hw10: Clustering & Docker

请你根据上课内容，针对你在E-BookStore项目中的数据库设计，完成下列任务：
1.请你参照课程样例，构建你的E-BookStore的集群，它应该至少包含 1 个nginx实例(负载均衡) + 1 个Redis实例(存储session) + 2 个Tomcat实例。(4分）
2.所使用的框架不限，例如可以不使用nginx而选用其他负载均衡器，或不使用Redis而选用其他缓存工具。
3.参照上课演示的案例，将上述系统实现容器化部署，即负载均衡器、缓存、注册中心和服务集群都在容器中部署。 (1分）
– 请提交一份Word文档，详细叙述你的实现方式；并提交你的工程代码。
评分标准：
– 能够正确地部署和运行上述系统，在验收时需当面演示。
– 部署方案不满足条件或无法正确运行，则视情况扣分。

数据仓库：大量数据来源多个数据源，读入之后清洗加载，之后按照需求建立主题表， 是需求驱动的（OLAP）

OLTP： 事务驱动， 需要承接这么多的请求

shard server： 三备份， share nothing

Session + Redis

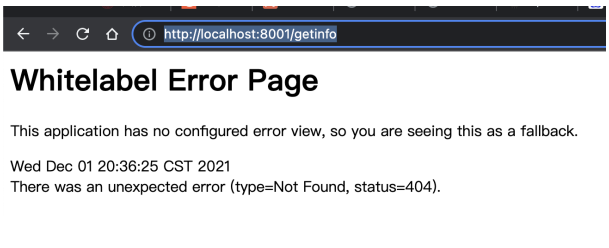
application.properties

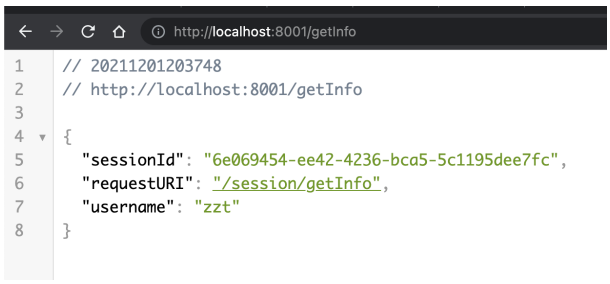
```
...
#redis
spring.session.store-type=redis
spring.session.redis.namespace=spring:session
spring.redis.host= localhost
spring.redis.port= 6379
spring.redis.password=
spring.redis.timeout= 6000
spring.redis.jedis.pool.max-active=8
spring.redis.jedis.pool.max-wait= -1ms
spring.redis.jedis.pool.max-idle= 8
spring.redis.jedis.pool.min-idle= 0
spring.redis.database = 0
```

增加依赖

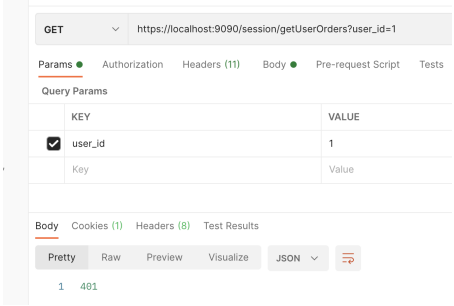
```
<dependency>
            <groupId>org.springframework.session</groupId>
            <artifactId>spring-session-data-redis</artifactId>
</dependency>
```

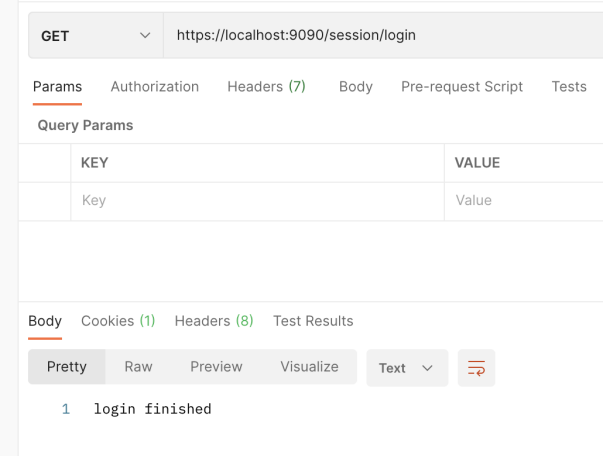
实例项目，登陆之后可以得到信息

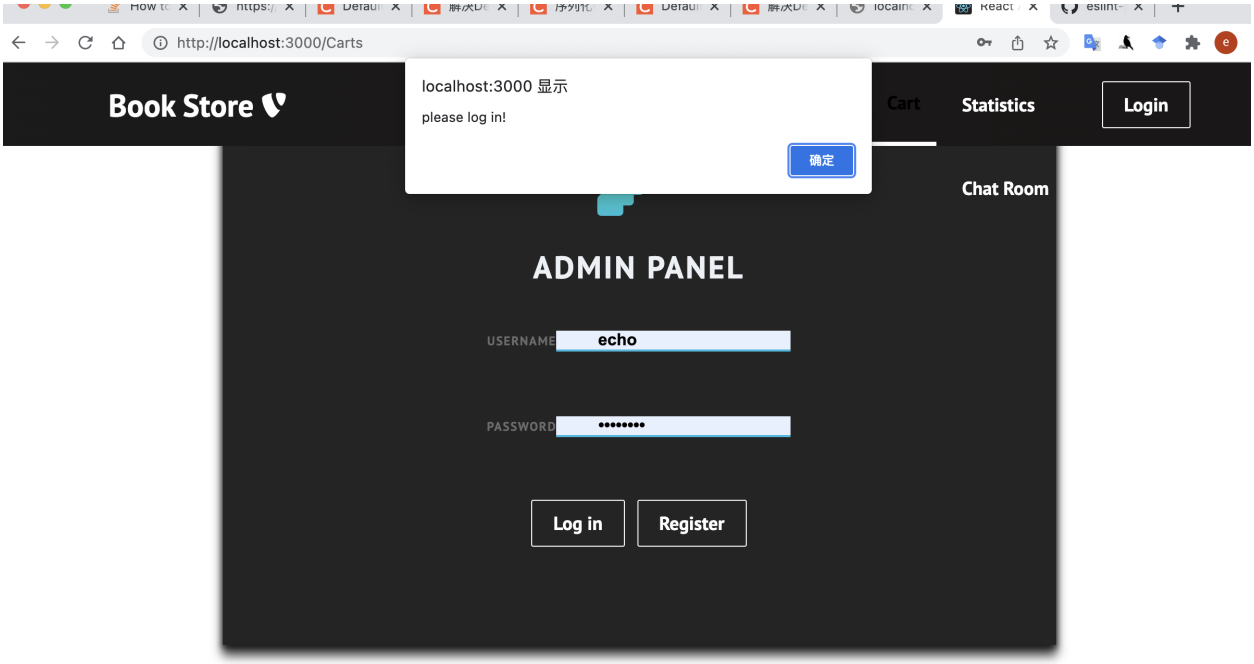




自己的项目中，一开始没有登陆时无法获得用户购物车信息，登陆之后







前端在未登陆状态下查看order，会被要求登陆。

```
35) "order303"
36) "spring:session:sessions:09f4183e-52fd-4222-99a8-3a33bf47cbe6"
37) "BookISBN3"
38) "book16"
39) "order902"
40) "order805"
41) "book453"
42) "book5"
43) "book452"
44) "userOrder1"
45) "book10"
46) "BookISBN978-7-18618-3"
47) "book7"
48) "spring:session:expirations:1638717660000"
49) "allOrders"
```

redis中记录的session

Nginx

安装 brew install nginx

启动 brew start/restart nginx

http://localhost:8080

Welcome to nginx!

