***Write a Java program using springboot and streaming tool, SQL/NoSQL DB along with all the JUNIT cases. TDD approach will be preferred. Please provide a pipeline to deploy the application preferably using github actions if not then jenkins. The pipeline must have automation regression, OSS vulnerability check (If critical or blocker found then fail the build).***

**Problem Statement**

There is a scenario where **thousands** of trades are flowing into one store, assume any way of **transmission** of trades. We need to create a one trade store, which stores the trade in the following order

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Trade Id | Version | Counter-Party Id | Book-Id | Maturity Date | Created Date | Expired |
| T1 | 1 | CP-1 | B1 | 20/05/2020 | <today date> | N |
| T2 | 2 | CP-2 | B1 | 20/05/2021 | <today date> | N |
| T2 | 1 | CP-1 | B1 | 20/05/2021 | 14/03/2015 | N |
| T3 | 3 | CP-3 | B2 | 20/05/2014 | <today date> | Y |

There are couples of validation, we need to provide in the above assignment

1. During transmission if the lower version is being received by the store it will reject the trade and throw an exception. If the version is same it will override the existing record.
2. Store should not allow the trade which has less maturity date then today date.
3. Store should automatically update the expire flag if in a store the trade crosses the maturity date.

**Here are unit test cases as per TDD approach –**

1. A test case which should save a new trade if no existing trade is found.
2. A test case which should override existing trade if incoming version is same or higher.
3. A test case which should reject the trade if incoming version is lower than existing.
4. A test case which should reject the trade if maturity date is already passed.
5. A test case which should update expired flag for trades past their maturity date.
6. A test case which should not update expired flag for trades not past their maturity date.
7. A test case for Kafka Producer where a trade should be successfully sent to the Kafka.
8. A test case for Kafka Producer where a trade should be failed to send to the Kafka.
9. A test case for Kafka Consumer where a trade should be successfully processed.
10. A test case for Kafka Consumer where a trade should generate an exception for maturity date check.
11. A test case for Rest Controller where a trade should be able to send successfully to Kafka Producer.
12. A test case for Rest Controller where a trade submission is failed because of invalid URI.
13. A test case to test the schedular which will mark the Expired flag in case maturity date is passed.
14. A test case for Kafka config just to test the kafka configuration.