

Deliverable #1

The Boyoz

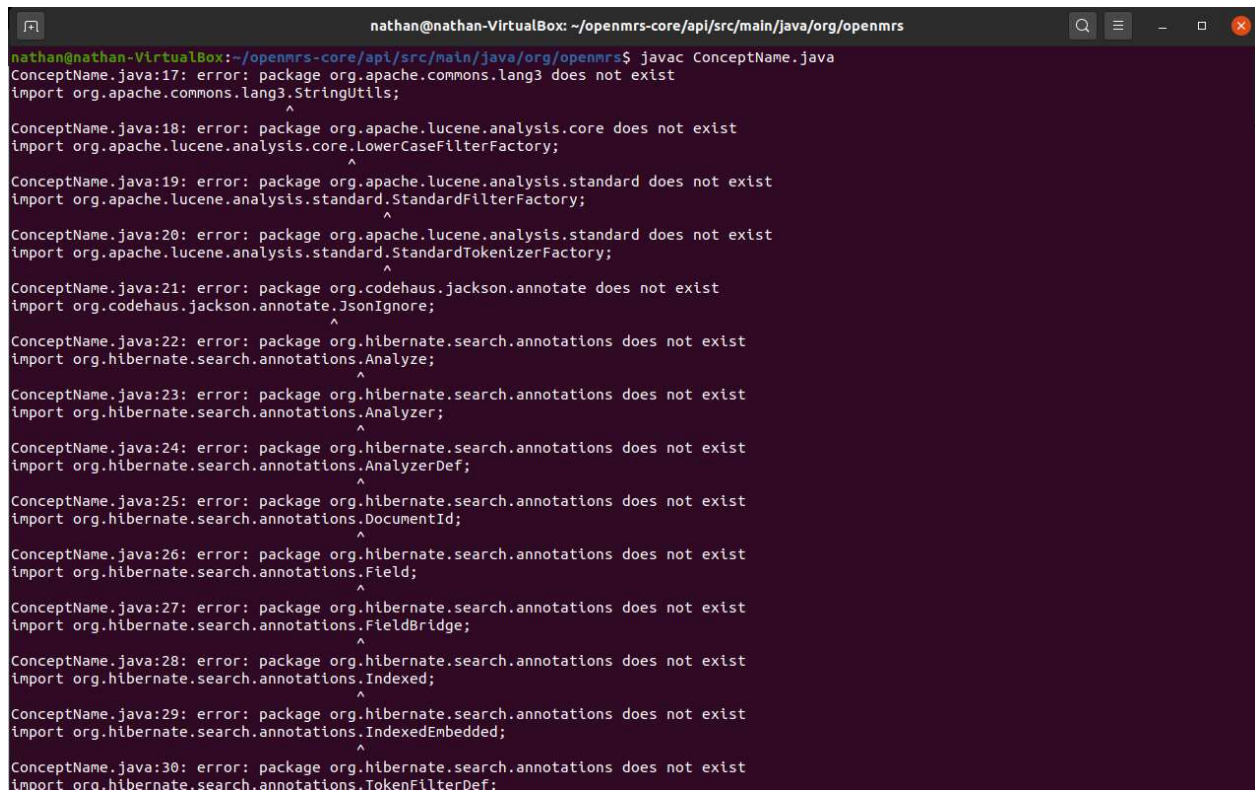
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Tanaguru Contrast Finder vs OpenMRS:

After hopefully finally understanding just exactly what we are expected to do with our choice of open source project for this class, we are considering switching what project we are going to test. While digging through the files of OpenMRS looking for java files that we could compile and test we came into quite a few issues. The main issue being that we seemingly cannot compile individual files. When typing “javac FileName.java” into terminal the output nearly always looks like this

