Game Design Document For RWM P3 2016-17

Introduction

Story

Aesthetics

Features

Display GUI [ ]

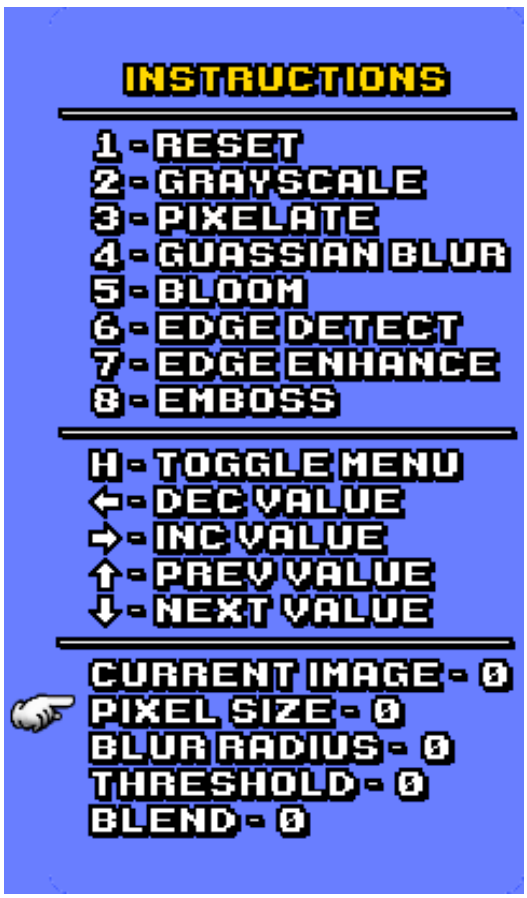
The GUI was created to simplify controls for the demo and does not feature in the component build. It allows the user to change different values that are passed as parameters to the many texture effects. There are no manual test or conditions of satisfaction because there are no L.O's rewarded for this feature.

Manual Test

- N/A

Conditions of satisfaction

- N/A



Grayscale Effect [75]

The grayscale effects replaces the color of the pixels with their luma values to achieve a black and white looking image.

Manual Test

- The grayscale effect is applied to the current image by pressing the 2 key

Conditions of satisfaction

- The grayscale effect is applied to the current image by pressing the 2 key

Example grayscale effect

Pixelate Effect [73]

The pixelate effect gives the illusion of a reduced amount of pixels in the image by replacing blocks of pixels of numerous colors with a single block of color based on the average color of the block of pixels and the pixel size.

Manual Test

- The user can select the pixel size var by pressing up or down arrows until the hand icon is beside the pixel size text.
- The user can press the right arrow key to increase the pixel size var.
- The user can press the left arrow key to decrease the pixel size var.
- The user can press the 3 Key to apply the pixelate effect to the current texture.

Conditions of satisfaction

- The user selects the pixel size by pressing the up or down arrows until the hand icon is beside the pixel size text
- The user presses left and right arrow keys to increase/decrease Pixelated var
- If the value goes below 2 the value is set to 2.
- If the value goes above 100 the value is set to 100.
- When the user presses the 3 key the pixelated effect is applied to the current texture.

Example pixelate effect

Edge Enhancement Effect [74]

Edge enhancement effect contains 3 different edge effects. These include Edge Detect, Edge Enhance and Emboss.

Manual Test

- The edge detect effect is applied to the current image by pressing the 6 key
- The edge enhance effect is applied to the current image by pressing the 7 key
- The emboss effect is applied to the current image by pressing the 8 key

Conditions of satisfaction

- The edge detect effect is applied to the current image by pressing the 6 key
- The edge enhance effect is applied to the current image by pressing the 7 key
- The emboss effect is applied to the current image by pressing the 8 key

Example of edge detect, edge enhance and emboss effects

Blur Effect [72, 59]

The blur effect uses a gaussian kernel matrix to decide what the color of the pixel should be. The centre of the matrices value is multiplied by the current pixel. The surrounding pixels are multiplied by the corresponding matrix values and summed together to give the new blur pixel value. The gaussian kernel matrix size is based on the radius size * 2 + 1.

Manual Test

- The user can select the blur radius var by pressing up or down arrows until the hand icon is beside the blur radius text.
- The user can press the right arrow key to increase the blur radius var.
- The user can press the left arrow key to decrease the blur radius var.
- The user can press the 4 Key to apply the blur effect to the current texture.

Conditions of satisfaction

- The user selects the blur radius by pressing the up or down arrows until the hand icon is beside the blur radius text
- The user presses left and right arrow keys to increase/decrease blur radius var
- If the value goes below 1 the value is set to 1.
- If the value goes above 50 the value is set to 50.
- When the user presses the 4 key the blur effect is applied to the current texture.

Example of blur effect

Bright Pass Effect [59]

The bright pass effect is one of the many effects that is used with bloom. Bright pass effect uses the threshold value. Any pixels luma value that is less than the threshold value becomes black otherwise it retains it color.

Manual Test

- The user can select the threshold var by pressing up or down arrows until the hand icon is beside the threshold text.
- The user can press the right arrow key to increase the threshold var.
- The user can press the left arrow key to decrease the threshold var.
- Bright pass filter is part of the bloom filter.

Conditions of satisfaction

- The user selects the threshold by pressing the up or down arrows until the hand icon is beside the threshold text
- The user presses left and right arrow keys to increase/decrease threshold var.
- If the value goes below 1 the value is set to 1.
- If the value goes above 255 the value is set to 255 .
- Bright pass filter is part of the bloom filter.

Example of bright pass effect
This effect will never been seen as its part of the bloom effect.

Bloom Effect [59, 72]

The bloom effect uses both blur and bright pass as well as its own effect. How bloom works is it uses a bright pass filter first so only the bright parts of the image remain. Threshold value will decide the brightness/luma. The bright parts of the image are then blurred using the blur filter. The amount of blur is based on the blur radius value. The blurred image is then added to the original image and how much is added is based on the blend variable.

Manual Test

- The user can select the threshold var by pressing up or down arrows until the hand icon is beside the threshold text.
- The user can press the right arrow key to increase the threshold var.
- The user can press the left arrow key to decrease the threshold var.
- The user can select the blur radius var by pressing up or down arrows until the hand icon is beside the blur radius text.
- The user can press the right arrow key to increase the blur radius var.
- The user can press the left arrow key to decrease the blur radius var.
- The user can select the blend var by pressing up or down arrows until the hand icon is beside the blend text.
- The user can press the right arrow key to increase the blend var.
- The user can press the left arrow key to decrease the blend var.
- The user can press the 5 Key to apply the bloom effect to the current texture.

Conditions of satisfaction

- The user selects the threshold by pressing the up or down arrows until the hand icon is beside the threshold text
- The user presses left and right arrow keys to increase/decrease threshold var.
- If the value goes below 1 the value is set to 1.
- If the value goes above 255 the value is set to 255 .
- The user selects the blur radius by pressing the up or down arrows until the hand icon is beside the blur radius text
- The user presses left and right arrow keys to increase/decrease blur radius var
- If the value goes below 1 the value is set to 1.
- If the value goes above 50 the value is set to 50.
- The user selects the blend by pressing the up or down arrows until the hand icon is beside the blend text
- The user presses left and right arrow keys to increase/decrease blend var
- If the value goes below 0.1 the value is set to 0.
- 1.
- If the value goes above 1.0 the value is set to 1.0.
- When the user presses the 5 key the bloom effect is applied to the current texture.

Example of bloom effect