

420-203-RE – Programming in Graphical Environment

Assignment 2 – Image Processing

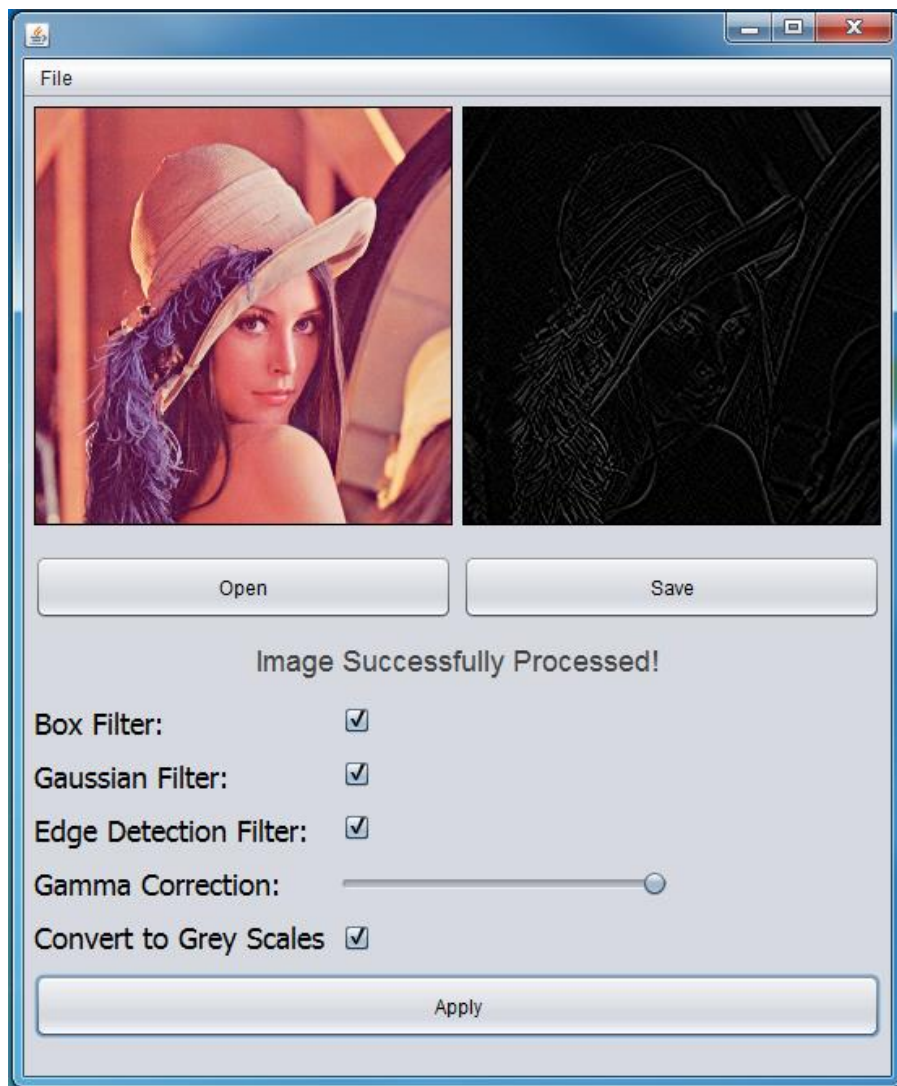
Worth: 12.5%

Due: Monday October 9th, end of day

Teams: To be done individually or in teams of 2 maximum

Score breakdown

8 points	Functionalities
2 points	Program aesthetics and Usability
1.5 points	Coding Style



Introduction

As seen in the Lab, there are many image processing algorithms that are simple and fun to implement. For this assignment, you will have to implement Image Processing Algorithms presented in the Class 10 notes. These include grey scales conversion, gamma correction and a few convolution filters.

To implement the GUI, feel free to use Netbeans GUI Builder. Also, feel free to re-use any of the code seen in class in your assignment

Graphical User Interface Layout

1. 2 image panels: original (left) and output (right)
2. Message Label: gives message and error feedback to the user
3. Open Button: To load an image
4. Save Button: To save an output image
5. Apply Button: To execute the image processing filters
6. Your GUI Application should contain a File Menu to open an image, save it and quit
 - a. File -> Open Image
 - b. File -> Save Image
 - c. File -> Quit
7. Appropriate SWING Components to control the image processing algorithms

Functionalities

8. All the selected image processing options will be applied in sequence on top of each other. For optimal results, the last operations should be gamma correction followed by conversion to grey scales if selected
9. Image processing algorithms must be properly implemented, and only executed when pressing the Apply button. There must be at least 5 of these algorithms implemented. Feel free to implement other algorithms than the ones seen in class.
10. Opening and saving images should present a File dialog opening in the Netbeans project "/images" folder by default. It should filter image formats (jpg, bmp, png, ...)
11. When pressing the save button, the image showing on the right will be saved. If no image processing has been done, you should see an error message instead of saving
12. Always display a message to the user after each successful operations, and display an error message when something goes wrong

Submission

For submission, only one team member must submit a zipped Netbeans Project containing the program, before the deadline shown on Omnivox. For late submission, a penalty of 1% per hour late will be applied. To get your marks, you will need to demo your application to your teacher.