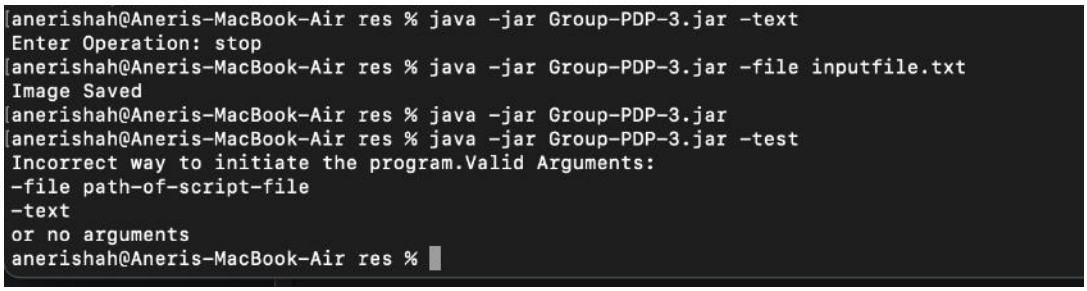
How To RUN Program (Both GUI and Command Line)

How to Run Program:

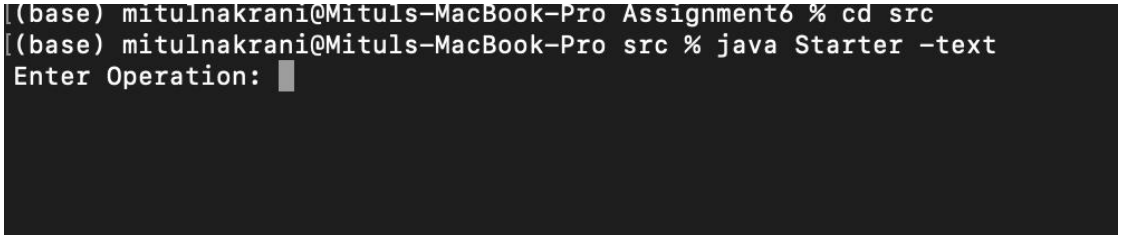
- In the command prompt (powershell for windows or terminal for mac) navigate to the folder in which Starter.java file is located (Assignment6/src/Starter.java).
- Execute in terminal "javac Starter.java" to compile the program
- Now You can run the program in 3 different ways:
    - "java Starter -file file_path" – This will run the program withour GUI and run all the commands in the file located at filepath before prompting the user to enter operation in the command line.
    - "java Starter -text" – This will run the program and directly prompt the user to enter operations in the command prompt itself and user can operate on image from the command prompt.
    - "java Starter" – This will directly run the GUI of the program and the user can operate on the image using the GUI

How to Run the GUI Jar file:

- Navigate to /res folder containing the JAR file in terminal or command prompt.
- Type command "java -jar Group-PDP-3.jar" and press Enter. This will runt the Program in GUI Mode
- Type command "java -jar Group-PDP-3.jar -text" and press Enter. This will run the Program in Prompt operation Mode (Batch Script Mode).
- Type command "java -jar Group-PDP-3.jar -file file_path" and press Enter. This will run the Program using the commands in given file at file_path.
- 

How To USE Program (Command Line)

- After running the program , the user can select any of the operations defined bwlow and execute it on the image.



User Input For Command Line Execution.

The program execution will prompt the user to write operations and execute them line by line. The following operations can be performed:

Operation	Description
load file_path image_name	Load the image into program. Every image needs to be loaded before performing any other operations on that image.
brighten value image_name new_name	Brighten or Darken the image by value (+ve lighter, -ve darker).
vertical-flip image_name new_name	Vertically flip the image with a new_name.
horizontal-flip image_name new_name	Horizontally flip the image with a new_name.
save file_path image_name	Save the image with image_name at file_path.
rgb-split image_name new_name_red new_name_green new_name_blue	Splits the image with name image_name into 3 channels and names each one individually.
rgb-combine image_name red_image green_image blue_image	Combines red_image, green_image and blue_image to create a new image with image_name.
blur image_name new_name	Blurs the image with image_name and gives it name new_name.
sharpen image_name new_name	Sharpens the image with image_name and gives it name new_name.
luma-component image_name new_name	Greyscales the image with image_name and gives it name new_name.
sepia image_name new_name	Sepia Filters the image with image_name and gives it name new_name.
intensity-component image_name new_name	Intensifies the image with image_name and gives it name new_name.
value-component image_name new_name	Stores the Max value pixel of the image with image_name and gives it name new_name.
red-component image_name new_name	Extracts red channel of the image with image_name and gives it name new_name.
green-component image_name new_name	Extracts green channel Cell.
blue-component image_name new_name	Extracts blue channel Cell.
run file_path	Runs all the commands in the file stored at file_path.
stop	Stop the program execution.
compress percentage image_name destination_name	Compress the image with image_name to given percentage and stores into destination_name.
histogram image_name dest_name	Creates histogram of image_name and saves at dest_name.
color-correct image_name dest_name	Corrects the color adjustment of the image_name.