If you see this page, the nginx web server is successfully installed and working. Further configuration is required.

For online documentation and support please refer to nginx.org.
Commercial support is available at nginx.com.

Thank you for using nginx.

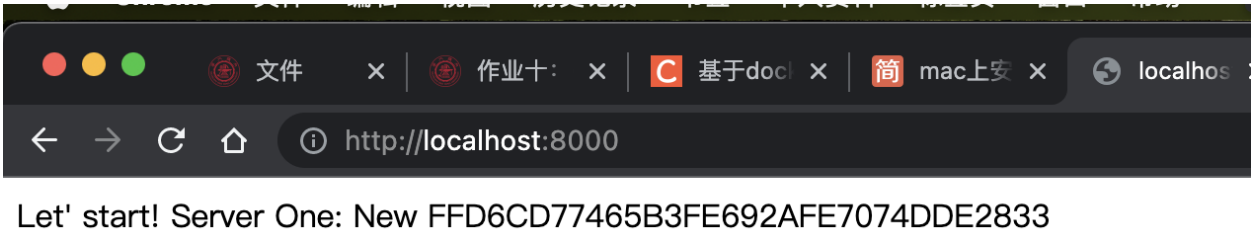
实例程序

nginx.config 位于/usr/local/etc/nginx　编辑nginx.config，增加

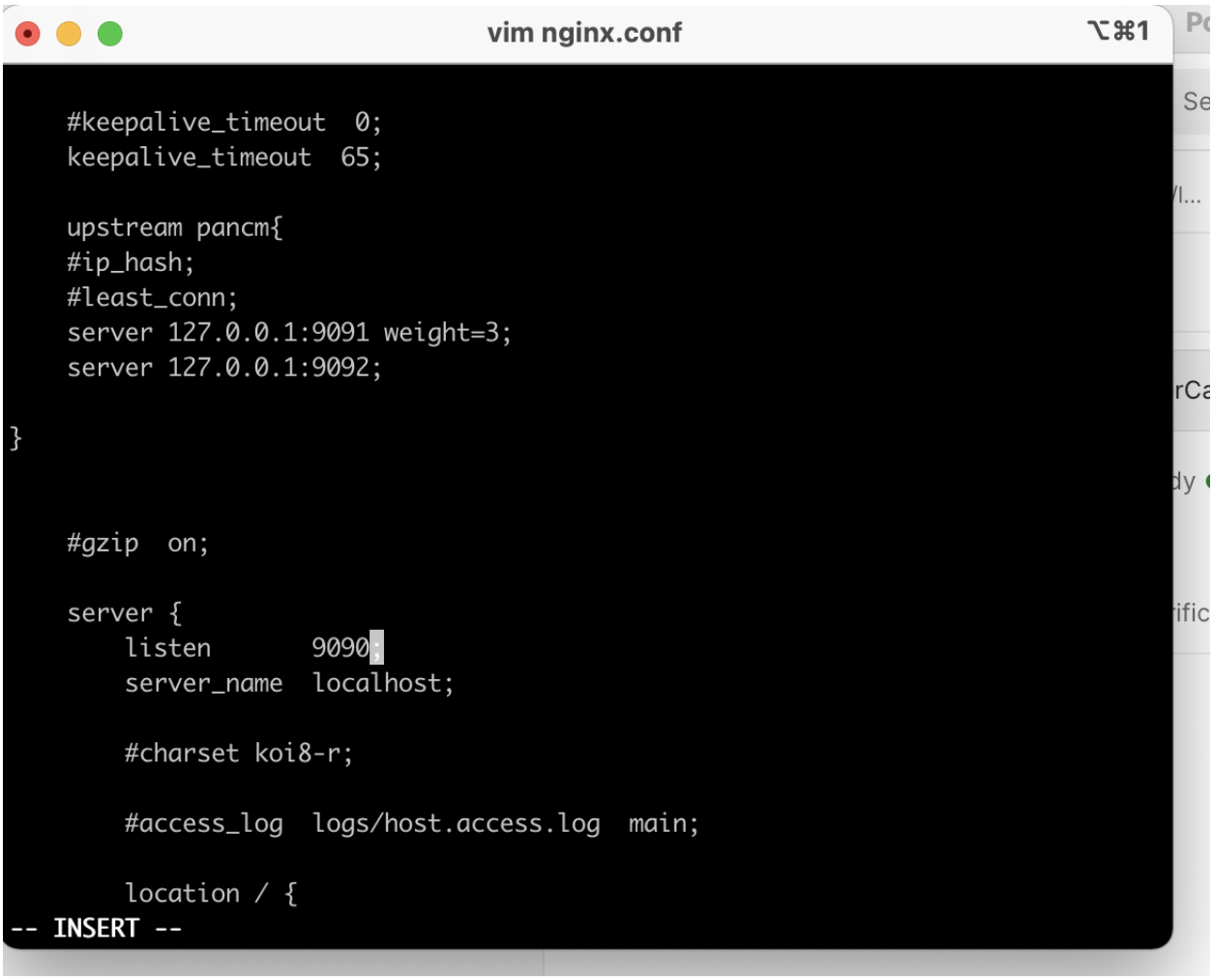
```
events {
    worker_connections  1024;
}


http {
    include       mime.types;
    default_type  application/octet-stream;

    #log_format  main  '$remote_addr - $remote_user [$time_local] "$request" '
    #                  '$status $body_bytes_sent "$http_referer" '
    #                  '"$http_user_agent" "$http_x_forwarded_for"';

    #access_log  logs/access.log  main;

    sendfile        on;
    #tcp_nopush     on;

    #keepalive_timeout  0;
    keepalive_timeout  65;

    upstream pancm{
    #ip_hash;
    #least_conn;
    server 127.0.0.1:8080 weight=3;
    server 127.0.0.1:8090;

}


    #gzip  on;

    server {
        listen       8000;
        server_name  localhost;

        #charset koi8-r;

        #access_log  logs/host.access.log  main;

        location / {
            root   html;
            proxy_pass http://pancm;
            index  index.html index.htm;

        }

        #error_page  404              /404.html;

        # redirect server error pages to the static page /50x.html
```

