Test Plan

Testing Process:
We will be testing multiple methods in the ColorConverter.java class within Tanaguru's system. To do this, we will be constructing driver classes for each method being tested, then feeding information into the drivers through a script that will read through our test case files and compare the driver output to the expected output.

Requirement Traceability:
getBrightness requires a Color class as input and returns a float value. Test Cases 1-5

getSaturation requires a Color class as input and returns a float value. Test Cases 6-10

getHue requires a Color class as input and returns a float value. Test Cases 11-15

rgb2Hex requires a Color class as input and returns a string. Test Cases 16-20

hex2Rgb requires a hex string of a color as input and returns a string. Test Cases 21-2

Tested Items:
The tests will be on getBrightness(Color color), getSaturation(Color color), getHue(Color color), rgb2Hex(Color color), and hex2Rgb(String colorStr).

Testing Schedule:
Every Tuesday and Thursday 4:00pm - 4:50pm

Test Recording Procedures:
Tests results will be fed into an html file and then displayed in a browser for easy readability and storage.

Hardware and software Requirements:
Linux System or VirtualBox 6.1 - https://www.virtualbox.org/
Git - https://git-scm.com/downloads
Maven - https://maven.apache.org/download.cgi
OpenJDK 14.01 - https://jdk.java.net/14/
Tanaguru - https://github.com/Tanaguru/Contrast-Finder

Constraints:
Limited amount of time. Unfamiliarity with the Java color class and Tanaguru system. Limited team size.

Test Cases:

Test Case Template:
Line 1: Test Case ID #
Line 2: Description of method
Line 3: Class Name
Line 4: Driver Name
Line 5: Driver Input
Line 6: Driver Expected Output
Line 7: Method Name

Test Case Expected Outputs:
getBrightness will return 50.0 when the color (GREEN) is input
getBrightness will return 100.0 when the color (RED) is input
getBrightness will return 50.0 when the color (BLUE) is input
getBrightness will return 0.0 when the color (BLACK) is input
getBrightness will return 50.2 when the color (PURPLE) is input

getSaturation will return 0.0 when the color (BLACK) is input
getSaturation will return 0.0 when the color (WHITE) is input
getSaturation will return 1.0 when the color (RED) is input
getSaturation will return 1.0 when the color (YELLOW) is input
getSaturation will return 0.946 when a custom color (R: 13 G: 242 B: 135) is input

getHue will return 0.0 when the color (RED) is input
getHue will return 120.0 when the color (GREEN) is input
getHue will return 240.0 when the color (BLUE) is input
getHue will return 0.0 when the color (BLACK) is input
getHue will return 300.0 when the color (PURPLE) is input

rgb2Hex will return #0000FF when the color (0, 0, 255)(BLUE) is input
rgb2Hex will return #00FF00 when the color (0, 255, 0)(GREEN) is input
rgb2Hex will return #FF0000 when the color (255, 0, 0)(RED) is input
rgb2Hex will return #000000 when the color (0, 0, 0)(BLACK) is input
rgb2Hex will return #800080 when the color (128, 0, 128)(PURPLE) is input

hex2Rgb will return (255, 0, 0) when the color #FF0000 (RED) is input
hex2Rgb will return (0, 255, 0) when the color #00FF00 (GREEN) is input
hex2Rgb will return (0, 0, 255) when the color #0000FF (BLUE) is input
hex2Rgb will return (0, 0, 0) when the color #000000(BLACK) is input
hex2Rgb will return (128, 0, 128) when the color #800080(PURPLE) is input