Operation	Description
levels-adjust b m w image_name dest_name	Adjust the color levels of the image_name as per the b,m,w values (black, mid, white).
blur image_name new_name split percentage	Blurs the image with image_name and gives it name new_name and in split of image at given percentage.
sharpen image_name new_name split percentage	Sharpens the image with image_name and gives it name new_name and in split of image at given percentage.
luma-component image_name new_name split percentage	Greyscales the image with image_name and gives it name new_name and in split of image at given percentage.
sepia image_name new_name split percentage	Sepia Filters the image with image_name and gives it name new_name and in split of image at given percentage.
color-correct image_name dest_name split percentage	Corrects the color adjustment of the image_name and in split of image at given percentage.
levels-adjust b m w image_name dest_name split percentage	Adjust the color levels of the image_name as per the b,m,w values (black, mid, white) and in split of image at given percentage.

Example Script To Run

Sample Script of commands

- run inputfile.txt

Testing Input file

- run inputfile1.txt

User Output

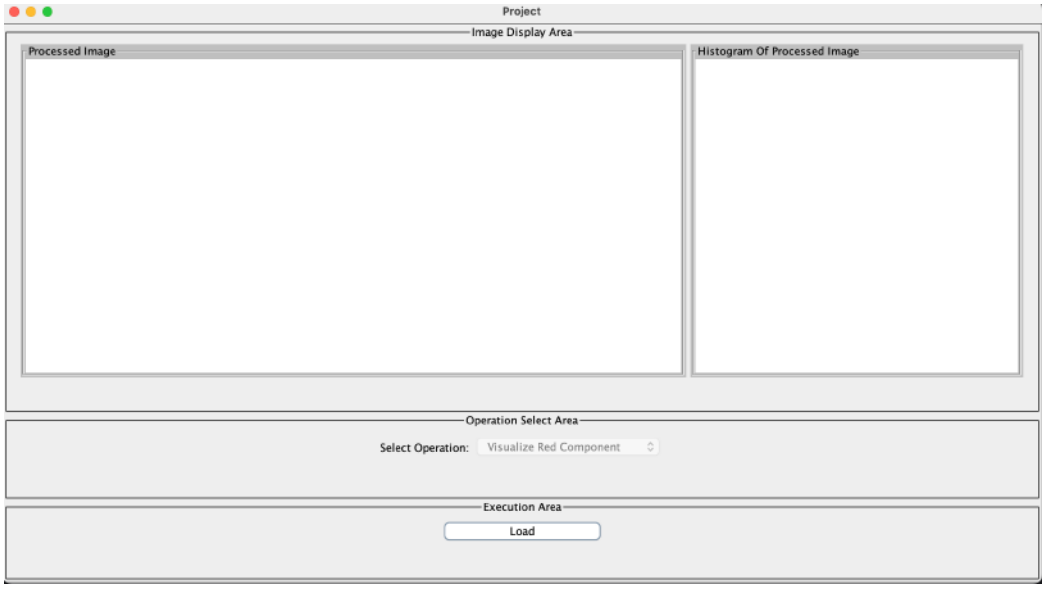
The Output can be displayed by either using the “save” operation.

