Project Intermediate Report

Software Reengineering

Van Muylder Ben & Geeraert Lander

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0 Introduction

1 Tools Used

First and foremost we want to mention that often use Jetbrains IntelliJ and Codescene as a starting point as they both provide functionality for multiple of the below mentioned subsections.

1.1 Duplicate Code

As an initial tool, we'll use IntelliJ (which provides simple assisting messages when it detects duplicate code) on the relevant parts of the code. Furthermore we'll use iClones to help us with further detection of duplicate code.

1.2 Metrics and Visualisation

For metrics and visualisation (as well as other things) we will mostly be using Codescene.

1.3 Mining Repositories

We used Gsource, but as this mostly only provides a visual interactive history of your repository, this tool will be of no further use to us.

We'll also use Codescene for this.

1.4 Refactoring Assistants

As a baseline, we'll use IntelliJ to help us refactor (and specify what and how we should refactor) the project as well as Codescene which gives clear indications on what it thinks should be refactored. We will also have to lookup whether the assistance provided by codescene is relevant for our assignment.
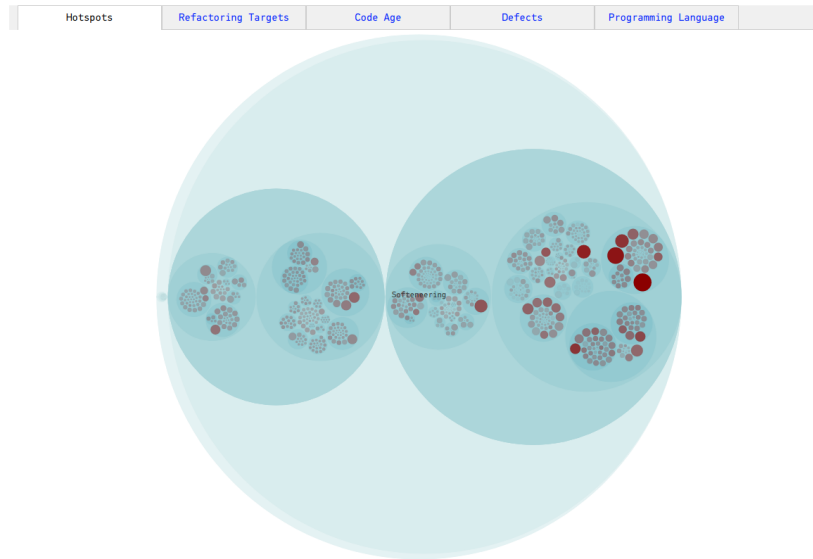
Figure 1: Codescene Hotspots

1.5   Test Coverage and Dynamic Analysis

For test coverage, we plan on using LittleDarwin to perform mutation testing on the project. However, during our assignments for the Software Testing course, we already used LittleDarwin for that project, and even on such a small project it took a fairly long while to run LittleDarwin. Because of this, and because of the other tasks, assignments... we have, we have not yet used LittleDarwin.

We also used cobertura (which was already present in the project) to get an initial overview of the test coverage.

Package	# Classes	Line Coverage	Branch Coverage	Complexity
All Packages	658	57%	48%	2.67
org.jfree.chart	25	50%	39%	2.474
org.jfree.chart.annotations	20	59%	52%	2.389
org.jfree.chart.axis	47	58%	43%	3.025
org.jfree.chart.block	21	70%	60%	2.81
org.jfree.chart.date	3	41%	24%	2.94
org.jfree.chart.editor	12	0%	0%	2.098
org.jfree.chart.encoders	6	0%	0%	1.212
org.jfree.chart.entity	14	36%	29%	2.071
org.jfree.chart.event	19	74%	N/A	1
org.jfree.chart.imagemap	7	61%	64%	1.944
org.jfree.chart.labels	36	59%	45%	2.237
org.jfree.chart.needle	10	31%	34%	2.703
org.jfree.chart.panel	3	12%	3%	3.821
org.jfree.chart.plot	45	69%	59%	2.781
org.jfree.chart.plot.dial	18	59%	61%	1.95
org.jfree.chart.renderer	15	63%	50%	2.462
org.jfree.chart.renderer.category	27	55%	36%	3.049
org.jfree.chart.renderer.xy	44	41%	28%	3.072
org.jfree.chart.resources	1	0%	N/A	1
org.jfree.chart.text	9	75%	53%	3
org.jfree.chart.title	10	56%	38%	2.744
org.jfree.chart.ui	24	30%	33%	2.554
org.jfree.chart.urls	13	78%	64%	3.143
org.jfree.chart.util	32	48%	40%	3.605
org.jfree.data	27	80%	75%	2.811
org.jfree.data.category	7	81%	66%	2.882
org.jfree.data.function	5	80%	59%	1.92
org.jfree.data.gantt	6	66%	59%	2.022
org.jfree.data.general	26	72%	67%	3.244
org.jfree.data.io	1	0%	0%	2.667
org.jfree.data.jdbc	3	0%	0%	4.452
org.jfree.data.json	1	0%	0%	4.5
org.jfree.data.json.impl	5	0%	0%	5.722
org.jfree.data.resources	6	16%	N/A	1
org.jfree.data.statistics	18	75%	61%	2.54
org.jfree.data.time	27	64%	49%	2.373
org.jfree.data.time.ohlc	4	67%	66%	1.854
org.jfree.data.xml	9	0%	0%	2.087
org.jfree.data.xy	52	72%	65%	2.063

Figure 2: Cobertura Coverage Report

1.6   Feature Location and Traceability