Rest API: create backend using spring boot, jpa, rest api, mysql

<https://www.javaguides.net/2022/09/spring-boot-rest-api-crud-example-with-mysql-database.html>

<https://blog.tericcabrel.com/build-rest-api-spring-boot-mysql/>

<https://www.geeksforgeeks.org/easiest-way-to-create-rest-api-using-spring-boot/>

dto: mapping between dto and entity springboot using modelmapper

<https://www.geeksforgeeks.org/spring-boot-map-entity-to-dto-using-modelmapper/>

<https://www.baeldung.com/entity-to-and-from-dto-for-a-java-spring-application>

<https://auth0.com/blog/automatically-mapping-dto-to-entity-on-spring-boot-apis/>

custom handle exception for spring boot backend api

<https://www.toptal.com/java/spring-boot-rest-api-error-handling>

<https://www.baeldung.com/exception-handling-for-rest-with-spring>

exception handling in java

<https://www.javatpoint.com/exception-handling-in-java>

custom general response for spring boot backend api

<https://medium-com.translate.goog/@aedemirsen/generic-api-response-with-spring-boot-175434952086?_x_tr_sl=vi&_x_tr_tl=en&_x_tr_hl=vi&_x_tr_pto=wapp>

<https://medium-com.translate.goog/@aedemirsen/generic-api-response-with-spring-boot-175434952086?_x_tr_sl=vi&_x_tr_tl=en&_x_tr_hl=vi&_x_tr_pto=wapp>

datetime

<https://www.baeldung.com/spring-date-parameters>

mapstruct

<https://auth0.com/blog/how-to-automatically-map-jpa-entities-into-dtos-in-spring-boot-using-mapstruct/>

<https://stackoverflow.com/questions/77685947/correct-way-to-update-nested-object-with-mapstruct>

<https://medium-com.translate.goog/@susantamon/mapstruct-a-comprehensive-guide-in-spring-boot-context-1e7202da033e?_x_tr_sl=vi&_x_tr_tl=en&_x_tr_hl=vi&_x_tr_pto=wapp>

onetomany, manytomany

<https://www.baeldung.com/hibernate-one-to-many>

<https://www.baeldung.com/jpa-many-to-many>

cors configuration for springboot backend

<https://howtodoinjava.com/spring-boot2/spring-cors-configuration/>

<https://spring.io/guides/gs/rest-service-cors>

springboot swagger implementation

<https://www.baeldung.com/swagger-2-documentation-for-spring-rest-api>

<https://bell-sw.com/blog/documenting-rest-api-with-swagger-in-spring-boot-3/>

security

<https://www.toptal.com/spring/spring-security-tutorial>

<https://medium-com.translate.goog/code-with-farhan/spring-security-jwt-authentication-authorization-a2c6860be3cf?_x_tr_sl=vi&_x_tr_tl=en&_x_tr_hl=vi&_x_tr_pto=wapp>

<https://www.codejava.net/frameworks/spring-boot/spring-security-jwt-authentication-tutorial>

<https://www.geeksforgeeks.org/spring-boot-3-0-jwt-authentication-with-spring-security-using-mysql-database/>

<https://www.bezkoder.com/spring-boot-jwt-authentication/#google_vignette>

rsa

<https://www.baeldung.com/java-rsa>

<https://www.novixys.com/blog/how-to-generate-rsa-keys-java/>

Sign an object with privatekey using Signature java and convert it to java string

<https://stackoverflow.com/questions/7224626/how-to-sign-string-with-private-key>

<https://www.baeldung.com/java-digital-signature>

free springboot backend hosting

<https://hostingtutorials.dev/blog/free-spring-boot-host-with-render>

<https://www.youtube.com/watch?v=0vtV3huV3os>

<https://medium-com.translate.goog/spring-boot/free-hosting-bliss-deploying-your-spring-boot-app-on-render-d0ebd9713b9d?_x_tr_sl=vi&_x_tr_tl=en&_x_tr_hl=vi&_x_tr_pto=wapp>

hosting mysql database free with 000webhost

<https://www.youtube.com/watch?v=THpb3b294cY>

forgot password send otp via gmail to recover password for free using springboot java