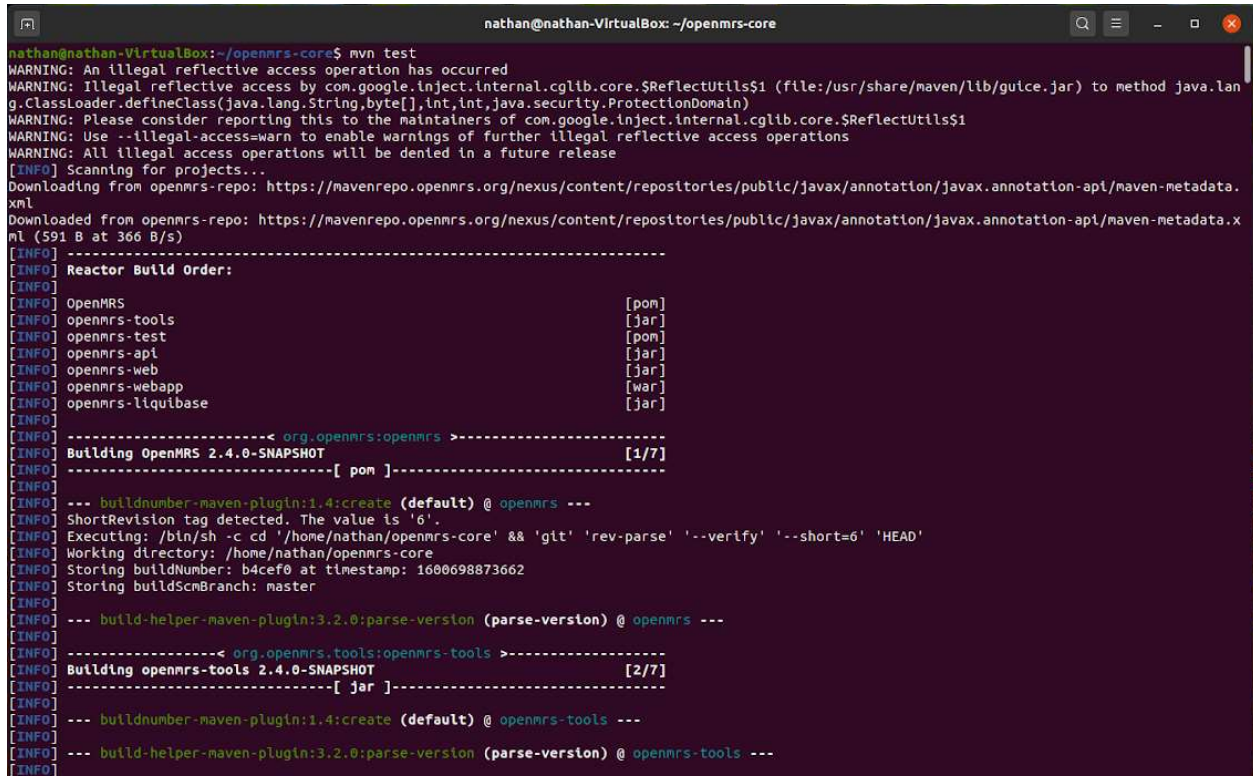
A screenshot of a terminal window with a dark background. The title bar shows the user 'nathan@nathan-VirtualBox' and the path '~/openmrs-core/api/src/main/java/org/openmrs'. The terminal shows the command 'javac ConceptName.java' being executed. Below the command, there are 12 lines of error messages, each starting with 'ConceptName.java:17:' through 'ConceptName.java:30:'. Each error message states 'error: package org.apache.commons.lang3 does not exist' followed by an import statement for a class that does not exist. The errors are: 17: org.apache.commons.lang3.StringUtils; 18: org.apache.lucene.analysis.core.LowerCaseFilterFactory; 19: org.apache.lucene.analysis.standard.StandardFilterFactory; 20: org.apache.lucene.analysis.standard.StandardTokenizerFactory; 21: org.codehaus.jackson.annotate.JsonIgnore; 22: org.hibernate.search.annotations.Analyze; 23: org.hibernate.search.annotations.Analyzer; 24: org.hibernate.search.annotations.AnalyzerDef; 25: org.hibernate.search.annotations.DocumentId; 26: org.hibernate.search.annotations.Field; 27: org.hibernate.search.annotations.FieldBridge; 28: org.hibernate.search.annotations.Indexed; 29: org.hibernate.search.annotations.IndexedEmbedded; 30: org.hibernate.search.annotations.TokenFilterDef; Each error message is followed by an upward-pointing arrow (^) indicating the line number of the error.

```
nathan@nathan-VirtualBox: ~/openmrs-core/api/src/main/java/org/openmrs
nathan@nathan-VirtualBox:~/openmrs-core/api/src/main/java/org/openmrs$ javac ConceptName.java
ConceptName.java:17: error: package org.apache.commons.lang3 does not exist
import org.apache.commons.lang3.StringUtils;
                           ^
ConceptName.java:18: error: package org.apache.lucene.analysis.core does not exist
import org.apache.lucene.analysis.core.LowerCaseFilterFactory;
                           ^
ConceptName.java:19: error: package org.apache.lucene.analysis.standard does not exist
