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CDM Training: Java Post-Trade

2 days (14 hours)

Overview

The Common Domain Model is a standardized business model for representing financial transactions and their lifecycle events. With its Java objects and executable functions, the CDM provides a common foundation for building consistent post-trade processing and facilitating exchanges between financial applications.

Our CDM Development: Post-Trade Java training course will enable you to translate the business model into code to integrate the CDM into your applications and manage the successive stages of a transaction.

You will learn how to build CDM objects, integrate FpML (Financial Products Markup Language) data, and use validation mechanisms to detect missing data and business inconsistencies.

By the end of the course, you will be able to implement a partial termination and a novation while monitoring their effects on quantities, counterparties, and transaction statuses.

This course uses progressive exercises to build an application that illustrates a post-trade workflow with JSON serialization and business transition testing, tailored for Java developers and financial systems integration engineers.

Like all our training courses, this one will introduce you to **the latest stable version** of the technology and its new features.

Objectives

- Build and manipulate CDM objects in a Java application

- Convert data from an FpML example into CDM objects
- Execute validation checks and interpret their results
- Implement a partial termination and a novation using CDM functions
- Assemble a post-trade workflow with JSON serialization and business transition tests

Target Audience

- Java developers in financial systems
- Financial integration engineer
- Financial backend developer

Prerequisites

- Proficiency in object-oriented programming in Java and exception handling
- Knowledge of Maven dependencies and basic commands for compiling a project
- Ability to read and manipulate data in JSON format within an application
- General understanding of the financial transaction lifecycle, counterparties, and notional value

Technical Prerequisites

- Computer with at least 8 GB of RAM and 5 GB of available disk space
- A development environment with JDK 17 and Maven 3.9 installed and accessible via the command line
- IntelliJ IDEA or Eclipse IDE configured to import and run a Maven project
- Stable internet connection allowing for the download of dependencies from Maven Central and access to learning resources
- Starter project provided with a fixed version of CDM Java and JUnit 5, as well as FpML and JSON examples

CDM Training Program: Java Post-Trade

[Day 1 - Morning]

From the business model to Java objects

- The role of the Common Domain Model and the relationship between products, transactions, and post-trade events
- Setting up the Maven project, adding the cdm-java dependency, and locating the generated packages
- Reading Trade and TradeState objects, counterparties, identifiers, and quantities
- Constructing objects using builders and distinguishing between mutable objects and constructed instances
- Initializing the runtime with Guice and CdmRuntimeModule to access CDM services

- Hands-on workshop: Initialize the main application, construct a transaction state from a provided example, and explore its business attributes.

[Day 1 - Afternoon]

FpML integration and data validation

- Reading an FpML example and identifying data useful for CDM representation
- Building an FpML-to-CDM mapping focused on the fields from the educational case study
- Managing references, party identifiers, and data to be enriched
- Executing CDM validations, checking cardinalities, and analyzing business conditions
- JSON serialization and deserialization with the CDM mapper, preserving metadata and selecting the format
- Hands-on workshop: Populating the application from an FpML extract, correcting validation errors and verifying a JSON round-trip on the resulting state.

[Day 2 - Morning]

Business events and partial termination

- Organizing business transitions around pre- and post-event states
- Relationship between Instruction, PrimitiveInstruction, and BusinessEvent
- Calling CDM functions and constructing an event with Create_BusinessEvent
- Modeling a partial termination by changing the quantity and verifying the remaining notional amount
- Verifying the event’s validity and validating the resulting states
- Hands-on workshop: Applying a partial termination to the imported transaction and writing JUnit tests to verify the reduction in notional value and the maintenance of the active transaction.

[Day 2 - Afternoon]

Novation and tested post-trade workflow

- Principles of novation, outgoing counterparty, incoming counterparty, and remaining counterparty
- Composition of the `split`, `quantityChange`, and `partyChange` primitives for a partial novation
- Verification of retained quantities, identifiers, and counterparties for the resulting transactions
- Assembling the post-trade workflow, validating inputs, executing events, and storing final states in JSON
- JUnit tests for transitions, invalid data, and business invariants after each event
- Hands-on workshop: Finalize the end-to-end application by chaining together FpML import, validation, and termination
  partial and partial novation, then test the resulting states and their JSON serialization.

Target Audience

This training is intended for both individuals and companies—large and small—

wishing to train their teams in a new, advanced IT technology or to acquire specific business knowledge or modern methods.

Assessment at the Start of Training

The pre-training assessment complies with Qualiopi quality standards. Upon final registration, the learner receives a self-assessment questionnaire that allows us to evaluate their estimated proficiency in various types of technologies, as well as their expectations and personal goals for the upcoming training, within the limits imposed by the selected format. This questionnaire also allows us to anticipate certain connection or internal security issues within the company (intra-company or virtual classroom) that could pose challenges for monitoring and ensuring the smooth operation of the training session.

Teaching Methods

Hands-On Training: 60% Practical, 40% Theoretical. Training materials distributed in digital format to all participants.

Organization

The course alternates between theoretical input from the instructor—supported by examples and reflection sessions—and group work.

Assessment

At the end of the session, a multiple-choice quiz is administered to verify that participants have successfully acquired the skills.

Certification

A certificate will be issued to each trainee who has completed the entire training program.

Training organization registered under number 11 75 54743 75. This registration does not constitute state accreditation.
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