

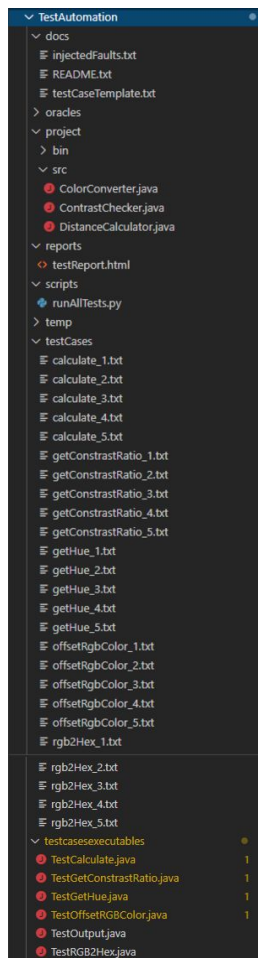
Deliverable 3

The Framework

Architectural Description

The test framework script is executed from the `TestAutomation` folder, which is the top level directory for the framework. The controlling python script is in the `scripts` directory, and it has to navigate to the `testCases` directory which holds the test case specifications to execute them. The `testcasesexecutables` directory contains auxiliary code that executes the tests on the methods and writes the results back to the files in the `testCases` directory. The script then collects this data and writes to a html file in the `reports` directory which is automatically opened by the script when all tests are complete. The `docs` directory has the `README` file in it with the instructions on running the testing code as well as the test case specifications template and instructions for implementing faults into the code. The `project` directory contains the `src` folder which contains the required classes from the original project for the methods being tested.

Directory Structure



Testing Framework Execution

For running the testing framework, we have a python script for iterating through each test case. Java and python are required for running the tests; there have been no issues with newer versions. The python script is executed by typing “python scripts/runAllTests.py” into the command line inside the TestAutomation directory of the project. The script will retrieve the components

it needs to construct the command to launch the driver from each test case file, the drivers launched will record the results of the test in the text file. New test cases are easy to implement as long as they follow the proper test case template we have designed; the script requires no other information. The script then grabs the new data from the text file and writes it to the results HTML file, where it formats it in a way that is easy to read and understand and opens it in a browser. The script will automatically detect if the required java files are compiled or not and compile them as necessary. If the java files need to be recompiled, such as when implementing faults, simply add the “c” parameter at the end of the command and the script will do so.

Report

After the process of planning, it was now time to work on some actual code. Our group had no issues generating outputs from the methods we chose to test but we did have issues capturing the outputs and displaying them in an easy to read fashion. First, we tried to pipe the results from the chosen methods to a text file but were ultimately unsuccessful. Instead, we wrote a program that writes the results of each method back to the text file, eliminating any need for extra result files. Then, the relevant data from the text file is written and formatted into the results HTML file in a way that is easy to read and understand. The work we had to learn the most for was working with the java packages system. We had not

had experience with this system before and needed to use it to have a properly organized framework rather than throwing all java files into one directory.