

# DESIGN & CODING TASK

## DESCRIPTION

Design and code an application which exposes a web service that constantly receives high volume traffic containing order details from different e-commerce platforms. Order details include shipment number, receiver e-mail, receiver country code, sender country code and status code (values from 0 to 100). E-mail notifications are sent out to the users containing all those order details based on incoming requests.

There can be multiple messages for single order, for example status change results in new request being sent to the application with updated status code.

### Functional Requirements

1. Regardless of incoming traffic volume the application should not become unresponsive / overloaded – both in receiving and sending data functions.
2. Each received request should be logged in the database.
3. The e-mail sending service should be mocked (no actual e-mail to be sent).
4. Application performance / throughput should be easily controllable in both receiving and sending data functions, especially db and e-mail service cannot be overloaded.

### Technical Requirements

Application should be developed in Java 11+, Spring Boot, using Kafka and Docker, any DB (can be in memory store).

### Expected Result

The solution should be in form of a .zip file containing:

- Application codebase in a folder.
- Text file containing link to docker image published in hub.docker.com.
- Ready-to-use docker-compose file to run application and its stack.
- Architectural diagram of the proposed solution.