<https://betterjavacode-medium-com.translate.goog/forgot-password-feature-in-spring-boot-application-5364293c0f5d?_x_tr_sl=vi&_x_tr_tl=en&_x_tr_hl=vi&_x_tr_pto=wapp>

<https://www.youtube.com/watch?v=zR19O4imql0>

Send realtime notifications using firebase admin spring boot

<https://www.baeldung.com/spring-fcm>

<https://medium-com.translate.goog/@rajdeepify/push-notifications-using-springboot-and-firebase-cloud-messaging-ad136746c57e?_x_tr_sl=vi&_x_tr_tl=en&_x_tr_hl=vi&_x_tr_pto=wapp>

Practical application cases of message queue, rabbitmq, kafka

<https://www.cloudamqp.com/blog/rabbitmq-use-cases-explaining-message-queues-and-when-to-use-them.html>

send files via spring boot api

<https://www.bezkoder.com/spring-boot-file-upload/>

<https://www.codejava.net/frameworks/spring-boot/file-download-upload-rest-api-examples>

<https://spring.io/guides/gs/uploading-files>

Optimize performance with orm in spring boot

<https://medium-com.translate.goog/@avi.singh.iit01/optimizing-performance-with-spring-data-jpa-85583362cf3a?_x_tr_sl=vi&_x_tr_tl=en&_x_tr_hl=vi&_x_tr_pto=wapp>

<https://www.linkedin.com/pulse/optimizing-performance-spring-data-jpa-nilesh-mahant-kzamf/>

cache mysql database using redis in spring boot

<https://blog.tericcabrel.com/data-caching-spring-boot-redis/>

<https://medium-com.translate.goog/@anil.goyal0057/mastering-caching-in-spring-boot-with-mysql-and-redis-a726d7a0883f?_x_tr_sl=vi&_x_tr_tl=en&_x_tr_hl=vi&_x_tr_pto=wapp>

<https://www.baeldung.com/spring-boot-redis-cache>

<https://www.digitalocean.com/community/tutorials/spring-boot-redis-cache>

index database spring boot

<https://www.baeldung.com/jpa-indexes>

<https://backendhance.com/en/blog/2023/how-to-setup-index-in-spring/>

load balancer for requests in spring boot

<https://spring.io/guides/gs/spring-cloud-loadbalancer>

<https://www.baeldung.com/spring-cloud-load-balancer>

transaction annotation in spring boot

<https://www.geeksforgeeks.org/spring-boot-transaction-management-using-transactional-annotation/>

<https://viblo.asia/p/spring-boot-transactional-loi-hau-het-moi-nguoi-gap-phai-bWrZnr9nZxw>

Implement data atomicity in spring boot (transaction)

<https://stackoverflow.com/questions/34636151/transaction-atomicity-in-spring>

<https://medium-com.translate.goog/chain-analytica/how-to-manage-transactions-in-spring-boot-using-annotations-cbee57fe6e73?_x_tr_sl=vi&_x_tr_tl=en&_x_tr_hl=vi&_x_tr_pto=wapp>

<https://pramitha--wanigarathne-medium-com.translate.goog/database-transaction-with-spring-boot-acid-bf101e3042b5?_x_tr_sl=vi&_x_tr_tl=en&_x_tr_hl=vi&_x_tr_pto=wapp>

<https://www.baeldung.com/java-atomic-variables>

Perform isolation in data spring boot

Thực hiện nhiều Transaction trên nhiều luồng, giống như đang thực hiện một cách tuần tự

<https://www.baeldung.com/spring-transactional-propagation-isolation>

<https://medium-com.translate.goog/javarevisited/database-isolation-level-with-postgresql-and-spring-boot-c6c2f8fe3b46?_x_tr_sl=vi&_x_tr_tl=en&_x_tr_hl=vi&_x_tr_pto=wapp>