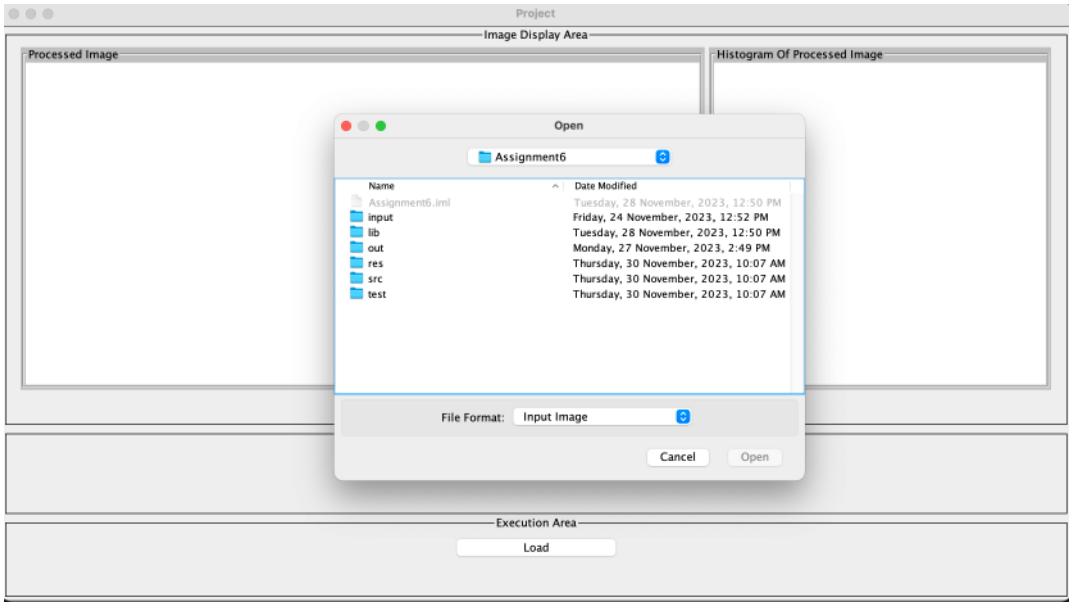
Restrictions

- Each Image needs to be loaded before performing any operations on it
- “stop” will stop the execution and all the loaded images will be discarded.

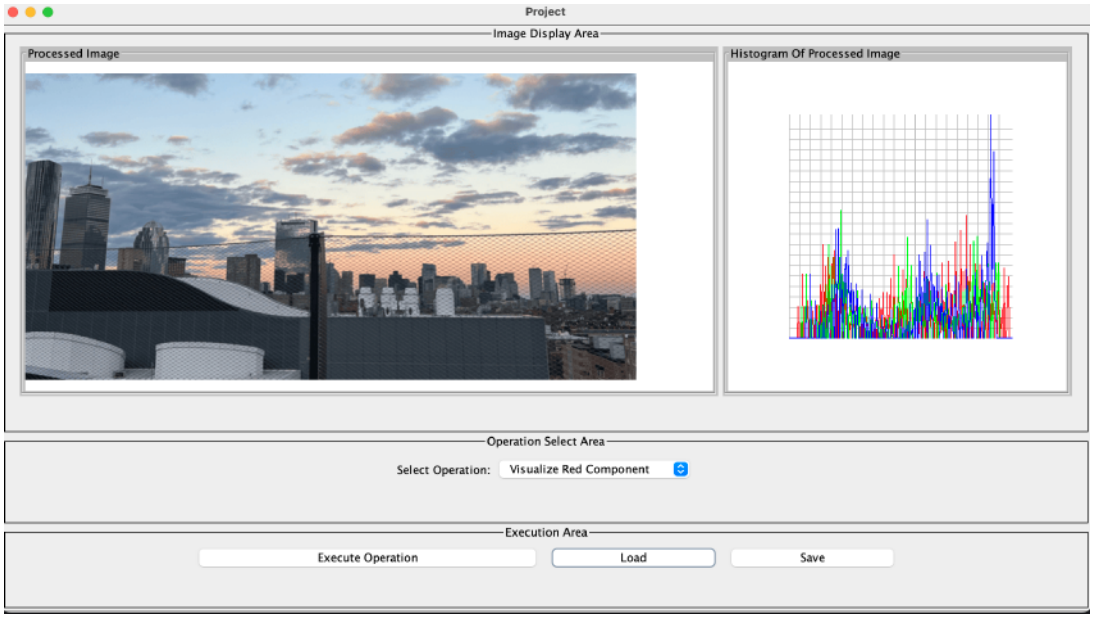
How To USE Program (GUI)

USE our cited image boston-sky-small.png to test the GUI opertions.