现在启动样例项目进行测试（8080端口与8090端口）

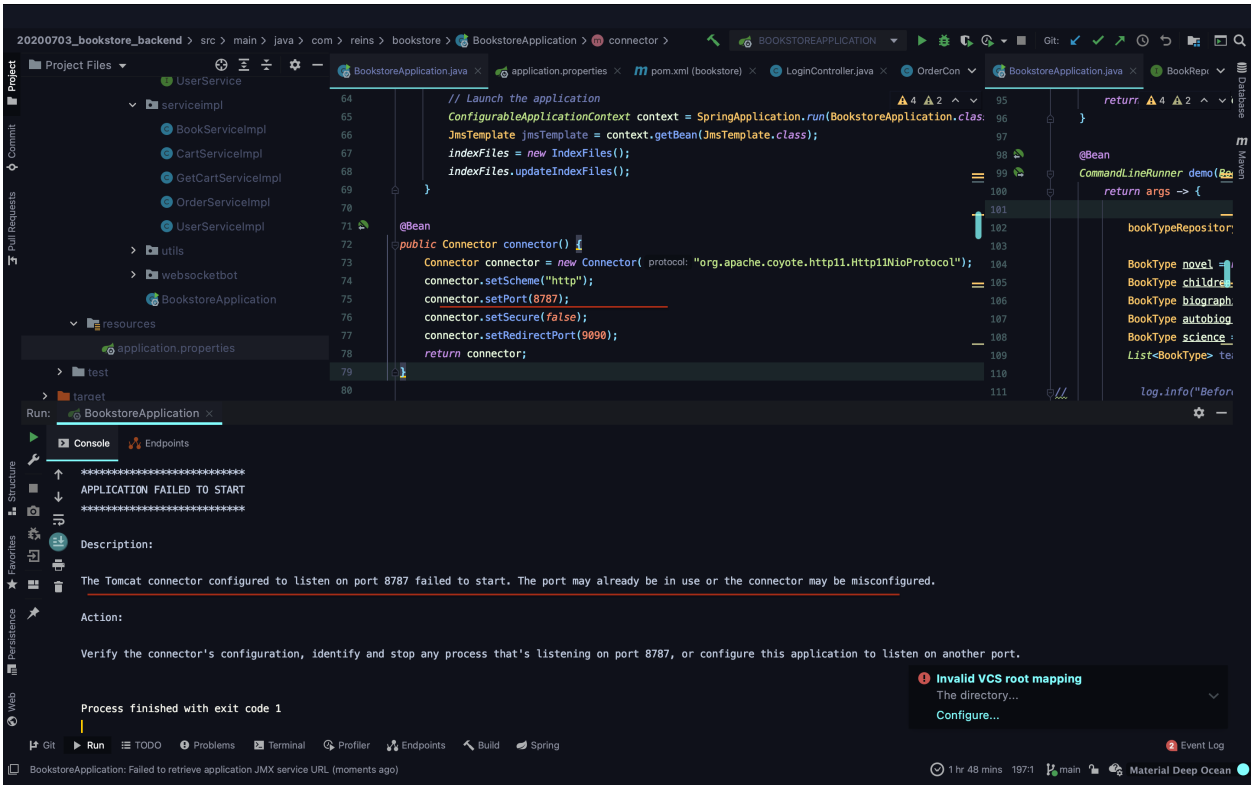
重启并reload configuration `sudo nginx -s reload`