<https://www.linkedin.com/pulse/understanding-transactional-spring-boot-isolation-levels-pandey-pie2c/>

<https://stackoverflow.com/questions/71534310/spring-transactional-with-isolation-serializable-does-not-lock-database-row-for>

The most important design patterns in Java

<https://vmsoftwarehouse.com/the-10-most-popular-types-of-design-patterns-in-java>

<https://www.quora.com/Which-are-the-important-and-widely-used-design-patterns-in-Java>

Handling concurrency in spring boot

<https://rahulraj.io/different-ways-to-write-concurrency-safe-database-operations-in-spring-boot>

<https://dzone.com/articles/concurrency-control-in-rest-api-with-spring-framew>

<https://dip--mazumder-medium-com.translate.goog/concurrency-control-in-java-persistence-api-jpa-with-hibernate-optimistic-vs-d74bb50fe4ec?_x_tr_sl=vi&_x_tr_tl=en&_x_tr_hl=vi&_x_tr_pto=wapp>

<https://www.linkedin.com/pulse/jpa-locking-spring-boot-ensuring-data-consistency-concurrent-kumar-jw2zc/>

Explain about concurrency when updating the database

<https://www.geeksforgeeks.org/concurrency-control-in-dbms/>

<https://www.solarwinds.com/resources/it-glossary/database-concurrency>

call spring boot asynchronous api

<https://medium-com.translate.goog/@basecs101/spring-boot-async-annotation-make-api-calls-asynchronous-2024-latest-dcce878d0fe2?_x_tr_sl=vi&_x_tr_tl=en&_x_tr_hl=vi&_x_tr_pto=wapp>

<https://www.baeldung.com/spring-async>

thread processing in java

<https://dev.to/danielrendox/multithreading-in-java-part-1-process-vs-thread-2glf>

<https://www.javatpoint.com/multithreading-in-java>

Use @Version optimistic locking in spring boot

<https://www.baeldung.com/jpa-optimistic-locking>

<https://beratyesbek-medium-com.translate.goog/pessimistic-and-optimistic-locking-in-jpa-spring-boot-aa59f2b906fa?_x_tr_sl=vi&_x_tr_tl=en&_x_tr_hl=vi&_x_tr_pto=wapp>

Build chat app using websocket use spring boot

<https://www.callicoder.com/spring-boot-websocket-chat-example/>

<https://www.youtube.com/watch?v=TywlS9iAZCM&ab_channel=BoualiAli>

<https://github.com/tushar-prabhu/chat_app-springboot/tree/main>

<https://gabrielpulga-medium-com.translate.goog/building-a-real-time-chat-application-with-spring-boot-and-websocket-4ad1c68ee217?_x_tr_sl=vi&_x_tr_tl=en&_x_tr_hl=vi&_x_tr_pto=wapp>

<https://www.javainuse.com/spring/boot-websocket-chat>

send notification using socket io with spring boot and react js

<https://dev.to/amalja0/how-to-integrating-socketio-with-spring-boot-and-react-spring-boot-implementation-1ma4>

<https://hpcodes-medium-com.translate.goog/send-messages-from-spring-boot-backend-to-reactjs-app-using-websocket-4120f6979c9b?_x_tr_sl=vi&_x_tr_tl=en&_x_tr_hl=vi&_x_tr_pto=wapp>

<https://github.com/zcmgyu/websocket-spring-react>

send realtime notifications from spring boot to react js

<https://refactorfirst.com/spring-boot-websockets-stomp-notifications>

<https://medium-com.translate.goog/@deshanipalliyaguruge2000/sending-broadcast-notifications-with-websocket-spring-boot-react-stomp-and-sockjs-50d99352c5bb?_x_tr_sl=vi&_x_tr_tl=en&_x_tr_hl=vi&_x_tr_pto=wapp>

