

# Tanaguru Contrast Finder Software Testing Framework

Team name: WORK

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## Introduction

For CSCI362: Software Engineering, we were given the task of finding an open source software and designing a testing framework to test the methods in the software.

The purpose of the project that lasted the whole semester was to give us valuable experience with open source software and testing, as well as to show us the importance of good documentation.

Tanaguru contrast finder is a web app that finds a valid background/foreground color contrast for accessibility.



## Framework

Our script, *runAllTests.py*, is ran from the command line. It reads through each test in the *testCases* folder and runs each individual test. It then compares the value returned to the oracle that we determined and specified in the test case text file. At the end, an html file is opened with the output of each test.

```
omer@ubuntu16:~/Downloads/Work-master/TestAutomation/scripts$ cd Downloads/
omer@ubuntu16:~/Downloads$ cd Work-master/
omer@ubuntu16:~/Downloads/Work-master$ cd TestAutomation/
omer@ubuntu16:~/Downloads/Work-master/TestAutomation$ cd scripts/
omer@ubuntu16:~/Downloads/Work-master/TestAutomation/scripts$ python runAllTests.py
java colorConverterDriver getSaturation 0,0,0 0
java colorConverterDriver getSaturation 100,200,123 0.5
java contrastCheckerDriver getLuminosity Error
java contrastCheckerDriver getLuminosity 255,255,255 1
java colorConverterDriver getBrightness Error
java contrastCheckerDriver distanceColor 100,100,100 100,100,100 0
java colorConverterDriver getSaturation Error
java distanceColorDriver calculate 100,100,100 100,100,100 0.0
java contrastCheckerDriver distanceColor 100,100,100 Error
java contrastCheckerDriver getLuminosity 200,50,123 0.1599062493613899
java contrastCheckerDriver distanceColor 100,100,100 200,50,123 114.14464507807626452342156269385
java colorConverterDriver getBrightness 100,200,123 0.78431374
java distanceColorDriver calculate 100,100,100 Error
java colorConverterDriver getSaturation 255,255,255 0
java colorConverterDriver getHue 0,0,0
java colorConverterDriver getHue Error
java colorConverterDriver getHue 255,255,255 0
java colorConverterDriver getBrightness 255,255,255 1
java distanceColorDriver calculate 0,0,0 255,255,255 367.77
java distanceColorDriver calculate Error
java contrastCheckerDriver distanceColor 0,0,0 255,255,255 441.672955930063709849498817084
java distanceColorDriver calculate 100,100,100 200,50,123 96.09
java colorConverterDriver getSaturation 0,0,0 0
java contrastCheckerDriver getLuminosity 0,0,0 0
java contrastCheckerDriver distanceColor Error
omer@ubuntu16:~/Downloads/Work-master/TestAutomation/scripts$
```

## Fault Injections

Injecting faults into the Tanaguru Contrast Finder code was really interesting. We had to go into the source code and make it so that the code will fail a few of our tests, but not all.

## Reflections

After completing this project we can all agree that good documentation is very important. We learned how to create a driver, make a script to run tests, and how to add faults to our code. If we had the chance to work on this project again we would improve our communication as a team and try to manage our time better.

Team "Work" Unit Tests						
ID	Class	Method	Requirement	Input	Oracle	Status
#020	/contrast-finder-utils/src/main/java/org/openstills/colorConverter.java	getSaturation	Successes when passed black	0,0,0	0	true
#021	/contrast-finder-utils/src/main/java/org/openstills/colorConverter.java	getSaturation	Successes when passed a non-white/black	100,200,123	0.5	true
#010	/contrast-finder-utils/src/main/java/org/openstills/contrastChecker.java	getLuminosity	Fails when not passed a color		Error	true
#013	/contrast-finder-utils/src/main/java/org/openstills/contrastChecker.java	getLuminosity	Successes when passed white	255,255,255	1	true
#014	/contrast-finder-utils/src/main/java/org/openstills/colorConverter.java	getBrightness	Fails when passed empty argument		Error	true
#007	/contrast-finder-utils/src/main/java/org/openstills/contrastChecker.java	distanceColor	Works when passed the same color	100,100,100	0	true