接下来更换自己的项目，复制后端工程两份配置为9091和9092，同时修改nginx.config



集群的端口是9091和9092， nginx 的端口为9091

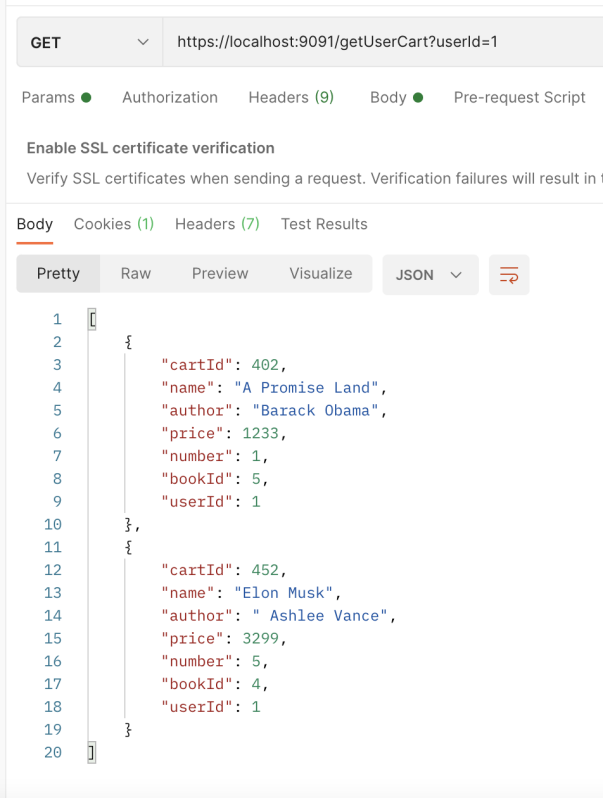


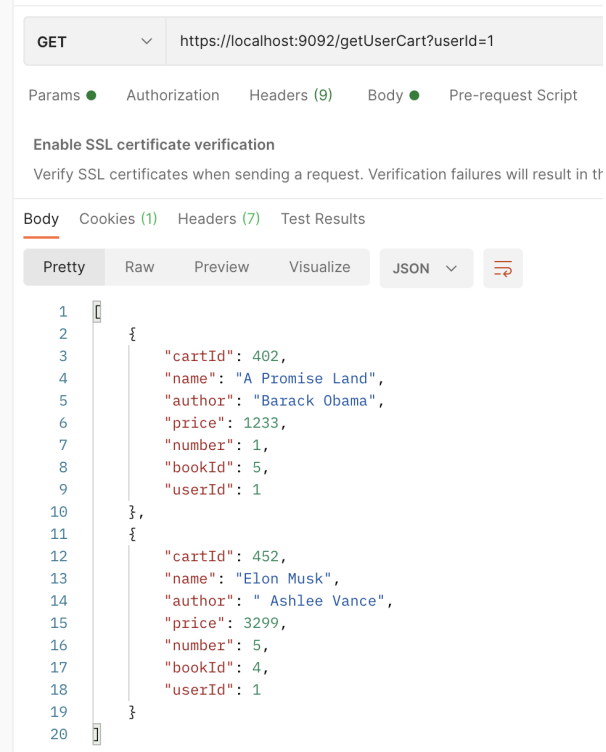
注意这里因为是listen的同一个端口会报错，所以把8787改为8788

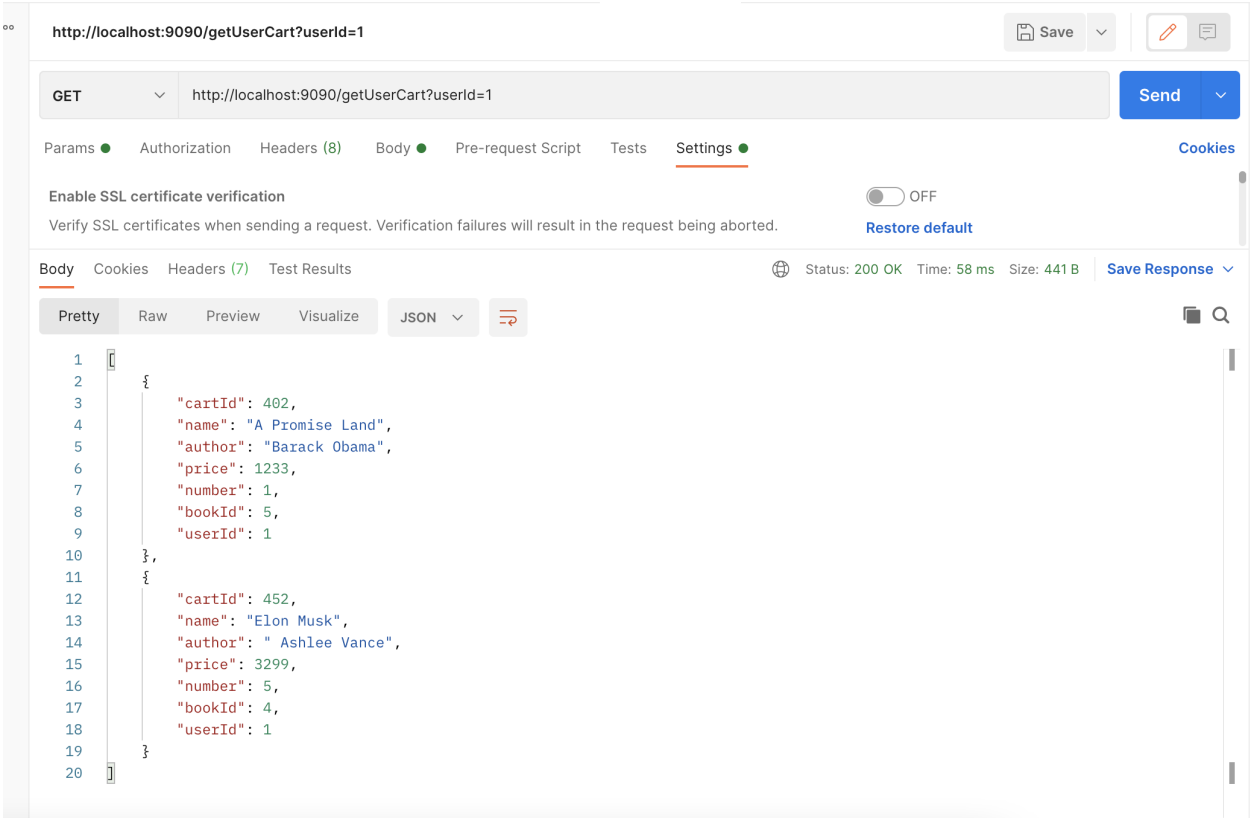
这样两个项目就跑完了。

发现会遇到TLS的问题, 因为9090端口和9080端口前面都是https，之前做了TLS认证，于是把 proxy_pass 从http://pancm 改为 https://pancm;

成功结果







注意这里需要把https改为http

前端之前的https端口调用都改为http 端口

```
    }
    axios({
        method: 'GET',
        url: 'http://localhost:9090/login',
        params: {
            username: values.username,
            password: values.password
        }
    }).then(response => {
        console.log(response)
```

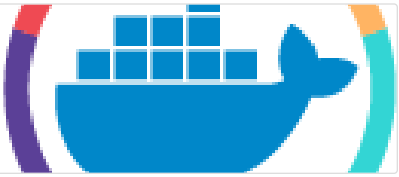
容器化部署

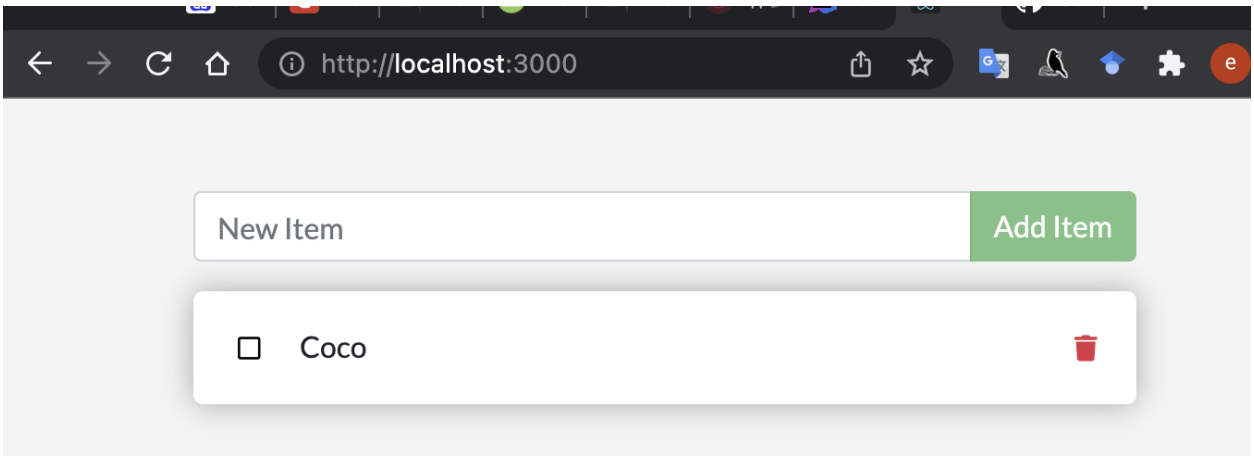
上课样例程序实现

Sample application

Estimated reading time: 5 minutes For the rest of this tutorial, we will be working with a simple todo list manager that is running in Node.js. If you're not familiar with Node.js, don't worry. No real JavaScript experience is needed.

https://docs.docker.com/get-started/02_our_app/

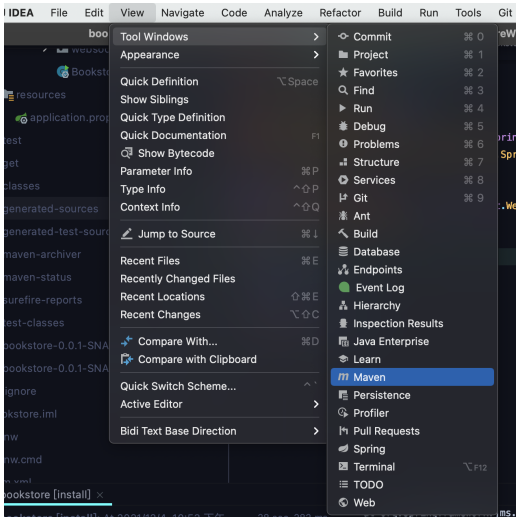




	Named Volumes	Bind Mounts
Host Location	Docker chooses	You control
Mount Example (using `-v`)	my-volume:/usr/local/data	/path/to/data:/usr/local/data
Populates new volume with container contents	Yes	No
Supports Volume Drivers	Yes	No

docker

1. intellj 打包spring boot



springboot打jar包报javax.websocket.server.ServerContainer not available

参考解决

https://blog.csdn.net/qq_41754409/article/details/107997225

原注解`@SpringBootTest 改为`

```
@RunWith(SpringRunner.class)
@SpringBootTest(webEnvironment = SpringBootTest.WebEnvironment.RANDOM_PORT)
```

Shutdown in program

```
javax.jms.JMSException Create breakpoint : Could not create Transport. Reason: java.lang.IllegalStateException: Shutdown in progr
    at org.apache.activemq.util.JMSExceptionSupport.create(JMSExceptionSupport.java:36) ~[activemq-client-5.16.2.jar:5.16.2]
    at org.apache.activemq.ActiveMQConnectionFactory.createTransport(ActiveMQConnectionFactory.java:333) ~[activemq-client-5.
    at org.apache.activemq.ActiveMQConnectionFactory.createActiveMQConnection(ActiveMQConnectionFactory.java:346) ~[activemq-
    at org.apache.activemq.ActiveMQConnectionFactory.createActiveMQConnection(ActiveMQConnectionFactory.java:304) ~[activemq-
    at org.apache.activemq.ActiveMQConnectionFactory.createConnection(ActiveMQConnectionFactory.java:244) ~[activemq-client-5.
```