<https://hilla.dev/blog/send-web-push-notifications-java/>

learn ci/cd

<https://www.youtube.com/playlist?list=PLy7NrYWoggjzSIlwxeBbcgfAdYoxCIrM2>

<https://www.youtube.com/watch?v=h9K1NnqwUvE&t=61s&ab_channel=Simplilearn>

all about kafka explained

<https://www.spiceworks.com/tech/data-management/articles/what-is-kafka/>

<https://aiven.io/blog/kafka-simply-explained>

explains all about kubernetes

<https://nulab.com/learn/software-development/introduction-kubernetes-containers/>

<https://enterprisersproject.com/article/2020/4/kubernetes-everything-you-need-know>

solid principles when coding

<https://www.freecodecamp.org/news/solid-principles-for-programming-and-software-design/>

<https://www.digitalocean.com/community/conceptual-articles/s-o-l-i-d-the-first-five-principles-of-object-oriented-design>

unit test in java

<https://www.freecodecamp.org/news/java-unit-testing/>

<https://www.baeldung.com/java-unit-testing-best-practices>

use kafka in spring boot

<https://www.baeldung.com/spring-kafka>

<https://docs.spring.io/spring-kafka/reference/quick-tour.html>

<https://medium-com.translate.goog/@abhishekranjandev/a-comprehensive-guide-to-integrating-kafka-in-a-spring-boot-application-a4b912aee62e?_x_tr_sl=vi&_x_tr_tl=en&_x_tr_hl=vi&_x_tr_pto=wapp>

multi-tenancy architecture

<https://www.gooddata.com/blog/multi-tenant-architecture/#:~:text=Multi%2Dtenant%20architecture%20creates%20distinct,dedicated%20space%20in%20the%20system>.

<https://www.techtarget.com/whatis/definition/multi-tenancy>

use elasticsearch in spring boot

<https://viblo.asia/p/spring-data-elasticsearch-tan-dung-elasticsearch-trong-ung-dung-spring-boot-oK9VyxeALQR>

<https://www.baeldung.com/spring-data-elasticsearch-tutorial>

<https://medium-com.translate.goog/@abhishekranjandev/step-by-step-guide-to-using-elasticsearch-in-a-spring-boot-application-477ba7773dea?_x_tr_sl=vi&_x_tr_tl=en&_x_tr_hl=vi&_x_tr_pto=wapp>

use mongodb in spring boot

<https://www.mongodb.com/resources/products/compatibilities/spring-boot>

<https://spring.io/guides/gs/accessing-data-mongodb>

<https://viblo.asia/p/ket-noi-spring-boot-voi-mongodb-0gdJz0nAVz5>

<https://www.baeldung.com/spring-data-mongodb-tutorial>

use mariadb in spring boot

<https://isonusingh-medium-com.translate.goog/spring-boot-mariadb-integration-72ee97ced3de?_x_tr_sl=vi&_x_tr_tl=en&_x_tr_hl=vi&_x_tr_pto=wapp#:~:text=Spring%20Boot%20can%20be%20configured,connect%20to%20the%20MariaDB%20instance>.

<https://springframework.guru/configuring-spring-boot-for-mariadb/>

<https://www.javaguides.net/2020/01/spring-boot-mariadb-crud-example-tutorial.html>

Deploy spring boot application on k8s

<https://spring.io/guides/gs/spring-boot-kubernetes>

<https://bell-sw.com/blog/how-to-deploy-spring-boot-application-on-kubernetes/>

<https://learnk8s.io/spring-boot-kubernetes-guide>

kubernate architecture and explanation

<https://www.geeksforgeeks.org/kubernetes-architecture/>

<https://www.linkedin.com/pulse/easy-understanding-kubernetes-architecture-real-world-sophiya-samuel-srjbc/>

tham khảo thêm

<https://assist-software.net/blog/how-implement-dynamic-multi-tenancy-mongodb-and-spring-boot>

<https://doordash.engineering/2024/03/27/setting-up-kafka-multi-tenancy/>

<https://github.com/carloselpapa10/multitenancy>

<https://www.baeldung.com/multitenancy-with-spring-data-jpa>

<https://medium.com/@mircea3/spring-boot-database-multitenancy-using-mysql-and-hibernate-24f7110be847>

