-parent/24/maven-parent-24.pom (37 kB at 231 kB/s)
[INFO] Downloading from central: https://repo.maven.apache.org/maven2/org/apache/apache/14/apache-14.pom
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/apache/14/apache-14.pom (15 kB at 111 kB/s)
[INFO]
[INFO] --- maven-resources-plugin:3.2.0:resources (default-resources) @ mascotas-api ---
[INFO] Using 'UTF-8' encoding to copy filtered resources.
[INFO] Using 'UTF-8' encoding to copy filtered properties files.
[INFO] Copying 1 resource
[INFO] Copying 0 resource
[INFO]
[INFO] --- maven-compiler-plugin:3.0.1:compile (default-compile) @ mascotas-api ---
[INFO] Changes detected - recompiling the module!
[INFO] Compiling 5 source files to C:\Workspace\mascotas-api\target\classes
[INFO]
[INFO] --- maven-resources-plugin:3.2.0:testResources (default-testResources) @ mascotas-api ---
[INFO] Using 'UTF-8' encoding to copy filtered resources.
[INFO] Using 'UTF-8' encoding to copy filtered properties files.
[INFO] skip non existing resourceDirectory C:\Workspace\mascotas-api\src\test\resources
[INFO]
[INFO] --- maven-compiler-plugin:3.0.1:testCompile (default-testCompile) @ mascotas-api ---
[INFO] Changes detected - recompiling the module!
[INFO] Compiling 1 source file to C:\Workspace\mascotas-api\target\test-classes
[INFO]
[INFO] --- maven-surefire-plugin:2.22.2:test (default-test) @ mascotas-api ---

```

```

C:\WINDOWS\system32\cmd.exe
h mode [null].

Spring
:: Spring Boot :: (v2.6.3)

2022-01-23 16:40:34.143 INFO 2164 --- [main] c.v.m.MascotasApiApplicationTests : Starting MascotasApiApplicationTests using Java 11.0.13 on KEVIN-ANT
UA with PID 2164 (started by Kev Antua in C:\Workspace\mascotas-api)
2022-01-23 16:40:34.145 INFO 2164 --- [main] c.v.m.MascotasApiApplicationTests : No active profile set, falling back to default profiles: default
2022-01-23 16:40:36.377 INFO 2164 --- [main] .s.d.r.c.RepositoryConfigurationDelegate : Bootstrapping Spring Data JPA repositories in DEFAULT mode.
2022-01-23 16:40:36.542 INFO 2164 --- [main] .s.d.r.c.RepositoryConfigurationDelegate : Finished Spring Data repository scanning in 138 ms. Found 1 JPA repo
sitory interfaces.
2022-01-23 16:40:38.760 INFO 2164 --- [main] o.hibernate.jpa.internal.util.LogHelper : HH#000204: Processing PersistenceUnitInfo [name: default]
2022-01-23 16:40:39.781 INFO 2164 --- [main] org.hibernate.Version : HH#000412: Hibernate ORM core version 5.6.4.Final
2022-01-23 16:40:42.531 INFO 2164 --- [main] o.hibernate.annotations.common.Version : HCANN#000001: Hibernate Commons Annotations [5.1.2.Final]