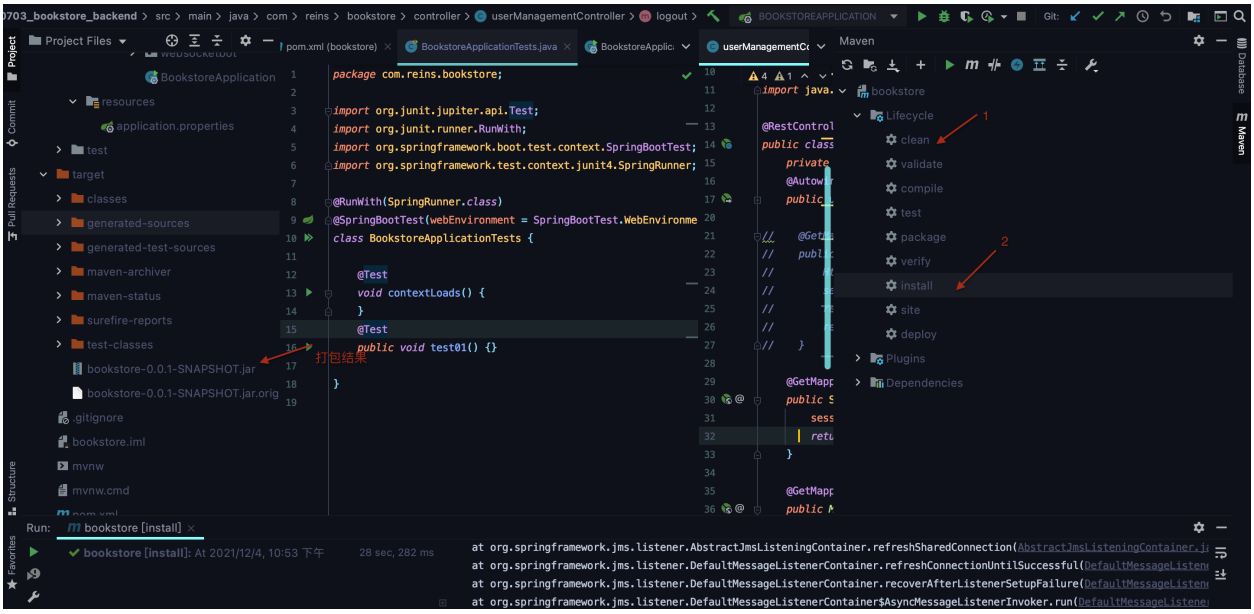
不是大的问题,只是因为测试结束了,Shutdown in progress 释放资源

可以在测试方法结尾添加

```
while (true) {

}
```

就可以完美解决

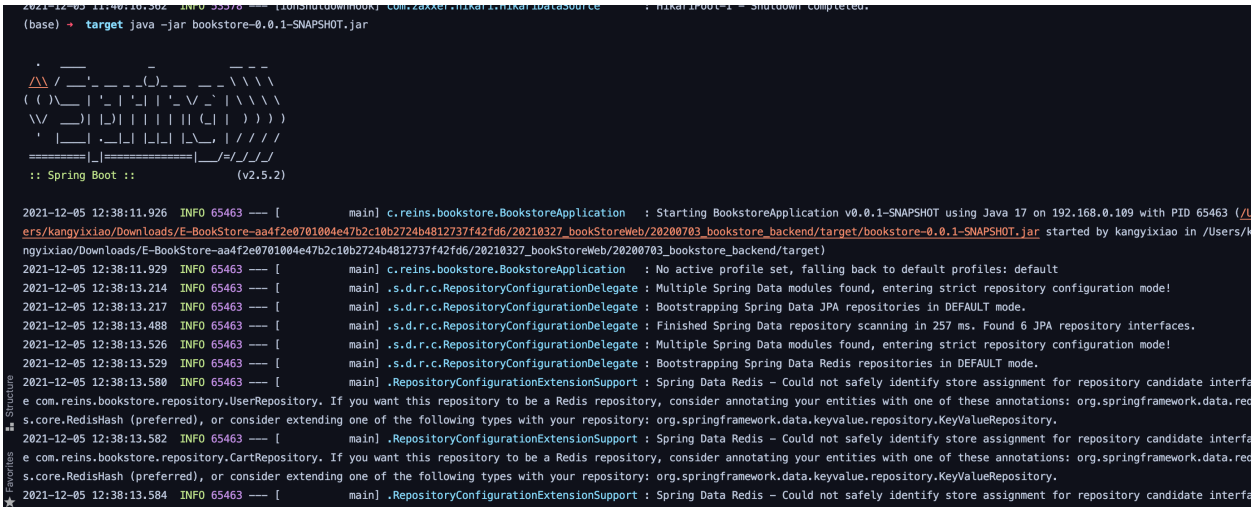
https://blog.csdn.net/zhangningniwanle/article/details/80062266