<https://dzone.com/articles/transmitting-log-messages-to-a-kafka-topic-using-k>

<https://medium.com/@alexantaniuk/guide-to-multi-tenancy-with-spring-boot-and-mongodb-78ea5ef89466>

integrate kafka and elasticsearch spring boot

<https://www.geeksforgeeks.org/spring-boot-consume-message-through-kafka-save-into-elasticsearch-and-plot-into-grafana/>

<https://github.com/alonsoir/demo-kafka-elastic>

Retrieve and search logs using elasticsearch spring boot

<https://auth0.com/blog/spring-boot-logs-aggregation-and-monitoring-using-elk-stack/>

Asynchronous log reading and writing model using kafka, elasticsearch, kibana

<https://medium-com.translate.goog/@umitulkemyildirim/how-to-use-elk-stack-elasticsearch-logstash-kibana-kafka-for-logging-d824a75f68bb?_x_tr_sl=vi&_x_tr_tl=en&_x_tr_hl=vi&_x_tr_pto=wapp>

logging spring boot

<https://www.baeldung.com/spring-boot-logging>

<https://viblo.asia/p/tim-hieu-log-trong-spring-boot-RnB5ppNJ5PG>

send logging using kafka spring boot

<https://hashnode.com/post/streaming-spring-boot-logs-to-apache-kafka-cjfutbidg001clhs1qgdk21j5>

<https://github.com/alexwoolford/spring-boot-log-to-kafka-example>

docker-compose.yml for spring boot app using mariadb multinancy multidatabase github

<https://github.com/chatterjeesunit/spring-boot-app/blob/master/docker-compose.yml>

<https://gist.github.com/javatodev/8ad0bb6a571d74e8ed966a79a55e1c7b>

<https://gist.github.com/arunvariyath/4e7456a30696cfb9fffb7d40aa2e180b>

docker-compose.yml for spring boot app using kafka

<https://github.com/codefreshdemo/example-springboot-kafka/blob/master/docker-compose.yml>

<https://statusneo.com/kafka-with-spring-boot-using-docker-compose/>

<https://devapo.io/blog/technology/kafka-in-spring-boot-on-docker/>

docker-compose.yml for spring boot app using elasticsearch logtash kibana

<https://github.com/virtualSharif/spring-boot-app-with-elk/blob/master/docker-compose.yml>

<https://github.com/Rapter1990/SpringBootElk/blob/master/docker-compose.yml>

<https://medium-com.translate.goog/@lahiruchandika/integrate-elk-stack-into-spring-boot-application-4991e7918c3a?_x_tr_sl=vi&_x_tr_tl=en&_x_tr_hl=vi&_x_tr_pto=wapp>

<https://delta-dev-software.fr/logging-with-spring-bootelasticsearch-logstash-kibana>

<https://github.com/alsahba/todoapp/blob/master/docker-compose.yml>

docker-compose.yml for spring boot app using mongodb github

<https://github.com/bezkoder/docker-compose-spring-boot-mongodb>

<https://github.com/sfmohassel/spring-boot-mongodb-docker-compose-starter>

<https://github.com/david-romero/spring-boot-mongo-docker/blob/master/docker-compose.yml>

docker-compose.yml tells mariadb to execute commands to create databases and tables

<https://stackoverflow.com/questions/43322033/create-database-on-docker-compose-startup>

Dynamic configuration for datasource multi tenancy architecture using spring boot

<https://dzone.com/articles/dynamic-multi-tenancy-using-java-spring-boot-sprin>

<https://stackoverflow.com/questions/37097530/spring-boot-jpa-multitenancy-with-dynamic-datasources>

<https://callistaenterprise.se/blogg/teknik/2020/09/19/multi-tenancy-with-spring-boot-part1/>

