

Create a Java web application that meets the following criteria:

- no presentation required
- no (bean) validation required
- compiles successfully
- supports at least 2 operations: adding and listing of items
- the operations are exposed either via an UI (server-side) or REST (JSON) or client-side UI + REST (JSON)
- items are stored in a database (one of: postgresql/mysql/mariadb/sqlite | mongodb | redis)
- uses one of the following technologies:
  1. Spring MVC (with a mongodb or redis storage) – [spring.io](http://spring.io) | [start.spring.io](http://start.spring.io)
  2. Vert.x – [vertx.io](http://vertx.io) | [start.vertx.io](http://start.vertx.io)
  3. Spring WebFlux – [spring.io](http://spring.io) | [start.spring.io](http://start.spring.io)
  4. Spark-Java – [sparkjava.com](http://sparkjava.com)
  5. Micronaut – [micronaut.io](http://micronaut.io) | [micronaut.io/launch](http://micronaut.io/launch)
  6. Quarkus – [quarkus.io](http://quarkus.io)
  7. Helidon – [helidon.io](http://helidon.io)

Server-side UI templating:

- Thymeleaf
- FreeMarker
- Jade
- anything else except JSP

Some useful links:

- [MongoDB](https://www.mongodb.com)
- [Redis](https://redis.io)
- [SQLite JDBC](https://www.sqlite.org/jdbc.html)
- [MongoDB mini-guide](https://www.mongodb.com/docs/mongodb-mini-guide/)
- [Redis Client](https://redis.io/docs/en/clients/)

Guidance:

This is an exploratory exercise to check out various Java web technologies. A good place to start is by checking out the “quickstart” page. After going through the “get started”/“quickstart” page, you should end up with a basic web application (http server). At this point you can start looking into integrating with a database. You should also checkout the “docs” page for recommended clients/guides.

Warning: The listed Java technologies can have wildly different approaches on how things are done but by following the “quickstart” page you should end up with working examples:

- for Vertx, check out the “docs” page, they provide JDBC clients, Redis + Mongo Clients and also have guides for server-side templating. Beware though, Vert.x implies asynchronous code.
- Spring Webflux is more of a challenge because it implies reactive programming.
- Spark-Java – lambda focused
- Micronaut, Quarkus and Helidon provide both imperative/synchronous as well as async/reactive approaches. The first approach is closer to Spring MVC (easier because of familiarity)