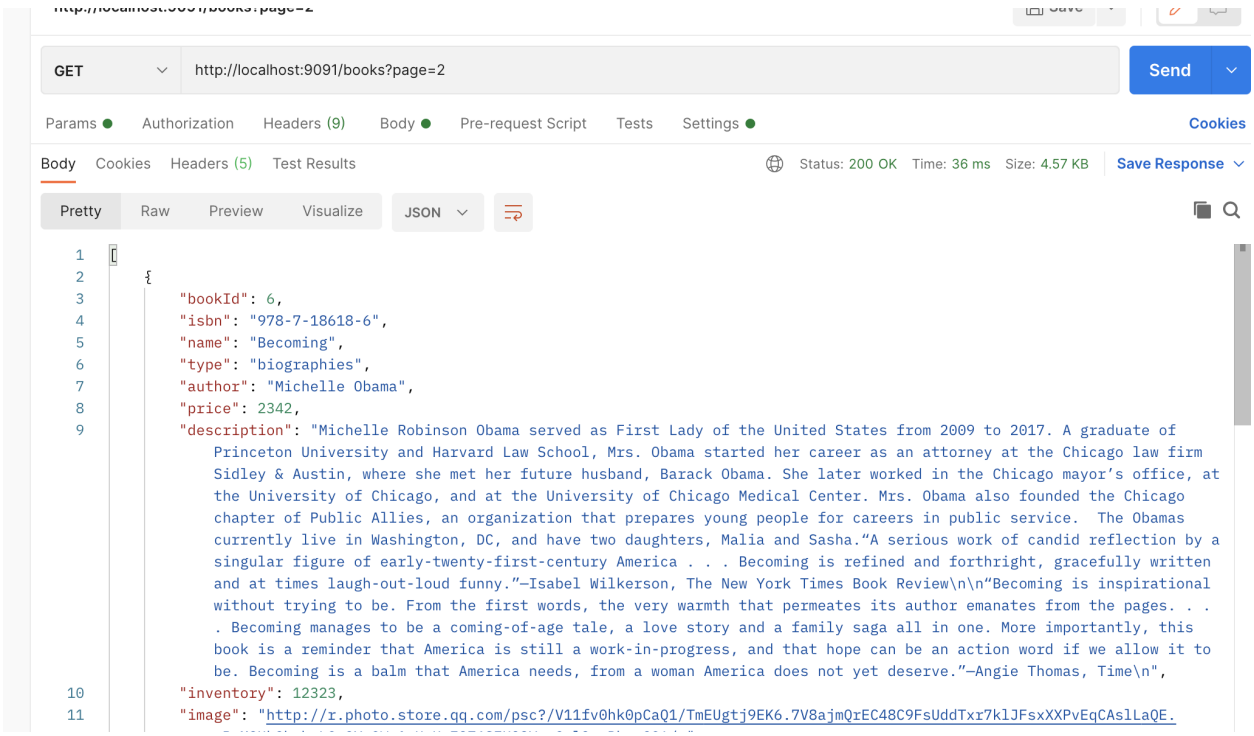
可以看见左侧打包成功了出现jar包

运行命令

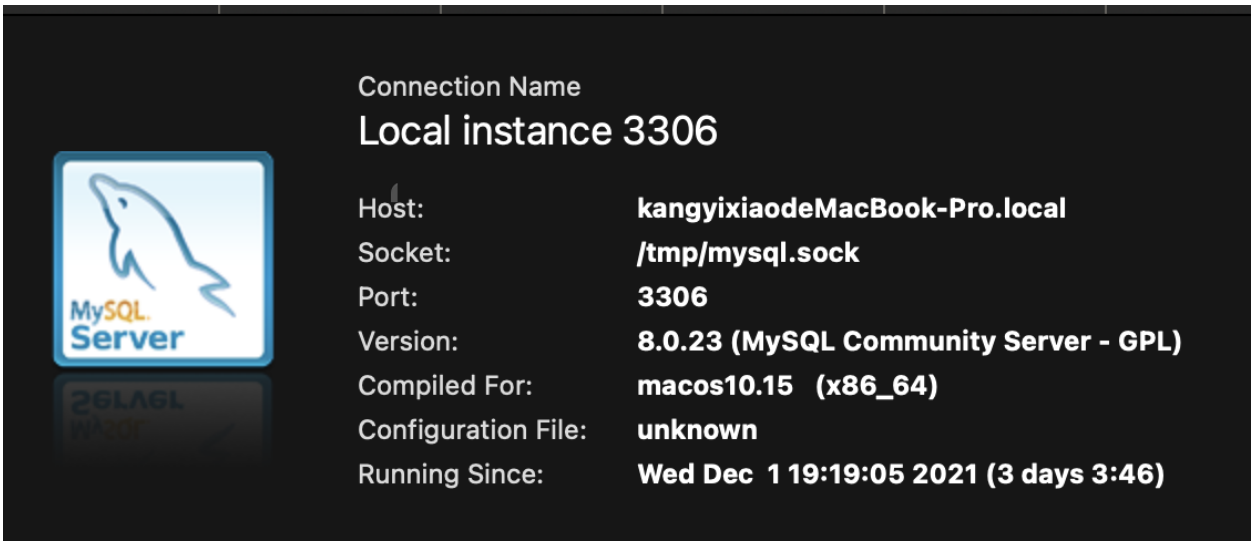
```
java -jar bookstore-0.0.1-SNAPSHOT.jar
```

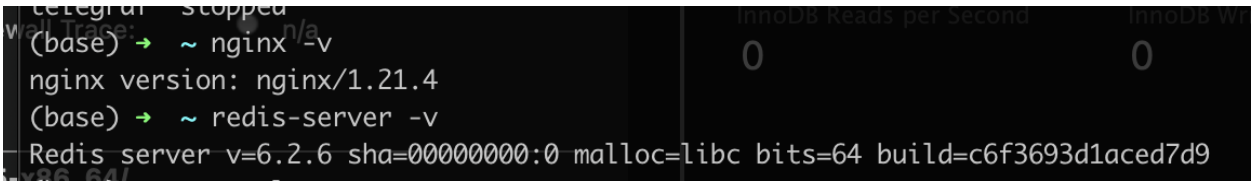


前端也可以用它来服务了。

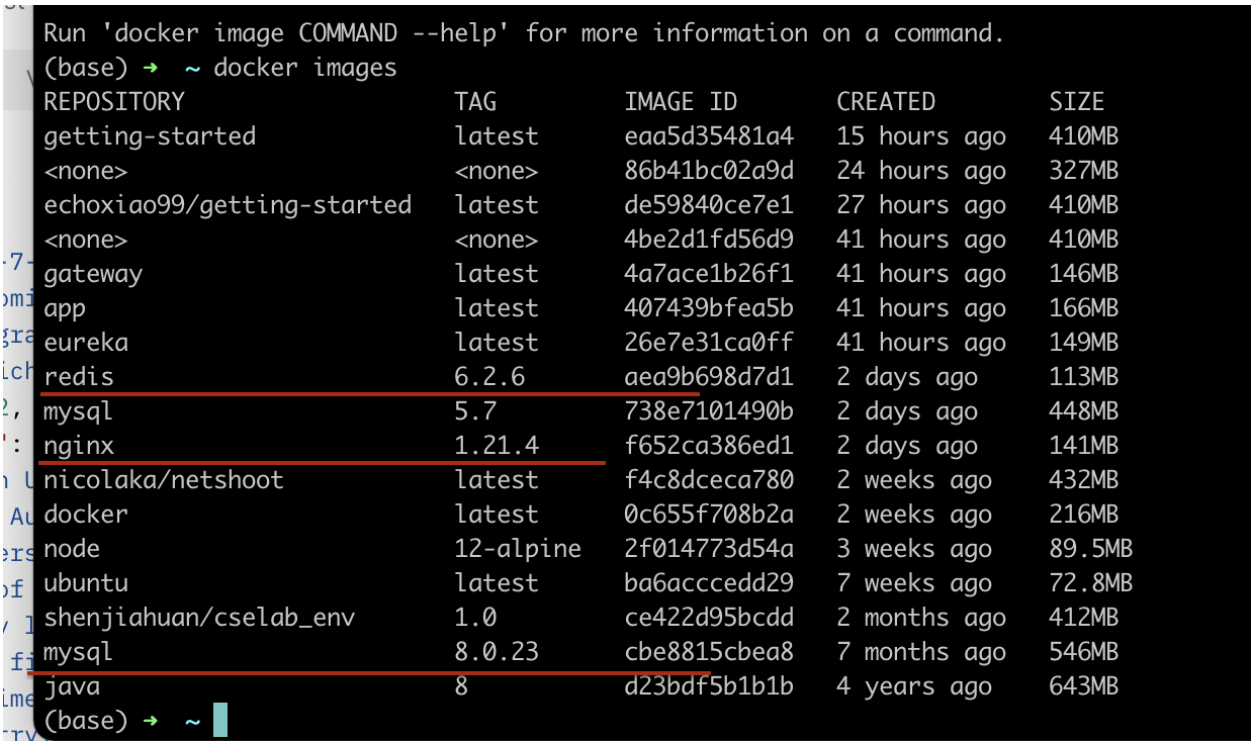


接下来获取各个依赖的版本





安装对应版本的image

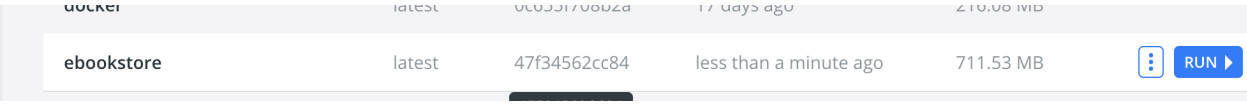


```
Run 'docker image COMMAND --help' for more information on a command.
(base) ➜  ~ docker images
REPOSITORY                   TAG         IMAGE ID       CREATED         SIZE
getting-started              latest      eaa5d35481a4   15 hours ago    410MB
<none>                       <none>      86b41bc02a9d   24 hours ago    327MB
echoxiao99/getting-started   latest      de59840ce7e1   27 hours ago    410MB
<none>                       <none>      4be2d1fd56d9   41 hours ago    410MB
gateway                      latest      4a7ace1b26f1   41 hours ago    146MB
app                          latest      407439bfea5b   41 hours ago    166MB
eureka                       latest      26e7e31ca0ff   41 hours ago    149MB
redis                        6.2.6       aea9b698d7d1   2 days ago      113MB
mysql                        5.7         738e7101490b   2 days ago      448MB
nginx                        1.21.4      f652ca386ed1   2 days ago      141MB
nicolaka/netshoot            latest      f4c8dceca780   2 weeks ago     432MB
docker                       latest      0c655f708b2a   2 weeks ago     216MB
node                         12-alpine   2f014773d54a   3 weeks ago     89.5MB
ubuntu                       latest      ba6acccedd29   7 weeks ago     72.8MB
shenjiahuan/cselab_env       1.0         ce422d95bcdd   2 months ago    412MB
mysql                        8.0.23      cbe8815cbea8   7 months ago    546MB
java                         8           d23bdf5b1b1b   4 years ago     643MB
(base) ➜  ~
```