2022-01-23 16:40:43.595 INFO 2164 --- [main] com.zaxxer.hikari.HikariDataSource : HikariPool-1 - Starting...
2022-01-23 16:40:44.761 INFO 2164 --- [main] com.zaxxer.hikari.HikariDataSource : HikariPool-1 - Start completed.
2022-01-23 16:40:45.034 INFO 2164 --- [main] org.hibernate.dialect.Dialect : HH#000400: Using dialect: org.hibernate.dialect.MySQL5Dialect
2022-01-23 16:40:50.135 INFO 2164 --- [main] o.h.e.t.j.p.i.JtaPlatformInitiator : HH#000490: Using JtaPlatform implementation: [org.hibernate.engine.t
ransaction.jta.platform.internal.NoJtaPlatform]
2022-01-23 16:40:50.151 INFO 2164 --- [main] j.LocalContainerEntityManagerFactoryBean : Initialized JPA EntityManagerFactory for persistence unit 'default'
2022-01-23 16:40:51.934 WARN 2164 --- [main] jpaBaseConfiguration$JpaWebConfiguration : spring.jpa.open-in-view is enabled by default. Therefore, database q
ueries may be performed during view rendering. Explicitly configure spring.jpa.open-in-view to disable this warning
2022-01-23 16:40:52.827 INFO 2164 --- [main] pertySourcedRequestMappingHandlerMapping : Mapped URL path [/v2/api-docs] onto method [springfox.documentation
.swagger2.web.Swagger2Controller#getDocumentation(String, HttpServletRequest)]
2022-01-23 16:40:54.555 INFO 2164 --- [main] d.s.w.p.DocumentationPluginsBootstrapper : Context refreshed
2022-01-23 16:40:54.702 INFO 2164 --- [main] d.s.w.p.DocumentationPluginsBootstrapper : Found 1 custom documentation plugin(s)
2022-01-23 16:40:54.801 INFO 2164 --- [main] s.d.s.w.s.ApiListingReferenceScanner : Scanning for api listing references
2022-01-23 16:40:55.194 INFO 2164 --- [main] c.v.m.MascotasApiApplicationTests : Started MascotasApiApplicationTests in 21.925 seconds (JVM running f
or 28.197)
[INFO] Tests run: 1, Failures: 0, Errors: 0, Skipped: 0 - Time elapsed: 27.573 s - in com.veterinaria.mascotas.MascotasApiApplicationTests
2022-01-23 16:40:56.113 INFO 2164 --- [ionShutdownHook] j.LocalContainerEntityManagerFactoryBean : Closing JPA EntityManagerFactory for persistence unit 'default'
2022-01-23 16:40:56.124 INFO 2164 --- [ionShutdownHook] com.zaxxer.hikari.HikariDataSource : HikariPool-1 - Shutdown initiated...
2022-01-23 16:40:56.158 INFO 2164 --- [ionShutdownHook] com.zaxxer.hikari.HikariDataSource : HikariPool-1 - Shutdown completed.
[INFO]
[INFO] Results:
[INFO]
[INFO] Tests run: 1, Failures: 0, Errors: 0, Skipped: 0
[INFO]
[INFO]
[INFO] --- maven-jar-plugin:3.2.2:jar (default-jar) @ mascotas-api ---
[INFO] Building jar: C:\Workspace\mascotas-api\target\mascotas-api-0.0.1.jar

```