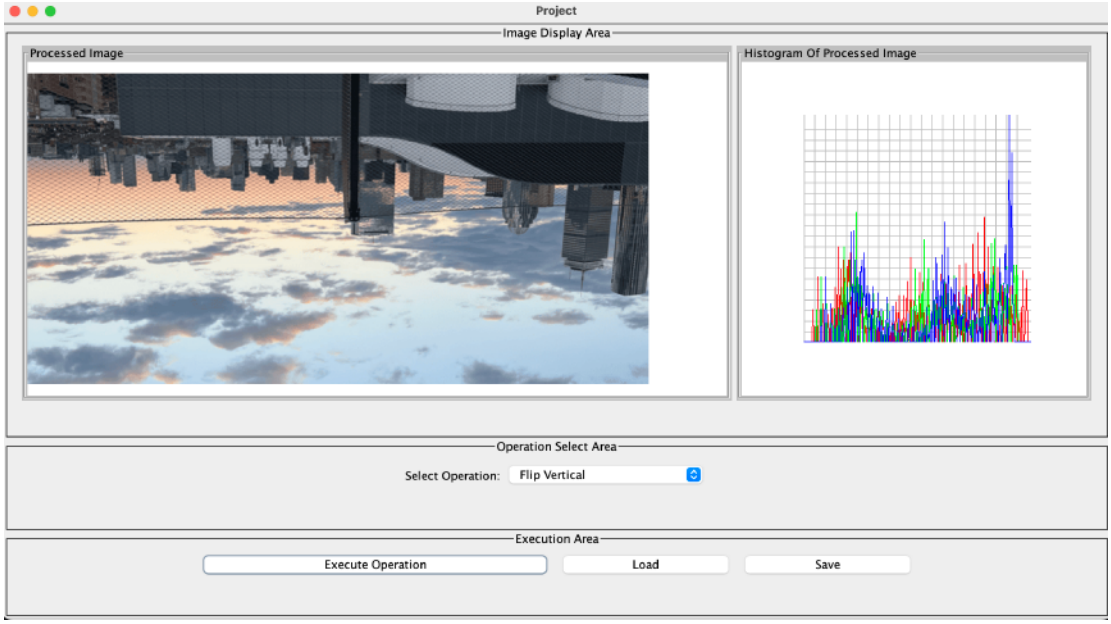
- Once You run the Program GUI the following Window Will Pop-Up:
- 

- This is the initial window where the user needs to load an image before performing any execution. The execute and save button are still not visible as the image is not loaded into the program. Also the operation dropdown Is disabled till the image is loaded.
- On clicking Load button following things happen:
- 

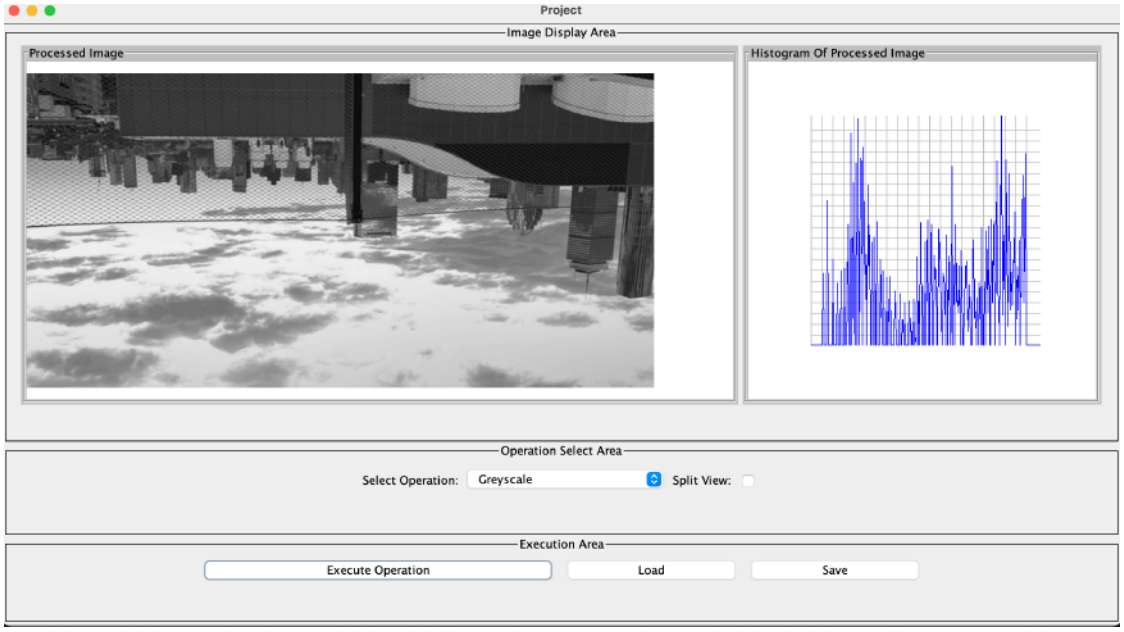
- User select image needed to be loaded form the window. The image can be only of ppm, png or jpg types and the window does not allow to upload any other type of image.

