



# UT Honors Project Digital Manipulation

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## Overview

We, Jonah Morgan and Bryson Lockhart, are trying to achieve a simple photo editor with several common editing tools as well as some unique filters, we are trying to achieve a custom GUI, or Graphical User Interface, to help use the tools and filters we are providing.

-Sources and Help Documents

-Processing API

-Learning Processing second edition : by Daniel Shiffman

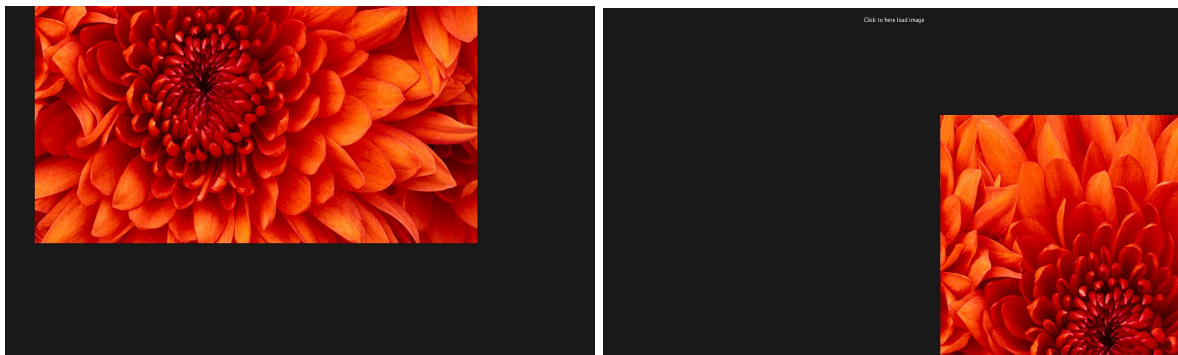
## Goals

1. Achieve 3 complex filters
2. Create a fill tool used similarly to a normal fill tool
3. Effectively make a snipping tool used to crop or select certain parts of an image
4. Achieve a well designed gui that uses working "digital" buttons

## Process

Our first challenge was to import an image, easy enough we already had a template for it, the second part of this was resizing the canvas to fit around the image. We also wanted to make the image "draggable" on our project, it took some research and experimenting, but we managed to move the pixel values according to the mouse's movement. At which point we decided to work on the fill function, which uses a recursive formula to expand to each same colored pixel surrounding the current pixel. This worked for small area but as we got to large areas we encountered this error "stack overflow error". The Fill tool has been improved but a work in progress (W.I.P) is cautioned.

## Directions Of Use



All Functions you see in the Toolbar are accessible by clicking them, a drop down will appear for the File Functions. Loading and Saving files work as the name describes. The Filters all work by clicking their icon and then the effect will be applied automatically, multiple filters may be used at once. All tools can be selected by clicking their logo. Each tool is labeled with text for easy identification. The Move tool is used to drag images around the canvas for easier use or relocation for new images. The Brush tool is like using a fuzzy brush when painting and it will draw a (color of choice) "smeary" line when the mouse is clicked and dragged. The shape tool allows for basic shapes to be drawn on the image, such as rectangles (squares too), and ellipses. The mosaic filter will convert the image into a more vague picture



of what it was before, almost as if it was hand drawn with paint. The watercolor filter makes circular patterns using the colors of the image to make it less distinguishable and drawn using what would look like water paint. The Edges Filter finds all the color changes between pixels and makes a line between them, this only works for drastic color changes so it doesn't effect shading.