```
C:\WINDOWS\system32\cmd.exe
Downloading from central: https://repo.maven.apache.org/maven2/org/ow2/asm/asm-util/8.0/asm-util-8.0.jar
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/shared/maven-dependency-tree/3.0.1/maven-dependency-tree-3.0.1.jar (37 kB at 19 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/ow2/asm/asm-util/8.0/asm-util-8.0.jar (85 kB at 43 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/shared/maven-dependency-tree/3.0.1/maven-dependency-tree-3.0.1.jar (37 kB at 19 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/com/google/guava/listenablefuture/9999.0-empty-to-avoid-conflict-with-guava/listenablefuture-9999.0-empty-to-avoid-conflict-with-guava.jar
Downloading from central: https://repo.maven.apache.org/maven2/com/google/guava/failureaccess/1.0.1/failureaccess-1.0.1.jar
Downloading from central: https://repo.maven.apache.org/maven2/org/jdom/jdom2/2.0.6/jdom2-2.0.6.jar (305 kB at 156 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/com/google/errorprone/error_prone_annotations/2.3.4/error_prone_annotations-2.3.4.jar
Downloading from central: https://repo.maven.apache.org/maven2/com/google/guava/failureaccess/1.0.1/failureaccess-1.0.1.jar (4.6 kB at 2.2 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/com/google/j2objc/j2objc-annotations/1.3/j2objc-annotations-1.3.jar
Downloading from central: https://repo.maven.apache.org/maven2/org/checkerframework/checker-qual/2.5.5/checker-qual-2.5.5.jar (5.9 kB at 2.8 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/commons/commons-lang3/3.7/commons-lang3-3.7.jar
Downloading from central: https://repo.maven.apache.org/maven2/com/google/errorprone/error_prone_annotations/2.3.4/error_prone_annotations-2.3.4.jar (14 kB at 6.6 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/com/google/guava/listenablefuture/9999.0-empty-to-avoid-conflict-with-guava/listenablefuture-9999.0-empty-to-avoid-conflict-with-guava.jar (2.2 kB at 1.0 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/com/google/guava/guava/28.2-android/guava-28.2-android.jar (2.6 MB at 1.2 MB/s)
Downloading from central: https://repo.maven.apache.org/maven2/com/google/j2objc/j2objc-annotations/1.3/j2objc-annotations-1.3.jar (8.8 kB at 4.0 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/commons/commons-lang3/3.7/commons-lang3-3.7.jar (500 kB at 198 kB/s)
[INFO] Replacing main artifact with repackaged archive
[INFO] --- maven-install-plugin:2.5.2:install (default-install) @ mascotas-api ---
Downloading from central: https://repo.maven.apache.org/maven2/commons-codec/commons-codec/1.6/commons-codec-1.6.pom
Downloading from central: https://repo.maven.apache.org/maven2/commons-codec/commons-codec/1.6/commons-codec-1.6.pom (11 kB at 75 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/commons-parent/22/commons-parent-22.pom (42 kB at 333 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/shared/maven-shared-utils/0.4/maven-shared-utils-0.4.pom
Downloading from central: https://repo.maven.apache.org/maven2/classworlds/classworlds/1.1-alpha-2/classworlds-1.1-alpha-2.jar
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/shared/maven-shared-utils/0.4/maven-shared-utils-0.4.jar
Downloading from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-utils/3.0.15/plexus-utils-3.0.15.jar
Downloading from central: https://repo.maven.apache.org/maven2/commons-codec/commons-codec/1.6/commons-codec-1.6.jar
Downloading from central: https://repo.maven.apache.org/maven2/classworlds/classworlds/1.1-alpha-2/classworlds-1.1-alpha-2.jar (38 kB at 223 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-utils/3.0.15/plexus-utils-3.0.15.jar (239 kB at 1.4 MB/s)
Downloading from central: https://repo.maven.apache.org/maven2/commons-codec/commons-codec/1.6/commons-codec-1.6.jar (233 kB at 1.3 MB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/shared/maven-shared-utils/0.4/maven-shared-utils-0.4.jar (155 kB at 311 kB/s)
[INFO] Installing C:\Workspace\mascotas-api\target\mascotas-api-0.0.1.jar to C:\Users\Kev Antua\m2\repository\com\mascotas\mascotas-api\0.0.1\mascotas-api-0.0.1.jar
[INFO] Installing C:\Workspace\mascotas-api\pom.xml to C:\Users\Kev Antua\m2\repository\com\mascotas\mascotas-api\0.0.1\mascotas-api-0.0.1.pom
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 01:18 min
[INFO] Finished at: 2022-01-23T16:41:13-06:00
[INFO] -----
```

Una vez que se compila, el API, puede ser utilizado, aún sin estar dentro del contenedor, sin embargo, también se trata de meter en uno, por lo que ahora, se deberá cambiar la ruta de conexión a la base de datos, en lugar de poner la dirección y el puerto, se pondrá el nombre del contenedor creado que es **mysqldocker**.

De igual manera se crea el archivo **Dockerfile**, quedando ambas configuraciones de la siguiente manera.