import org.apache.lucene.analysis.standard.StandardFilterFactory;
                           ^
ConceptName.java:20: error: package org.apache.lucene.analysis.standard does not exist
import org.apache.lucene.analysis.standard.StandardTokenizerFactory;
                           ^
ConceptName.java:21: error: package org.codehaus.jackson.annotate does not exist
import org.codehaus.jackson.annotate.JsonIgnore;
                           ^
ConceptName.java:22: error: package org.hibernate.search.annotations does not exist
import org.hibernate.search.annotations.Analyze;
                           ^
ConceptName.java:23: error: package org.hibernate.search.annotations does not exist
import org.hibernate.search.annotations.Analyzer;
                           ^
ConceptName.java:24: error: package org.hibernate.search.annotations does not exist
import org.hibernate.search.annotations.AnalyzerDef;
                           ^
ConceptName.java:25: error: package org.hibernate.search.annotations does not exist
import org.hibernate.search.annotations.DocumentId;
                           ^
ConceptName.java:26: error: package org.hibernate.search.annotations does not exist
import org.hibernate.search.annotations.Field;
                           ^
ConceptName.java:27: error: package org.hibernate.search.annotations does not exist
import org.hibernate.search.annotations.FieldBridge;
                           ^
ConceptName.java:28: error: package org.hibernate.search.annotations does not exist
import org.hibernate.search.annotations.Indexed;
                           ^
ConceptName.java:29: error: package org.hibernate.search.annotations does not exist
import org.hibernate.search.annotations.IndexedEmbedded;
                           ^
ConceptName.java:30: error: package org.hibernate.search.annotations does not exist
import org.hibernate.search.annotations.TokenFilterDef;
                           ^
```