- 

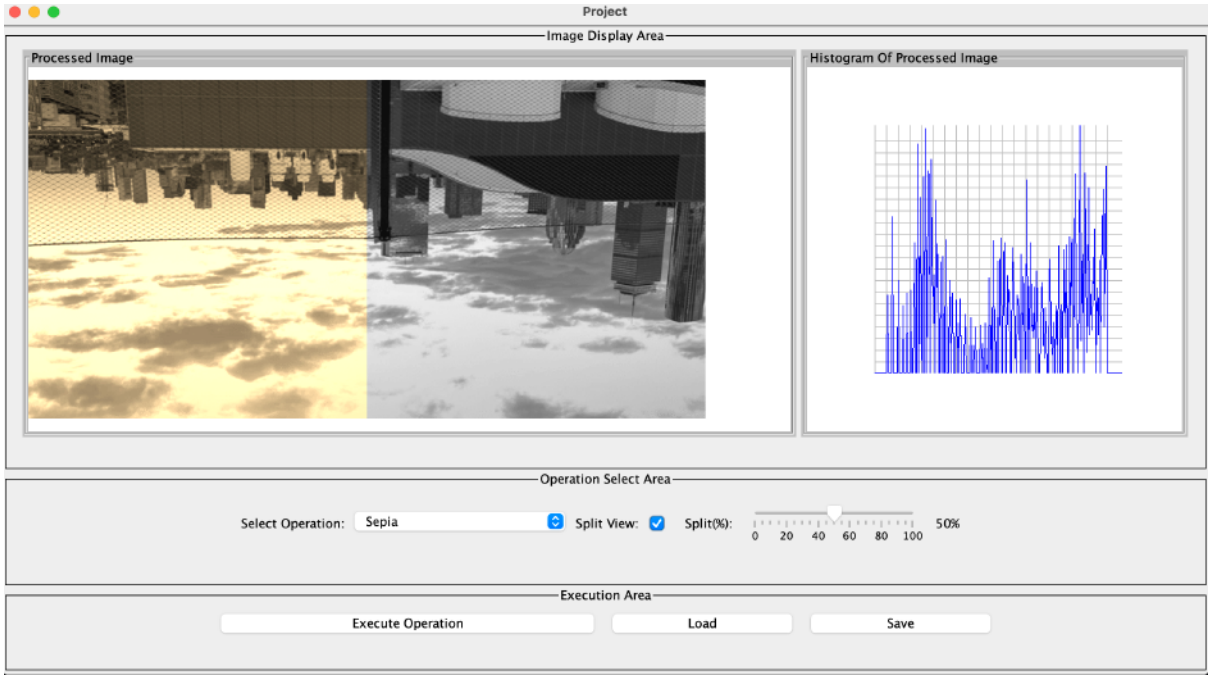
- After selecting the image, the image will be loaded into the program. The Execute and save button are now visible and user can perform operations. The left image window panel shows the current state of processed image and the right window shows the histogram of currently processed image in real time.
- The user can now select any operations from the operations dropdown box and execute it on the current image.

