# CodeScene integration report

This document describes information on CodeScene and how the project utilized it.

## Introduction

CodeScene is a software tool code analysis by a Swedish Company CodeScene (CodeScene, n.d.-a). It offers quality metrics like level of repetitiveness, code complexity and low cohesion (CodeScene, n.d.-b)​. The way by which CodeScene aims to differentiate itself from the other static code analysis tools is with its advanced code health metrics, an aggregation of selected other metrics to give information on knowledge distribution, potential refactoring targets and change coupling (CodeScene, n.d.-c).

## Methods

### Plans

CodeScene provides different subscription based plans, a free trial and community edition for open-source software. It can be hosted on-premises, or purchased as a Software as a Service (SaaS), in which case CodeScene (the company) hosts the service on their servers (CodeScene, n.d.-d).

### CodeScene use

The main objective for CodeScene use for the project is to produce software quality evaluation results both to the final report, and for later use in LLM-assisted code quality evaluation.

To this end, we use CodeScene Enterprise free trial, which is an evaluation period lasting for 14 days. Although there might have been other methods to get a license, we evaluated this to be a satisfactory way to move forward, considering the limited scope of the project.

CodeScene provides instructions for service setup and use through their docs (CodeScene, n.d.-e). Due to the wide application of Docker Compose in our project, we use the instructions for the docker compose. The main points of the setup and use are:

* Run the codescene through docker compose
* Generate SSH key and add public portion of that to the Github user with access to our repository (Nazanin, n.d.) and the Apache repository (Apache foundation, n.d.).
* Setup free trial through the locally hosted web service
* Connect the Github repository
* Run the analysis through CodeScene user interface

This workflow was applicable to both our project (llm-message-dispatch tool) and the freely-selectable Apache foundation project (commons-jexl).

### Results

2 analyses were produced with CodeScene, one for the llm-message-dispatch-tool and one for the commons-jexl project. See Figure 1 and Figure 2, respectively.

We attempted to utilize the REST API made available by the self-hosted CodeScene distribution, but were able to produce only summaries of analyses with it, which were inadequate in automation of LLM runs for code-quality issue identification. We opted to save these analyses to the Github repository anyway. They are available in path: “Deliverables/code\_analysis\_reports\_codescene”.

Analysis of the results is available in the main project report, and the extensive text reports are available in the Github repository.

A screenshot of a computer

AI-generated content may be incorrect.

Figure 1. LLM Message Dispatcher CodeScene analysis dashboard result

A screenshot of a computer

AI-generated content may be incorrect.

Figure 2. Commons-jexl CodeScene analysis dashboard result

## References

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