```
res/application.yml - Spring Tool Suite 4
application.yml
1 server:
2   port: 8090
3
4 spring:
5   jpa:
6     hibernate:
7       ddl-auto: update
8     properties:
9       hibernate:
10         dialect: org.hibernate.dialect.MySQLDialect
11
12 datasource:
13   driver-class-name: com.mysql.cj.jdbc.Driver
14   url: jdbc:mysql://mysqldocker/mascotas?zeroDateTimeBehavior=convertToNull&serverTimezone=UTC
15   username: usermysqldocker
16   password: Kevln777.....
17
18 mvc:
19   pathmatch:
20     matching-strategy: ant_path_matcher
```

En el Docker file describimos la imagen que queremos para nuestro contenedor, así como de que archivo será el que ejecute, su ubicación y como se identificará.

```
Workspace - mascotas-api/Dockerfile - Spring Tool Suite 4
Dockerfile
1 FROM openjdk:11.0-jdk-slim-stretch
2 VOLUME /temp
3 EXPOSE 8090
4 ARG JAR_FILE=target/mascotas-api-0.0.1.jar
5 ADD ${JAR_FILE} apimascotas.jar
6 ENTRYPOINT ["java", "-Djava.security.egd=file:/dev/./urandom", "-jar", "apimascotas.jar"]
```


Sin embargo, aquí nos encontramos con un problema desconocido, que podría tener su origen en las versiones de algunas dependencias.

Ya que se hicieron pruebas para crear los contenedores de la API, arrojando que al poner la ruta **/localhost:13036/...** el proyecto se puede compilar y crear el archivo JAR sin ningún problema, incluso se pudo crear su contenedor.

```
C:\WINDOWS\system32\cmd.exe
C:\Workspace\mascotas-api>
[INFO] Tests run: 1, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 20.298 s - in com.veterinaria.mascotas.MascotasApiApplicationTests
[INFO] Results:
[INFO] Tests run: 1, Failures: 0, Errors: 0, Skipped: 0
[INFO]
[INFO] --- maven-jar-plugin:3.2.2:jar (default-jar) @ mascotas-api ---
[INFO] Building jar: C:\Workspace\mascotas-api\target\mascotas-api-0.0.1.jar
[INFO]
[INFO] --- spring-boot-maven-plugin:2.6.3:repackage (repackage) @ mascotas-api ---
[INFO] Replacing main artifact with repackaged archive
[INFO]
[INFO] BUILD SUCCESS
[INFO]
[INFO] Total time: 36.967 s
[INFO] Finished at: 2022-01-24T02:30:47-06:00
[INFO]
C:\Workspace\mascotas-api>
```

```
C:\WINDOWS\system32\cmd.exe
C:\Workspace\mascotas-api>docker build -t mascotasapidocker .
[+] Building 20.8s (7/7) FINISHED
=> [internal] load build definition from Dockerfile
=> => transferring dockerfile: 32B
=> [internal] load .dockerignore
=> => transferring context: 2B
=> [internal] load metadata for docker.io/library/openjdk:11.0-jdk-slim-stretch
=> [internal] load build context
=> => transferring context: 44.75MB
=> CACHED [1/2] FROM docker.io/library/openjdk:11.0-jdk-slim-stretch@sha256:e05f406f20f920d50e7cc77ef332210a800b1a7bcdd8707173e53d359d05b99
=> [2/2] ADD target/mascotas-api-0.0.1.jar apimascotas.jar
=> exporting to image
=> => exporting layers
=> => writing image sha256:1bdc0b8bd899ed3b2164d11ea87ee21e16a49c5583b1a7afdd6f6513a6ba33
=> => naming to docker.io/library/mascotasapidocker
0.15s

Use 'docker scan' to run Snyk tests against images to find vulnerabilities and learn how to fix them

C:\Workspace\mascotas-api>docker image

Usage: docker image COMMAND

Manage images

Commands:
  build      Build an image from a Dockerfile
  history    Show the history of an image
  import     Import the contents from a tarball to create a filesystem image
  inspect    Display detailed information on one or more images
  load       Load an image from a tar archive or STDIN
  ls         List images
  prune      Remove unused images
  pull       Pull an image or a repository from a registry
  push       Push an image or a repository to a registry
  rm         Remove one or more images
  save       Save one or more images to a tar archive (streamed to STDOUT by default)
  tag        Create a tag TARGET_IMAGE that refers to SOURCE_IMAGE

Run 'docker image COMMAND --help' for more information on a command.