编写Dockerfile, 在jar包同目录touch Douckerfile

```
# 基础镜像使用java
FROM java:8
# 维护人，作者
MAINTAINER yixiao
# VOLUME 指定了临时文件目录为/tmp,
# 其效果是在主机 /var/lib/docker 目录下创建了一个临时文件，并链接到容器的/tmp
VOLUME /tmp
# 将jar包添加到容器中并更名为app.jar
ADD bookstore-0.0.1-SNAPSHOT.jar  eBookStore.jar
# 暴露运行端口,但是这个EXPOSE并不会实际起作用，而只是一个提示一个声明，比如这里EXPOSE 80，实际application.yaml中的server.port配置90，那么容器实际有用的端口是9
# 在docker run -p指定宿主机端口与容器端口映射时容器端口应指定90而不是80
EXPOSE 80
# 指定prod环境运行
ENTRYPOINT ["java","-Dspring.profiles.active=prod","-Duser.timezone=GMT+8","-jar","eBookStore.jar"]
```

```
(base) ➜  dockerFile docker build -t ebookstore .
[+] Building 3.9s (7/7) FINISHED
 => [internal] load build definition from Dockerfile
 => => transferring dockerfile: 835B
 => [internal] load .dockerignore
 => => transferring context: 2B
 => [internal] load metadata for docker.io/library/java:8
 => [1/2] FROM docker.io/library/java:8
 => [internal] load build context
 => => transferring context: 68.35MB
 => [2/2] ADD bookstore-0.0.1-SNAPSHOT.jar  eBookStore.jar
 => exporting to image
 => => exporting layers
 => => writing image sha256:47f34562cc84199b7314099965c3bc7251d69a9a2d8d8db807d82d9079b82380
 => => naming to docker.io/library/ebookstore
```

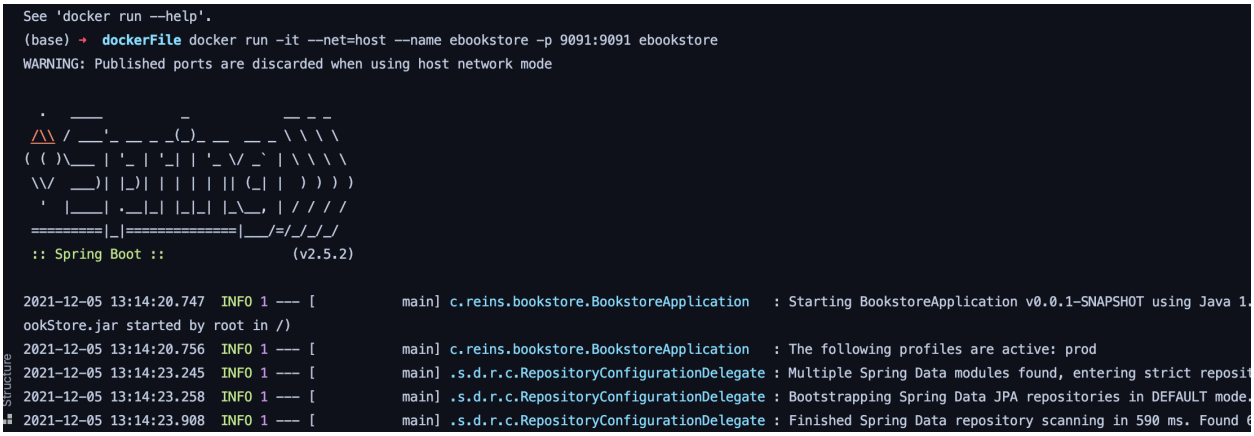


跑容器

```
docker run -it --net=host --name ebookstor(base)

docker run -it --net=host --name ebookstore -p 9091:9091 ebookstoree -p 9091:9091 ebookstore
```

```
docker run --name mysql -p 3306:3306 -v mysql_data:/var/lib/mysql -e MYSQL_ROOT_PASSWORD=password  -d mysql:8.0.23
```

于是就在docker环境跑起来了，但是会报mysql等依赖连接 的错误



```
2021-12-05 13:14:30.890 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.SQLError.createCommunicationsException(SQLError.java:174) ~[mysql-connector-java-8.0.25.jar!/:8.0.25]
        at com.mysql.cj.jdbc.exceptions.SQLExceptionsMapping.translateException(SQLExceptionsMapping.java:64) ~[mysql-connector-java-8.0.25.jar!/:8.0.25]
        at com.mysql.cj.jdbc.ConnectionImpl.createNewIO(ConnectionImpl.java:833) ~[mysql-connector-java-8.0.25.jar!/:8.0.25]
        at com.mysql.cj.jdbc.ConnectionImpl.<init>(ConnectionImpl.java:453) ~[mysql-connector-java-8.0.25.jar!/:8.0.25]
        at com.mysql.cj.jdbc.ConnectionImpl.getInstance(ConnectionImpl.java:246) ~[mysql-connector-java-8.0.25.jar!/:8.0.25]
        at com.mysql.cj.jdbc.NonRegisteringDriver.connect(NonRegisteringDriver.java:198) ~[mysql-connector-java-8.0.25.jar!/:8.0.25]
        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:206) ~[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-5.4.32.Final.jar!/:5.
        at org.hibernate.engine.jdbc.env.internal.JdbcEnvironmentInitiator$ConnectionProviderJdbcConnectionAccess.obtainConnection(JdbcEnvironmentInitiator.java:180) [hibernate-core-5.4
r!/:5.4.32.Final]
        at org.hibernate.engine.jdbc.env.internal.JdbcEnvironmentInitiator.initiateService(JdbcEnvironmentInitiator.java:68) [hibernate-core-5.4.32.Final.jar!/:5.4.32.Final]
        at org.hibernate.engine.jdbc.env.internal.JdbcEnvironmentInitiator.initiateService(JdbcEnvironmentInitiator.java:35) [hibernate-core-5.4.32.Final.jar!/:5.4.32.Final]
```

Structure Favorites

Run TODO Problems Terminal Profiler Build Endpoints Spring

```
ERROR 1049 (42000): Unknown database 'password'
root@96fde1534eb9:/# mysql -uroot -ppassword
mysql: [Warning] Using a password on the command line interface can be insecure.
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 12
Server version: 8.0.23 MySQL Community Server - GPL

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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> GRANT ALL PRIVILEGES ON *.* TO 'root'@'%'WITH GRANT OPTION;
Query OK, 0 rows affected (0.01 sec)

mysql> FLUSH PRIVILEGES;
Query OK, 0 rows affected (0.00 sec)
```

