Robotic Artist:Walter
G400 Computer Science, CS39440
Test Plan

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Contents

1 Introduction

This document is going to talk about how to test the Robotic Artist product. These tests include unit tests and the testing specifications that will be used to test the product. This test plan will need to be kept up to date with future development and must make sure that all requirements from the Requirement Specifications are followed.[1]

2 Unit tests

Unit tests allow you to test source code that you would not usually be able to test through visual methods. They work by creating a simulated environment that you can then test the individual methods and see if they give the expected outcomes.

The unit tests are programmed in Python 2.7 using the library Unittest[2]. To run the unit tests altogether, within the terminal run the command 'python run_tests.py'. Within this file is a Test Suite that will run all the unit tests developed for this project. For future development make sure to create unit tests for code that requires it and add the class that is made to the test suite within run_tests.py.

3 Testing specifications

This section is about testing all the requirements have been met and code that cannot be tested with unit testing. These are the Events that occur in the GUI, the plotter plotting what is shown in the GUI and that the ImageProcessor is giving out the correct style of what is wanted.

There are going to be three tables to the testing specification. When testing the product the results will be recorded and written up to be reviewed. The tables can be seen below.

3.1 GUI tests

ID	Test	Test Instructions	Expected Outcome	Actual Outcome	Date	Tester ID
1	Open Application	Open the application 5 times and note any errors.	The application will open and no errors will occour			
2	exit application function	Go to file menu and click 'Exit Application'. Try 3 times. Then try again with the command 'Ctrl+C'.	The function will open a pop-up, asking if you are sure. Then when yes is pressed the application will close and if no is pressed you will be returned to the page you were on.			
3	restart application	Test the function restart application 2 times on each page.	The application will be restart to the video capture page. If on the video capture page, a pop-up will tell say that you cannot restart on this page.			
4	admin login function	go to Admin and then click 'login' 2 times and then try to log in.	A pop-up window will appear that allows the user to log in.			
5	toggle admin view function	Go to the Admin menu and click 'toggle admin view'. Do this 3 times	This should open a window that allows the admin to view the input and output of the program. What is occurring in the application at runtime?			
6	tutorial function	Go to Help menu and click 'tutorial'. Do this 3 times.	The application will open a window that displays instructions on how to use the application given.			

7	Video Capture	Open the application 3 times and check if the video display is working correctly.	The video capture will be displayed with no error.			
8	Checkbox1 test	click if the user can proceed to picture acceptance page. Do this 2 times. Then tick the box and see if you are allowed to proceed. Do this 2 times	when unticked an error message will pop up. When clicked user will go to the picture acceptance page.			
9	Capture Picture button	Tick checkbox 1 and Click the capture image button 4 times.	The user will be taken to the picture acceptance page. The video capture thread has stopped and the picture that was taken is displayed on the picture acceptance page.			
10	Click No; picture acceptance page	Click the no button on the picture acceptance page. Do this 2 times.	When 'no' is pressed a pop-up will turn up. Which asks if you are sure that you did want this picture.			
11	Click Yes; picture acceptance page	Click the no button on the picture acceptance page. Do this 2 times.	This should take you to the style selection page.			
12	Select no styles	Click the continue button without selecting any stlyes.Do this 2 times.	A error message should pop-up, saying no styles have been selected.			
13	Select Multiple styles	Click the continue button with selecting multiple stlyes.Do this 2 times.	A error message should pop-up, saying too many styles have been selected			

14	Select a single style	Click the continue button with selecting only one stlye.Do this for 2 times.	You should be taken to the style acception page. With your picture styled in the style you selected.			
15	Click No; style acceptance page	Click the no button on the style acceptance page. Do this 2 times.	When 'no' is pressed a pop-up will turn up. Which asks if your sure that you done want this picture.			
16	Click Yes; style acceptance page	Click the no button on the style acceptance page. Do this 2 times.	This should take you to the style selection page.			

3.2 Image Processor tests

ID	Test	Test Instructions	Expected Outcome	Actual Outcome	Date	Tester ID
17	Dithering style	select the dithering style and click the continue button. Do this 3 times.	The dithering style will be applied to the picture that was taken from the video capture.			
18	Edge style	select the Edge style and click the continue button. Do this 3 times.	The Edge style will be applied to the picture that was taken from the video capture.			

3.3 Plotter tests

ID	Test	Test Instructions	Expected Outcome	Actual Outcome	Date	Tester ID
19	Dithering plotter	Once Image has been processed. Press 'yes' on the style acceptance page. Do 2 times.	The plotter should go through each coordinate and put the pen up and down and respective locations. When the coordinate has a point right of it, then pen moves to it instead of pulling the pen up and down again.			
20	Edge plotter	Once Image has been processed. Press 'yes' on the style acceptance page. Do 2 times.	The plotter should go to a point and draw a line connecting all the points that are next to that point.			

4 Versions

Version	Description	Date Modified
0.1	Created basic version of the text for unit test and the testing specifications. Then created blank tables. Need to fill in.	25/04/18
0.2	Created testing specifications tables, these go through each test that is needed to be done on the GUI, image processors and the plotter.	26/04/18

References

[1] Matthew Howard (mah60);Requirement Specifications; 25/04/2018
This document talks about the requirements that have been given to robotic artist project. The document can be found in the Appendices for this project.

[2] Python Software Foundation; Unittest; 26/04/2018
https://docs.python.org/3/library/unittest.html

This is the documentation for the Unittest library for python. This was the library that is used for doing unit tests in this project.