C:\Workspace\mascotas-api>docker images
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
mascotasapidocker   latest             1bdc0b8bd899       18 seconds ago     429MB
<none>              <none>             1148b3a685cc       9 hours ago        429MB
mysql               latest             5b4c624c7fe1       4 days ago         519MB
```

Sin embargo, aunque se puede crear su contenedor, no le es posible conectarse a la base de datos, ya que no esta apuntando de forma correcta, pues lo que necesita

en lugar de `/localhost`, es el nombre del contenedore de MySQL, que para este caso es `mysqldocker`.

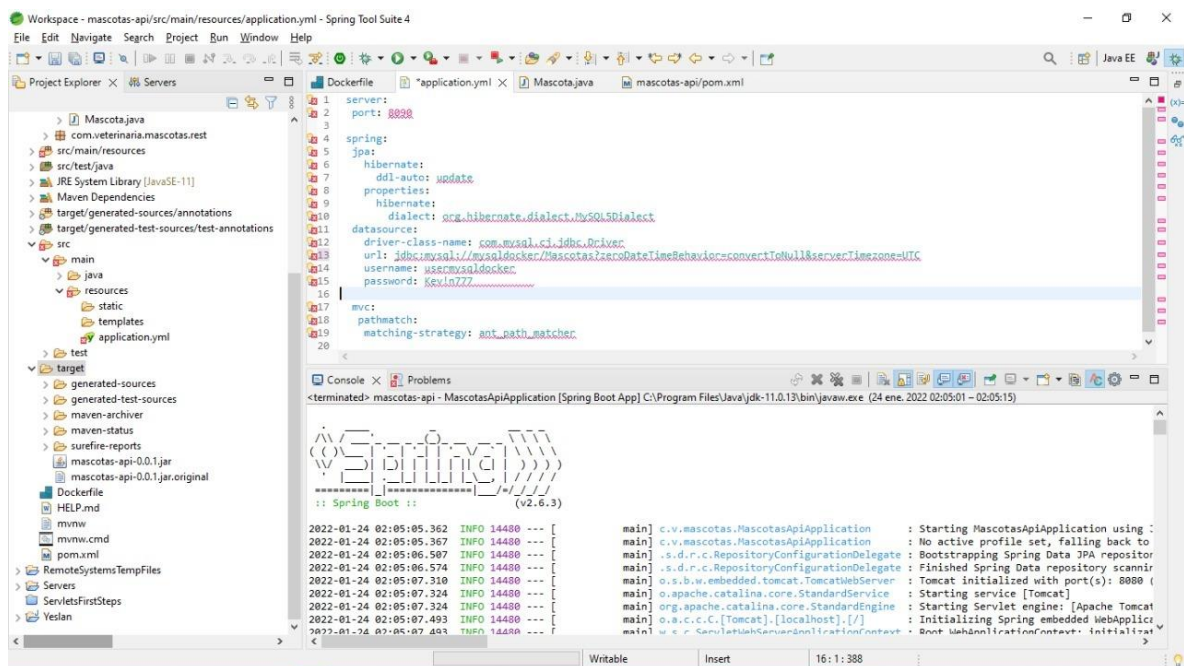
```
C:\WINDOWS\system32\cmd.exe
2022-01-24 08:28:33.182 INFO 1 --- [main] .s.d.r.c.RepositoryConfigurationDelegate : Bootstrapping Spring Data JPA repositories in DEFAULT mode.
2022-01-24 08:28:33.327 INFO 1 --- [main] .s.d.r.c.RepositoryConfigurationDelegate : Finished Spring Data repository scanning in 117 ms. Found 1 JPA repository interfaces.
2022-01-24 08:28:34.662 INFO 1 --- [main] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat initialized with port(s): 8090 (http)
2022-01-24 08:28:34.686 INFO 1 --- [main] o.apache.catalina.core.StandardService : Starting service [Tomcat]
2022-01-24 08:28:34.687 INFO 1 --- [main] org.apache.catalina.core.StandardEngine : Starting Servlet engine: [Apache Tomcat/9.0.56]
2022-01-24 08:28:34.809 INFO 1 --- [main] o.a.c.c.c.[Tomcat].[localhost].[/] : Initializing Spring embedded WebApplicationContext
2022-01-24 08:28:34.809 INFO 1 --- [main] w.s.c.ServletWebServerApplicationContext : Root WebApplicationContext: initialization completed in 3265 ms
2022-01-24 08:28:35.211 INFO 1 --- [main] o.hibernate.jpa.internal.util.LogHelper : HHH000204: Processing PersistenceUnitInfo [name: default]
2022-01-24 08:28:35.347 INFO 1 --- [main] org.hibernate.Version : HHH0000412: Hibernate ORM core version 5.6.4.Final
2022-01-24 08:28:35.709 INFO 1 --- [main] o.hibernate.annotations.common.Version : HCANN000001: Hibernate Commons Annotations {5.1.2.Final}
2022-01-24 08:28:35.932 INFO 1 --- [main] com.zaxxer.hikari.HikariDataSource : HikariPool-1 - Starting...
2022-01-24 08:28:37.122 ERROR 1 --- [main] com.zaxxer.hikari.pool.HikariPool : HikariPool-1 - Exception during pool initialization.

