Collaging Project USEME

This project allows the user to create collages with different images and filters.

Running the Program

The collager program can be run in several ways, all through the terminal. To run the program from the terminal, first navigate to the res folder with the terminal. Then to run the program use one of the following commands:

- java -jar collager.jar
    - Runs the program in GUI Mode. This will open the GUI window to use the program. The functionality of GUI Mode is explained below.
- java -jar collager.jar -text
    - Runs the program in Text Mode. This will allow you to input commands to the program through the console. To run a command, type it out with spaces separating each part of the command and press enter to submit the command. To see a list of the commands type “help”, or see the functionality section below for the Text Mode.
- java -jar collager.jar -file PATH-TO-SCRIPT-FILE
    - Runs the program with a provided script file. This will run the commands in the file and output the results in the console.
- Java -jar collager.jar --help
    - Displays the information about the ways to run the collager program.

Functionalities

Note: If the user saves the image with the extension “.jpeg”, “.jpg”, or “png”, it will save the image in the respective JPEG or PNG format. Otherwise, it will be saved to a ppm type file.

When loading images, only JPEG, PNG, and PPM are supported. If the image filepath has “.jpeg”, “.jpg”, or “png”, it will read as a JPEG or PNG respectively, otherwise the program will attempt to read the file as PPM.

GUI Mode:

- “Create a project”: Creates a project
    - Type in height and press OK

    - Type in Width and press OK
- “Add a layer”: Adds a layer
    - Type in name of layer and press OK
- “Set the filter of a layer”: Sets the filter the you want onto the layer
    - Select a layer from the dropdown menu and press OK
    - Select a filter from the dropdown menu and press OK
- “Open a project”: Opens a project
    - Select the file to open (must be .collage file)
- “Save a project”: Saves a project
    - Select a place to save the project and press “Choose”
- “Open an image”: Opens an image
    - Select an Image and press “Choose”
    - Select the layer to add the image to and press OK
    - Enter the x position to place the image (starting at 0)
    - Enter the y position to place the image (starting at 0)
- “Save an image”: saves the image of the current selected layer
    - Select filepath to save the image to and press “Choose”

- Underneath the text “Layer”, you can select the layer that you want to see
- Most recently created layers have their images on top of older layers

Text Mode:

- “help” - renders a help message with a list of the commands that the user can input
- "new-project CANVAS-HEIGHT CANVAS-WIDTH” - creates a blank project with the provided dimensions. CANVAS-HEIGHT and CANVAS-WIDTH must be integers. There are no layers by default.
- "load-project PATH-TO-PROJECT-FILE” - loads a project from a .collage formatted file
- "save-project PATH-TO-PROJECT-FILE” - saves the project in the .collage format to the specified file.
- "add-layer LAYER-NAME” - adds a layer to the project with the specified name.
- "add-image-to-layer LAYER-NAME PATH-TO-IMAGE-FILE X-POS Y-POS” - adds a PPM formatted image to the specified layer at the specified coordinates. X-POS and Y-POS must be integers.
- "set-filter LAYER-NAME FILTER-NAME” - sets the given layer to have the specified filter.
    - Available filters are:
        - “normal” - no filter is applied.
        - “red_filter” - only displays the red channels of the layer.
        - “green_filter” - only displays the green channels of the layer.
        - “blue_filter” - only displays the blue channels of the layer.
        - “brighten_intensity” - brightens the layer using the average intensity of pixels.

        - “darken_intensity” - darkens the layer using the average intensity of pixels.
        - “brighten_luma” - brightens the layer using the weighted luma value.
        - “darken_luma” - darkens the layer using the weighted luma value.
        - “brighten_max” - brightens the layer using the maximum intensity of the pixels.
        - “darken_max” - darkens the layer using the maximum intensity of " the pixels.
        - “darken_multiply” - darkens the layer by changing its L value in its HSL form.
        - “brighten_screen” - brightens the layer by changing its L value in its HSL form.
        - “inversion_difference” - inverts the colors of the image by using the difference of RGB values of the composite image and top image.
- "save-image PATH-TO-IMAGE-FILE” - saves the result of applying all filters on their respective layers and combining those layers.
- “quit” - quits the program.