

## Design Document

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Erinstagram!

### Functionality:

The user will be prompted with a menu that contains several options to choose from. They can either load a new image, display the current image, edit the current image, and exit the program. If the user chooses to edit the image, they can crop, dim, brighten, or rotate the image 90 degrees. After completing one of those actions, the user will be prompted to save the image to a file. They can enter a custom file name and after saving the image they'll be returned to the top-level menu. The program will run until the user decides to exit the program.

### Functions:

*mainMenu()* – main function

1. Display the top-level menu to the user.
2. Users can select from four options.
3. The menu is displayed and persists until the user chooses an option or quits.

*loadImage()*

1. Prompt the user for a file name.
2. Determine if it's an image file.
3. If it's an image file, load the file contents to the program.
4. Display top-level menu again for user to choose an option.

*displayImage()*

1. Check to see what image is currently loaded to the program.
2. Display image to the user.
3. Return to top-level menu after display.

*editImage()*

1. Display the image editing menu.
2. Users can select to crop, dim, brighten, or rotate the image.
3. Prompt to save the newly edited image to a new file.
4. If yes, the user can enter a custom file name and will be returned to the top-level menu.
5. If no, the user is returned to top-level menu without saving the image.

### *cropImage()*

1. Users can manipulate the image size in this option.
2. Prompt user to enter a section that they would like to use.
3. Take that section and create a new image using it.
4. Prompt user for a file name if they'd like to save the image.
5. Return user to top-level.

### *dimImage()*

1. Check for current brightness value stored in the image file.
2. Prompt user to modify the value.
3. If the user chooses to, they can step each pixel down by one level of brightness.
4. Prompt user to enter a custom file name if they'd like to save the image.
5. Return the user to the top-level.

### *brightenImage()*

1. Check current brightness level in the image file.
2. Prompt user to modify the value.
3. If they want to, the user can step each pixel up by one level of brightness.
4. Prompt the user to enter a custom file name if they'd like to save.
5. Return the user to the top-level.

### *rotateImage()*

1. Check current pixels of the image.
2. Flip each pixels corresponding row and column in the array.
3. Prompt the user to save the image.
  - a. If yes, they can enter a custom file name.
  - b. If no, return to top-level.