com.mysql.cj.jdbc.exceptions.CommunicationsException: Communications link failure

The last packet sent successfully to the server was 0 milliseconds ago. The driver has not received any packets from the server.
at com.mysql.cj.jdbc.exceptions.SQLExceptionsMapping.translateException(SQLException.java:174) ~[mysql-connector-java-8.0.28.jar/:8.0.28]
at com.mysql.cj.jdbc.ConnectionImpl.createNewIO(ConnectionImpl.java:829) ~[mysql-connector-java-8.0.28.jar/:8.0.28]
at com.mysql.cj.jdbc.ConnectionImpl.initializeImplFromBasicURL(ConnectionImpl.java:449) ~[mysql-connector-java-8.0.28.jar/:8.0.28]
at com.mysql.cj.jdbc.ConnectionImpl.getInstance(ConnectionImpl.java:242) ~[mysql-connector-java-8.0.28.jar/:8.0.28]
at com.mysql.cj.jdbc.NonRegisteringDriver.connect(NonRegisteringDriver.java:198) ~[mysql-connector-java-8.0.28.jar/:8.0.28]
at com.zaxxer.hikari.util.DriverDataSource.getConnection(DriverDataSource.java:138) ~[HikariCP-4.0.3.jar!/:na]
at com.zaxxer.hikari.pool.PoolBase.newConnection(PoolBase.java:364) ~[HikariCP-4.0.3.jar!/:na]
at com.zaxxer.hikari.pool.PoolBase.newPoolEntry(PoolBase.java:266) ~[HikariCP-4.0.3.jar!/:na]
at com.zaxxer.hikari.pool.HikariPool.createPoolEntry(HikariPool.java:476) ~[HikariCP-4.0.3.jar!/:na]
at com.zaxxer.hikari.pool.HikariPool.checkFailFast(HikariPool.java:561) ~[HikariCP-4.0.3.jar!/:na]
at com.zaxxer.hikari.pool.HikariPool.<init>(HikariPool.java:115) ~[HikariCP-4.0.3.jar!/:na]
at com.zaxxer.hikari.HikariDataSource.getConnection(HikariDataSource.java:112) ~[HikariCP-4.0.3.jar!/:na]
at org.hibernate.engine.jdbc.connections.internal.DataSourceConnectionProviderImpl.getConnection(DataSourceConnectionProviderImpl.java:122) ~[hibernate-core-5.6.4.Final.jar!/:5.6.4.Final]
at org.hibernate.engine.jdbc.env.internal.JdbcEnvironmentInitiator$ConnectionProviderJdbcConnectionAccess.obtainConnection(JdbcEnvironmentInitiator.java:181) ~[hibernate-core-5.6.4.Final.jar!/:5.6.4.Final]
at org.hibernate.engine.jdbc.env.internal.JdbcEnvironmentInitiator.initiateService(JdbcEnvironmentInitiator.java:68) ~[hibernate-core-5.6.4.Final.jar!/:5.6.4.Final]
at org.hibernate.engine.jdbc.env.internal.JdbcEnvironmentInitiator.initiateService(JdbcEnvironmentInitiator.java:35) ~[hibernate-core-5.6.4.Final.jar!/:5.6.4.Final]
at org.hibernate.boot.registry.internal.StandardServiceRegistryImpl.initiateService(StandardServiceRegistryImpl.java:101) ~[hibernate-core-5.6.4.Final.jar!/:5.6.4.Final]
at org.hibernate.service.internal.AbstractServiceRegistryImpl.createService(AbstractServiceRegistryImpl.java:263) ~[hibernate-core-5.6.4.Final.jar!/:5.6.4.Final]
at org.hibernate.service.internal.AbstractServiceRegistryImpl.initializeService(AbstractServiceRegistryImpl.java:237) ~[hibernate-core-5.6.4.Final.jar!/:5.6.4.Final]
at org.hibernate.service.internal.AbstractServiceRegistryImpl.getService(AbstractServiceRegistryImpl.java:214) ~[hibernate-core-5.6.4.Final.jar!/:5.6.4.Final]
at org.hibernate.id.factory.internal.DefaultIdentifierGeneratorFactory.injectServices(DefaultIdentifierGeneratorFactory.java:175) ~[hibernate-core-5.6.4.Final.jar!/:5.6.4.Final]
```

Y el problema final es que ahora que sabemos que se debe de cambiar la ruta, por el nombre del contenedor, así como el usuario y contraseña de la conexión.

Nos encontramos que, al hacer estos cambios, Maven ya no nos permite crear el archivo JAR, pues tiene conflicto con dependencias que desconozco hasta el momento.



