



# Homework 5 Report

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**Team being tested: Team-109**

## 1. Installation

The team did a great job with making the installation process easy. I was able to build and run the application on my local machine without any issues. The README file was helpful and the steps provided were good enough to carry out this step.

## 2. Tests

The application lacks automation tests so it would be difficult to divulge bugs that were found using manual testing. The team is certainly on the right track otherwise. They seem to test everything they wrote. But they need to make sure they are covering all the instructions and branches as their condition or statement coverage is not comprehensive. They only have one test for testing similarity between two submissions. This doesn't cover the boundary conditions like validating the text or a python file (they could throw an error as ANTLR can do this for them) or include performance testing using large python files.

## 3. Code Review

Overall the code is modular and I like the approach of the code is written according to the interfaces defined. All the major components interact through the interfaces. The algorithms implemented are impressive. That being said, I was able to find a few issues with the code. There are a few static analysis issues present that might cause to be a problem as the application expands. Issues like inappropriate access modifiers being used may cause a security threat. And then there are a few minor issues like expected values in the assets function arguments should be before the actual value. One other major issue is that there are error messages (logger info etc.) and magic numbers embedded all over the code. I was also able to find empty classes with no enclosing comments for the reason of them being there. The documentation is not particularly helpful on the backend of the code. Some without proper Javadoc. A ticket has been raised for all issues mentioned.

## 4. UX/UI

This is where the application falls of. The UX for the application is below par. The UI is unresponsive and not aesthetically pleasing either. It doesn't update the user with the operations it is currently performing and thus the user has no idea of what is happening. The application does a lot of processing when comparing large python files and thus the other functions of the applications are left unlocked. Then pressing a new button can start a new process and the results aren't displayed and the application seems to halt.

## 5. Bugs

A few major issues I found was that the password isn't encrypted. This can be found by using the inspect functionality of the browser and see how the password is passed to the application. A few bug tickets that were raised were discovered manually. Another bug that I found is that the application is unable to compare "large" python files. This was done by constantly feeding the application large python file till it breaks. The threshold was around ~500 LOC. Only one of the strategy works for large python files. A few other test cases were uploading java code in python files. Uploading empty files. Distributing code of one file across two and then checking for plagiarism.

### APPENDIX - ISSUES OR SUGGESTIONS IDENTIFIED

In addition, please include a list of issues filed (Title, SHORT summary, severity level, date filed)

Title	SHORT Summary	Severity level	Date filed
No response on wrong username/password.	The application seems to be hang/doesn't respond upon entering wrong username/password.	High	01/Apr/18 11:39 AM
Logs out upon refresh	I am logged out of the system when I hit refresh.	High	01/Apr/18 11:41 AM
"All" button seems to do nothing.	When uploading files, If "All" is selected, the application doesn't respond.	High	01/Apr/18 11:47 AM
No respond upon uploading non-python files.	The application doesn't work/respond if non-python files are uploaded.	High	01/Apr/18 11:49 AM
Applications halts when too many python files are uploaded	The application halts when too many python files per user is uploaded. I have tested this with 20 python files. I am able to perform other actions while this processing is ongoing.	High	01/Apr/18 11:56 AM
Login without username/password	When you click on the back button, it takes you to the log in screen and then without entering user name and password you can log back in and use the application.	High	12/Apr/18 6:30 PM
Renaming strategy error.	When running the 'renaming' strategy on	High	12/Apr/18 6:56 PM

	two python files that are exactly the same and is about 800 LOC gives a heap space error.		
Local strategy error	Same as above but different strategy	High	12/Apr/18 6:58 PM
UI unresponsive.	No feedback to the user by the application of what operations are being performed.	High	12/Apr/18 8:05 PM
File update not reflected	If I change the python file I had run before on the application, any changes made to the file are not incorporated in the new run	High	12/Apr/18 8:36 PM
Unused imports and variables warnings	warnings of unused variable and imports in the java classes.	High	13/Apr/18 3:30 PM
Insufficient Javadocs	Java docs doesn't capture the essence of the code.	High	13/Apr/18 3:37 PM
Sonar lint warnings	Static analysis of the code says that there are critical issues.	High	13/Apr/18 3:41 PM
test coverage	JUnit test coverage is only 46%. Please refer to the report attached.	High	13/Apr/18 3:45 PM
Test without asserts	Test that simply does nothing or tests that just calls the service present in.	High	13/Apr/18 3:54 PM
magic numbers	There are a few magic numbers in form of strings present.	High	13/Apr/18 5:38 PM
Empty classes/tests	No nested comments explaining their purpose.	High	13/Apr/18 6:01 PM
Password not encrypted.	The password is not encrypted. Passed as string throughout the code.	Highest	13/Apr/18 6:12 PM