<https://github.com/Cepr0/sb-multitenant-db-demo>

<https://www.bytefish.de/blog/spring_boot_multitenancy_configuration.html>

Multi tenancy multi database dynamic set datasource use spring boot github

<https://github.com/arivuselvanchinnasamy/spring-multitenant-demo>

hibernate spring boot

<https://www.baeldung.com/spring-boot-hibernate>

<https://techmaster.vn/posts/36274/huong-dan-su-dung-jpa-va-hibernate-bang-spring-boot-data-jpa-phan-1>

<https://magz.techover.io/2023/02/03/huong-dan-su-dung-spring-boot-voi-hibernate/>

Required Commands:

.\bin\windows\zookeeper-server-start.bat .\config\zookeeper.properties

.\bin\windows\kafka-server-start.bat .\config\server.properties

kafka-topics.bat --create --bootstrap-server localhost:9092 --replication-factor 1 --partitions 1 --topic viettel

kafka-topics.bat --create --zookeeper localhost:2181 --replication-factor 1 --partitions 1 --topic viettel

kafka-console-producer.bat --broker-list localhost:9092 --topic test

Sample Data:

{"Name: "John", "Age":"31", "Gender":"Male"}

{"Name: "Emma", "Age":"27", "Gender":"Female"}

{"Name: "Ronald", "Age":"17", "Gender":"Male"}

kafka-console-consumer.bat --topic test --bootstrap-server localhost:9092 --from-beginning .\bin\windows\zookeeper-server-stop.bat .\config\zookeeper.properties

.\bin\windows\kafka-server-stop.bat .\config\server.properties

Cài đặt elasticsearch, kibana, logstash

<https://www.youtube.com/watch?v=BybAetckH88>

Tài khoản và mật khẩu elasticsearch: elastic vs \*IdazT\_Y8zcZlCQn5z9G

logstash -f .\config\logstash-kafka.conf --config.reload.automatic

**Các bước chạy hệ thống**

+Đầu tiên, vào C:\kafka khởi động server và zookeeper của kafka sử dụng lệnh

.\bin\windows\zookeeper-server-start.bat .\config\zookeeper.properties

.\bin\windows\kafka-server-start.bat .\config\server.properties

+Vào F:\elasticsearch\elasticsearch-8.13.4-windows-x86\_64\elasticsearch-8.13.4\bin dùng lệnh elasticsearch.bat

để khởi động elasticsearch

+Vào F:\elasticsearch\kibana-8.13.4\bin dùng lệnh

kibana.bat

để khởi động kibana

+Vào F:\elasticsearch\logstash-8.13.4\bin dùng lệnh

logstash -f .\config\logstash-kafka.conf --config.reload.automatic

để khởi động logstash giúp ghi dữ liệu vào elasticsearch để hiển thị trên kibana

+Chạy dự án KafkaConsumer trong miniproject folder

+Chạy dự án MultitenancyMultiDatabase trong miniproject folder

+Sử dụng postman đăng nhập với tài khoản trong SecurityConfiguration rồi sử dụng token ở header thực hiện các api để ghi log ra kafka.

+Khi tắt, làm ngược lại

schema annotation spring boot

<https://www.baeldung.com/swagger-parameter-vs-schema>

operation annotation spring boot

<https://www.baeldung.com/swagger-operation-vs-apiresponse>

trace annotation spring boot

<https://docs.newrelic.com/docs/apm/agents/java-agent/api-guides/java-agent-api-instrument-using-annotation/>

static in java

<https://www.javatpoint.com/static-keyword-in-java>

<https://www.javatpoint.com/final-keyword>

suppress warnings annotation spring boot

<https://www.baeldung.com/java-suppresswarnings>

java regex check

<https://www.javatpoint.com/java-regex>

login using oauth spring boot

<https://www.codejava.net/frameworks/spring-boot/oauth2-login-with-google-example>

<https://www.baeldung.com/spring-security-5-oauth2-login>

<https://www.danvega.dev/blog/spring-security-oauth2-login>

java test coverage

<https://viblo.asia/p/gioi-thieu-junit-va-code-coverage-bJzKmGEkl9N>

<https://www.baeldung.com/cs/code-coverage>