When we ran into this we decided to take a step back at our original choice of project: Tanaguru Contrast Finder. Our reason for not selecting the contrast finder originally was because we were having trouble deploying it with Tomcat. Compiling it was very easy. Compiling and running individual java classes also works fine and running them is very simple. If this is what we are to create test cases for and automate for the next deliverables. Unless there is something we are not understanding, it is likely best that we switch our choice of project to the Tanaguru Contrast finder.

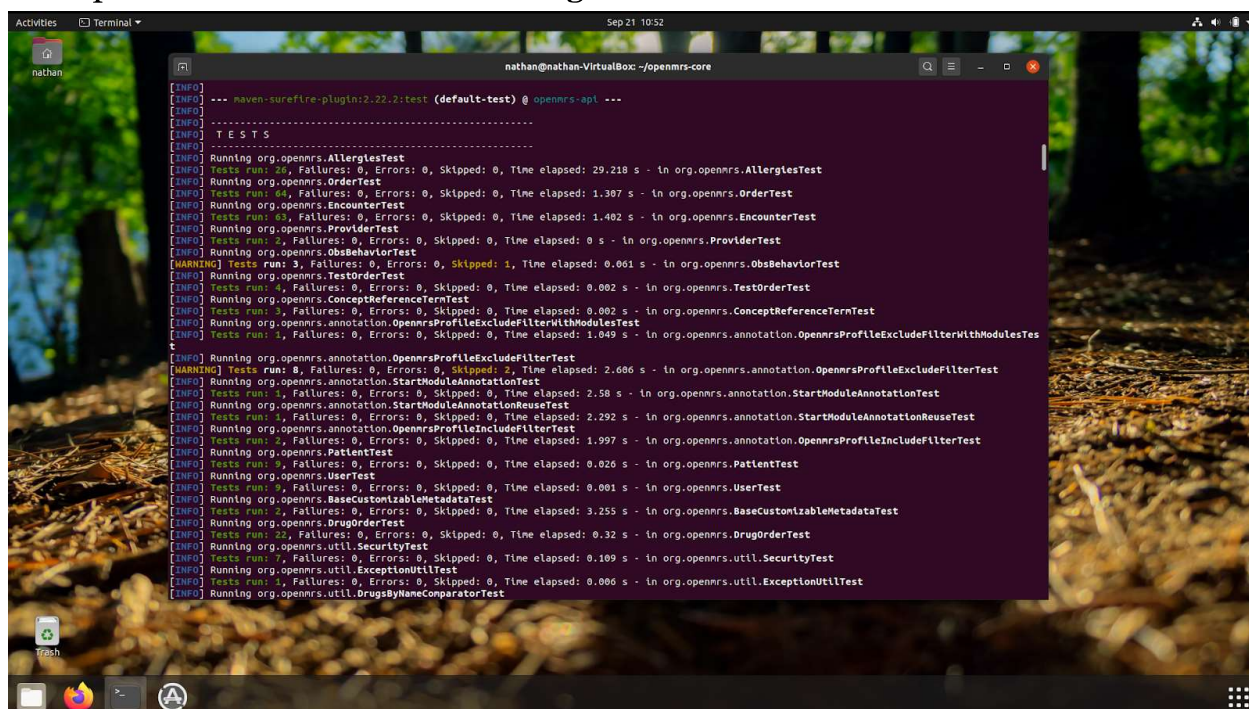
Testing OpenMRS: Here are some screenshots of us running the maven test command in openMRS. The same can easily be done with the Contrast Finder

Starting the testing process:



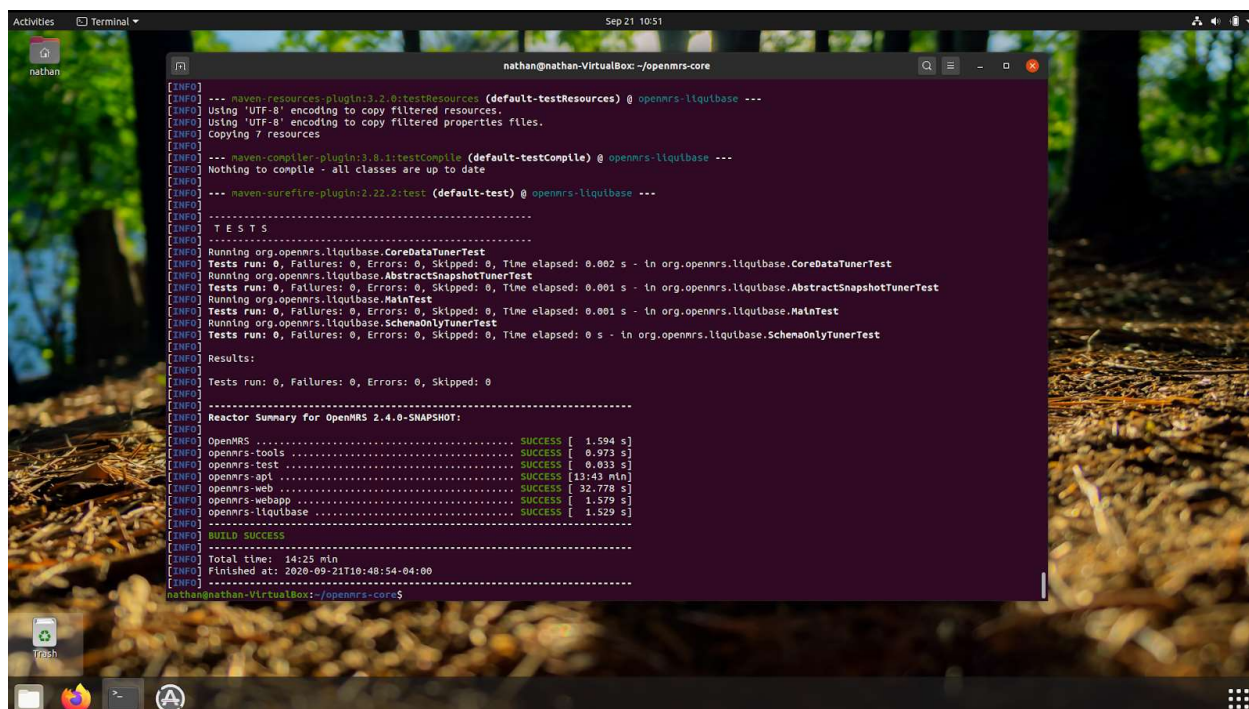
```
nathan@nathan-VirtualBox: ~/openmrs-core
nathan@nathan-VirtualBox:~/openmrs-core$ mvn test
WARNING: An illegal reflective access operation has occurred
WARNING: Illegal reflective access by com.google.inject.internal.cglib.core.$ReflectUtils$1 (file:/usr/share/maven/lib/guice.jar) to method java.lang.ClassLoader.defineClass(java.lang.String,byte[],int,int,java.security.ProtectionDomain)
WARNING: Please consider reporting this to the maintainers of com.google.inject.internal.cglib.core.$ReflectUtils$1
WARNING: Use --illegal-access=warn to enable warnings of further illegal reflective access operations
WARNING: All illegal access operations will be denied in a future release
[INFO] Scanning for projects...
Downloading from openmrs-repo: https://mavenrepo.openmrs.org/nexus/content/repositories/public/javax/annotation/javax.annotation-api/maven-metadata.xml
Downloaded from openmrs-repo: https://mavenrepo.openmrs.org/nexus/content/repositories/public/javax/annotation/javax.annotation-api/maven-metadata.xml (591 B at 366 B/s)
[INFO] -----
[INFO] Reactor Build Order:
[INFO]
[INFO] OpenMRS [pom]
[INFO] openmrs-tools [jar]
[INFO] openmrs-test [pom]
[INFO] openmrs-api [jar]
[INFO] openmrs-web [jar]
[INFO] openmrs-webapp [war]
[INFO] openmrs-liquibase [jar]
[INFO]
[INFO] -----< org.openmrs:openmrs >-----
[INFO] Building OpenMRS 2.4.0-SNAPSHOT [1/7]
[INFO] -----[ pom ]-----
[INFO]
[INFO] --- buildnumber-maven-plugin:1.4:create (default) @ openmrs ---
[INFO] ShortRevision tag detected. The value is '6'.
[INFO] Executing: /bin/sh -c cd '/home/nathan/openmrs-core' && 'git' 'rev-parse' '--verify' '--short=6' 'HEAD'
[INFO] Working directory: /home/nathan/openmrs-core
[INFO] Storing buildNumber: b4cef0 at timestamp: 1600698873662
[INFO] Storing buildScmBranch: master
[INFO]
[INFO] --- build-helper-maven-plugin:3.2.0:parse-version (parse-version) @ openmrs ---
[INFO]
[INFO] -----< org.openmrs.tools:openmrs-tools >-----
[INFO] Building openmrs-tools 2.4.0-SNAPSHOT [2/7]
[INFO] -----[ jar ]-----
[INFO]
[INFO] --- buildnumber-maven-plugin:1.4:create (default) @ openmrs-tools ---
[INFO]
[INFO] --- build-helper-maven-plugin:3.2.0:parse-version (parse-version) @ openmrs-tools ---
[INFO]
```