- 

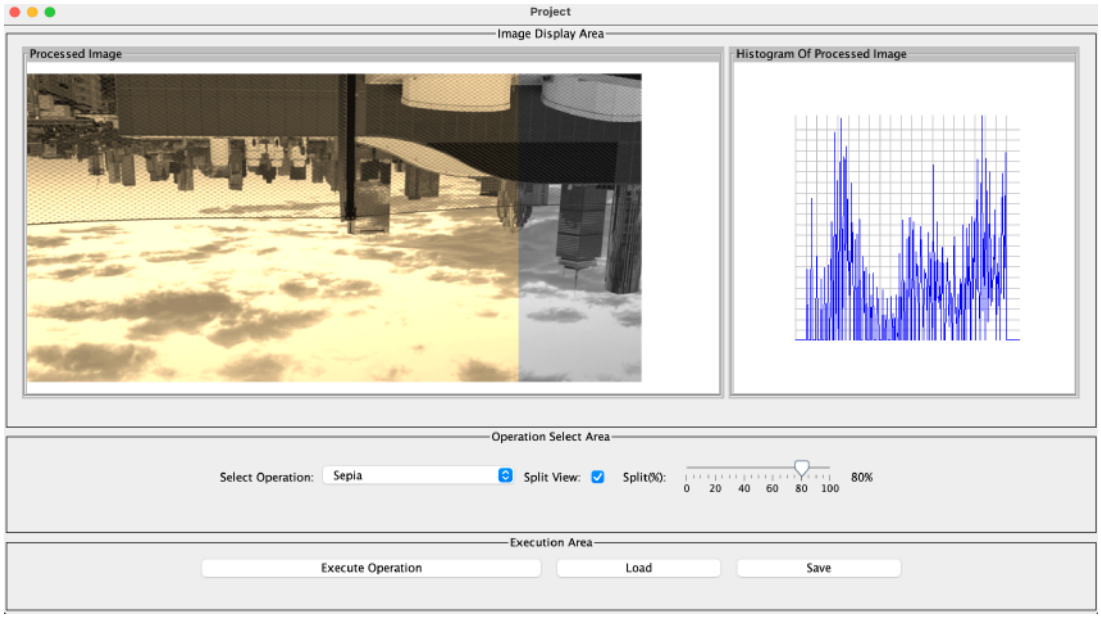
- As you can see here, after selecting “Flip vertical” option and clicking execute button, the operation is done on the image. Also the histogram changes in real time with operations performed. You can see it in operation below:

- 

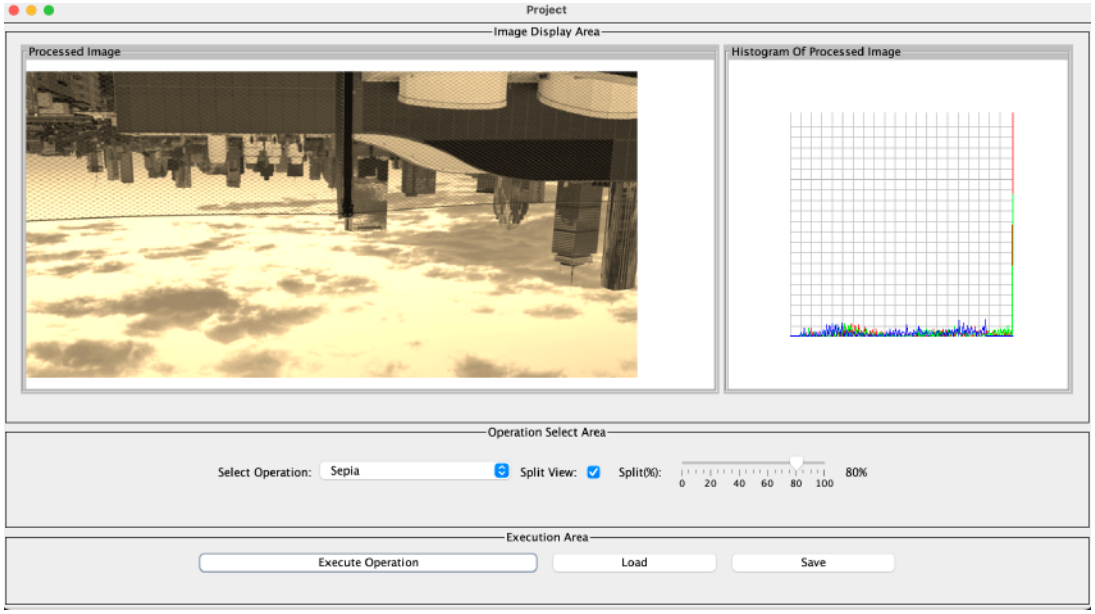
- If the user wants to preview an image operation (supported by: blur, sharpen, sepia, greyscale, levels adjust, Color Correct), he/she can click on the Split View Chackbox and directly view it.