```
C:\WINDOWS\system32\cmd.exe
[ERROR] contextLoads Time elapsed: 0.003 s <<< ERROR!
java.lang.IllegalStateException: Failed to load ApplicationContext
Caused by: org.springframework.beans.factory.BeanCreationException: Error creating bean with name 'entityManagerFactory' defined in class path resource [org/springframework/boot/autoconfigure/orm/jpa/HibernateJpaConfiguration.class]: Invocation of init method failed; nested exception is javax.persistence.PersistenceException: [PersistenceUnit: default] Unable to build Hibernate SessionFactory; nested exception is org.hibernate.exception.JDBCConnectionException: Unable to open JDBC Connection for DDL execution
Caused by: javax.persistence.PersistenceException: [PersistenceUnit: default] Unable to build Hibernate SessionFactory; nested exception is org.hibernate.exception.JDBCConnectionException: Unable to open JDBC Connection for DDL execution
Caused by: org.hibernate.exception.JDBCConnectionException: Unable to open JDBC Connection for DDL execution
Caused by: com.mysql.cj.jdbc.exceptions.CommunicationsException:
Communications link failure

The last packet sent successfully to the server was 0 milliseconds ago. The driver has not received any packets from the server.
Caused by: com.mysql.cj.exceptions.CJCommunicationsException:
Communications link failure

The last packet sent successfully to the server was 0 milliseconds ago. The driver has not received any packets from the server.
Caused by: java.net.ConnectException: Connection timed out: connect

[INFO]
[INFO] Results:
[INFO]
[ERROR] Errors:
[ERROR] MascotasApiApplicationTests.contextLoads » IllegalStateException Failed to load Applica...
[INFO]
[ERROR] Tests run: 1, Failures: 0, Errors: 1, Skipped: 0
[INFO]
[INFO] -----
[INFO] BUILD FAILURE
[INFO] -----
[INFO] Total time: 01:56 min
[INFO] Finished at: 2022-01-24T02:48:12-06:00
[INFO] -----
[ERROR] Failed to execute goal org.apache.maven.plugins:maven-surefire-plugin:2.22.2:test (default-test) on project mascotas-api: There are test failures.
[ERROR] Please refer to C:\Workspace\mascotas-api\target\surefire-reports for the individual test results.
[ERROR] Please refer to dump files (if any exist) [date].dump, [date]-jvmRun[N].dump and [date].dumpstream.
[ERROR] -> [Help 1]
[ERROR]
[ERROR] To see the full stack trace of the errors, re-run Maven with the -e switch.
[ERROR] Re-run Maven using the -X switch to enable full debug logging.
[ERROR]
[ERROR] For more information about the errors and possible solutions, please read the following articles:
[ERROR] [Help 1] http://wiki.apache.org/confluence/display/MAVEN/MojoFailureException

C:\Workspace\mascotas-api>
```

Finalmente, los puntos que se han desarrollado para esta práctica han sido:

- La creación de una API RESTful.
- Conexión a una base de datos en MySQL.
- La creación y despliegue de contenedor de MySQL, para la base de datos.
- La creación y despliegue de contenedor de la API.

Se busca la solución al problema de la negación de creación del archivo JAR que no permite la conexión entre los contenedores, pues de no crearse el archivo con las características necesarias en la URL de conexión, no se podrá acceder desde dentro de un contenedor hacia otro.