Example of an individual test running:



The screenshot shows a terminal window titled "nathan@nathan-VirtualBox: ~/openmrs-core". The user has executed the command `mvn surefire-plugin:2.22.2:test (default-test) @ openmrs-api`. The output displays a series of test results for various classes in the `org.openmrs` package. Each test entry includes the class name, the number of tests run, failures, errors, and skipped tests, along with the time elapsed. For example, `org.openmrs.AllergiesTest` shows 29 tests run, 0 failures, 0 errors, and 0 skipped tests, taking 29.218 seconds. The tests listed include `org.openmrs.AllergiesTest`, `org.openmrs.OrderTest`, `org.openmrs.EncounterTest`, `org.openmrs.ProviderTest`, `org.openmrs.ObsBehaviorTest`, `org.openmrs.TestOrderTest`, `org.openmrs.ConceptReferenceTermTest`, `org.openmrs.annotation.OpenmrsProfileExcludeFilterWithModulesTest`, `org.openmrs.annotation.OpenmrsProfileExcludeFilterTest`, `org.openmrs.annotation.StartModuleAnnotationTest`, `org.openmrs.annotation.StartModuleAnnotationReuseTest`, `org.openmrs.annotation.OpenmrsProfileIncludeFilterTest`, `org.openmrs.PatientTest`, `org.openmrs.UserTest`, `org.openmrs.BaseCustomizableMetadataTest`, `org.openmrs.DrugOrderTest`, `org.openmrs.util.SecurityTest`, and `org.openmrs.util.ExceptionUtilTest`. The terminal also shows a "WARNING" for `org.openmrs.ObsBehaviorTest` where 1 test was skipped.

End of testing output:



The screenshot shows the continuation of the terminal output from the previous screenshot. It displays the results of the `mvn surefire-plugin:2.22.2:test (default-test) @ openmrs-liquibase` command. The output shows that all tests passed successfully. For example, `org.openmrs.liquibase.CoreDataTunerTest` shows 0 tests run, 0 failures, 0 errors, and 0 skipped tests, taking 0.002 seconds. The tests listed include `org.openmrs.liquibase.CoreDataTunerTest`, `org.openmrs.liquibase.AbstractSnapshotTunerTest`, `org.openmrs.liquibase.MainTest`, and `org.openmrs.liquibase.SchemaOnlyTunerTest`. The terminal also shows a "Results:" section indicating that all tests passed. Finally, a "Reactor Summary for OpenMRS 2.4.0-SNAPSHOT:" is displayed, showing the build status for various modules: `OpenMRS`, `openmrs-tools`, `openmrs-test`, `openmrs-api`, `openmrs-web`, `openmrs-webspp`, and `openmrs-liquibase`. All modules are marked as "SUCCESS". The build is summarized as "BUILD SUCCESS" and "Total time: 14:25 min". The terminal also shows the command `mvn resources-plugin:3.2.0:testResources (default-testResources) @ openmrs-liquibase` and `mvn compiler-plugin:3.8.1:testCompile (default-testCompile) @ openmrs-liquibase` being executed.

Gained Experiences:

- Understanding Virtual Box software for virtual machines
 - allocating enough resources to the virtual machine
 - learning linux
- Working as a team
 - coordinating time to work together
 - splitting up work between members
- Installing and building packages from the terminal
 - compiling and running files through terminal to
- Building and compiling the open source project (OpenMRS)
- Running test cases
- Using Github Wiki
- Reinforcing git and github use

Project Update: With the help of Dr. Bowring, we will decide between OpenMRS and Tanaguru Contrast Finder at the conclusion of this deliverable. If we choose to move one with OpenMRS we must find a way to compile the java files successfully and create a driver for it. If we choose Tanaguru then we will be one step ahead and already have the code compiled. We would just need to create the driver to test the code.