- 

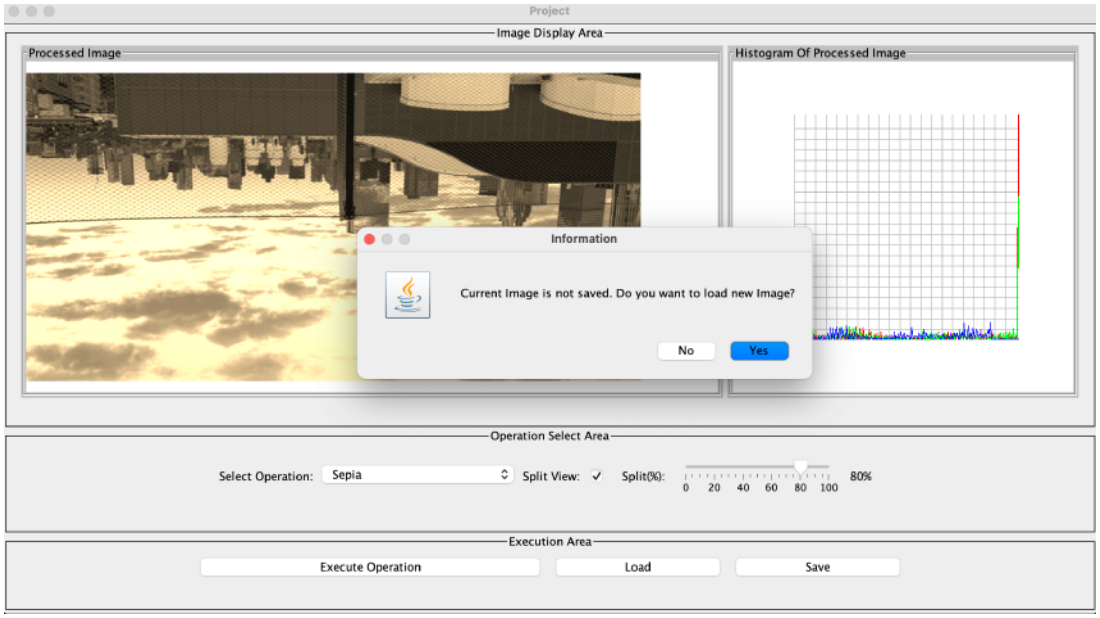
- If the User unchecks the split view checkbox, the split view is closed and current processed image is seen again.
- If the User wants to change the split view percentage, he/she can toggle that form the split percentage slider. You can see that below:

- 

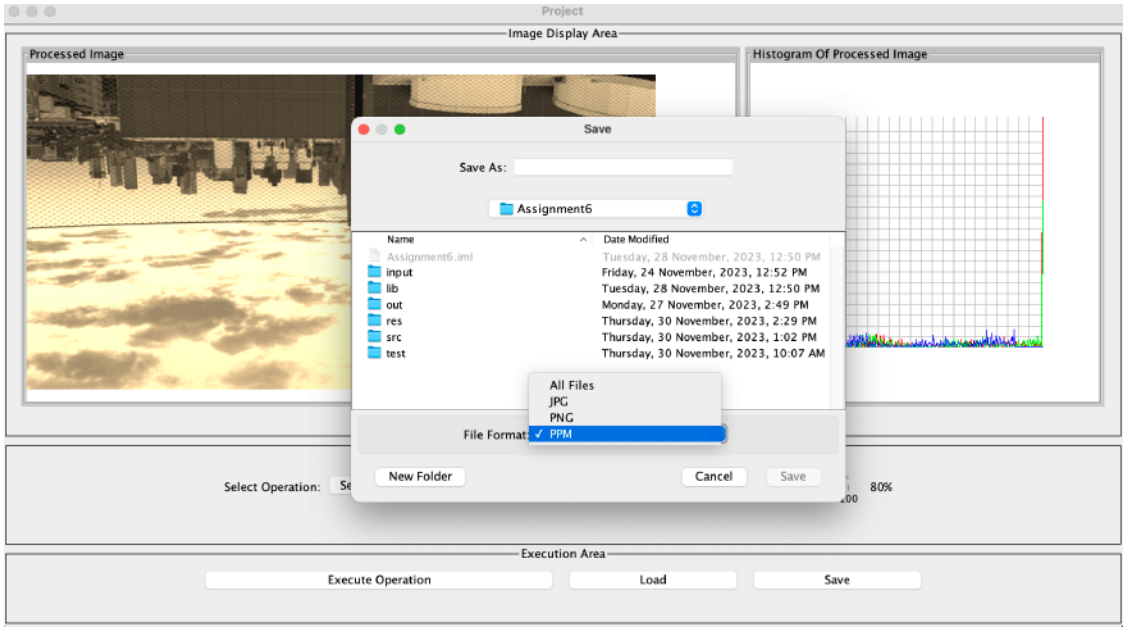
- If the user feels that he/she wants to perform the previewed operation, he/she just need to click the execute button and the processed immediately. You can see that below. Also the Histogram will be changed accordingly.