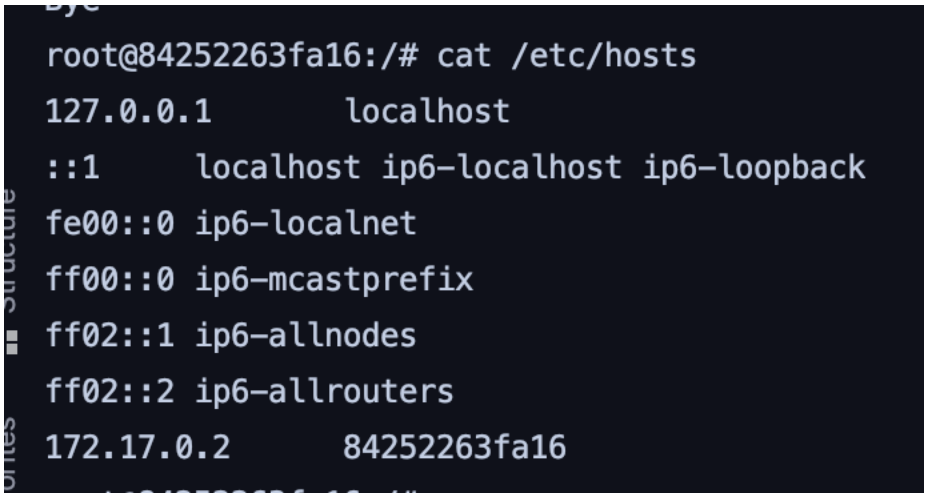
Structure Favorites

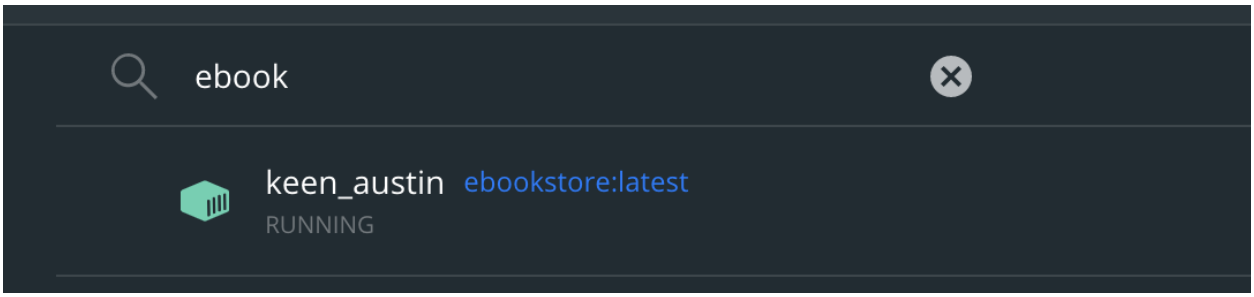
docker exec -it mysql bash

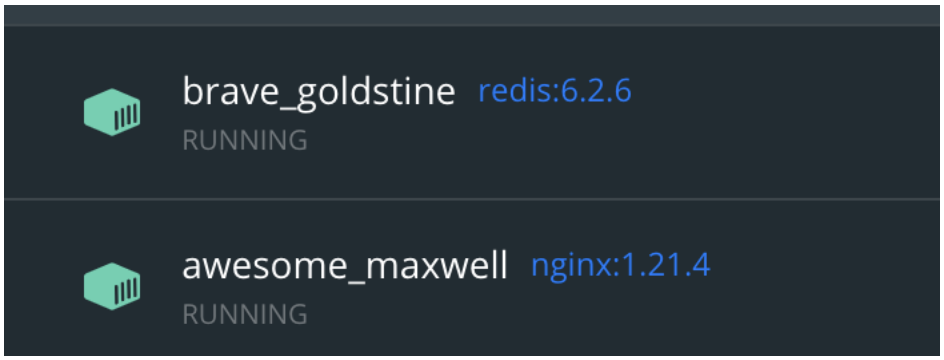
mysql -uroot -ppassword

GRANT ALL PRIVILEGES ON . TO 'root'@'%'WITH GRANT OPTION;

FLUSH PRIVILEGES;







session 和cookie 的区别

Cookies and Sessions are used to store information. Cookies are only stored on the client-side machine, while sessions get stored on the client as well as a server.

Session

A session creates a file in a temporary directory on the server where registered session variables and their values are stored. This data will be available to all pages on the site during that visit.

A session ends when the user closes the browser or after leaving the site, the server will terminate the session after a predetermined period of time, commonly 30 minutes duration.

Cookies

Cookies are text files stored on the client computer and they are kept of use tracking purpose. Server script sends a set of cookies to the browser. For example name, age, or identification number etc. The browser stores this information on a local machine for future use.

When next time browser sends any request to web server then it sends those cookies information to the server and server uses that information to identify the user.

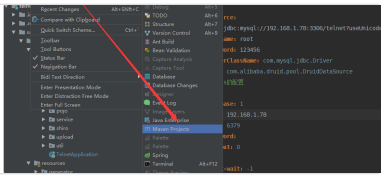
reference

https://blog.csdn.net/jomexiaotao/article/details/83271458

记一次docker部署springboot项目,mysql以及redis一样是docker中安装_zhs145612zhs的博客-CSDN博客

一：首先 在idea中的springboot项目打成jar包,具体是方式是如下 这里的数据库密码和账户必须是真确的，数据库和redis也是在docker中安装的 二:在docker中安装mysql的服务 这里的linux的版本是centos,具体安装docker就不介绍了 执行docker search mysql 这里的最新版本是8.0版本了 如果采用的话 项目中使用这个的话就会导致一般的5.X的jar不

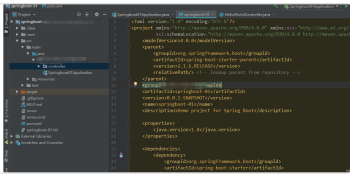
https://blog.csdn.net/zhs145612zhs/article/details/82225591?spm=1001.2101.3001.6650.3&utm_medium=distribute.pc_relevant.none-task-blog-2%7Edefault%7ECTRLIST%7Edefault-3.no_search_link&depth_1-utm_source=distribute.pc_relevant.none-task-blog-2%7Edefault%7ECTRLIST%7Edefault-3.no_search_link



在springboot项目中怎么打包成jar，同时怎么解析jar_my_ha_ha的博客-CSDN博客_springboot怎么打包成jar

第一步、创建好一个springboot的项目当然、我们需要在pom文件中导入一个插件 <!--把项目打包成jar包的插件--> <plugins> <plugin> <groupId>org.springframework.boot</groupId&gt...

https://blog.csdn.net/my_ha_ha/article/details/94183113



完整的docker+springboot+mysql部署_eriz程序之路-CSDN博客

网上文章多如牛毛，但在参照做时，多少遇到坑，故记一次完整的于此！我使用的是centos7。 1、准备阶段 a）安装docker b）安装mysql c）springboot打包与Dockerfile 2、开始部署 a）jar、Dockerfile文件 b）运行mysql并连接navicat c）运行项目 下载docker [root@localhost ~]# sudo yum install docker-ce 启动docker [root@localhost

https://blog.csdn.net/zhangcc233/article/details/96706157?spm=1001.2101.3001.6650.8&utm_medium=distribute.pc_relevant.none-task-blog-2%7Edefault%7EBlogCommendFromBaidu%7Edefault-8.fixedcolumn&depth_1-utm_source=distribute.pc_relevant.none-task-blog-2%7Edefault%7EBlogCommendFromBaidu%7Edefault-8.fixedcolumn