- 

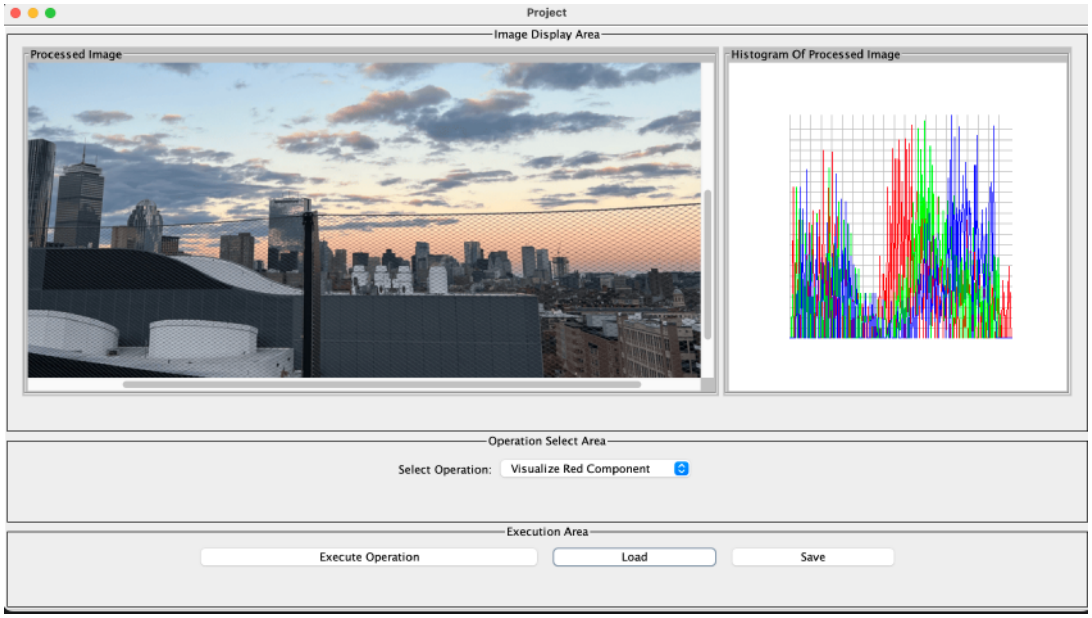
- Now the User can Load another Image or Can currently Save the processed Image without saving.
- If the User chooses to Load another Image without saving, He/She will be promped with a warning Window as seen below:

- 

- If the user chooses Yes, He will be allowed to load a new image without saving and the process starts all again.
- If the User chooses No, He will be able to continue processing the image.
- To save the image, If the User clicks the Save Button, the following window pops up.

- 

- The user can select any way of saving the file at the path chosen (ppm, png or jpg) and define the same in Save As textbar and click on save to save the image.
- To Close the program, the user can directly do it by clicking the Red Cross on the top left or top right of window.

- 

- You can see that if the image loaded is of larger size, the panel is set to be both X and Y scrollable. (This image is boston-sky.png)