Multimedia Application Project GIMSEP

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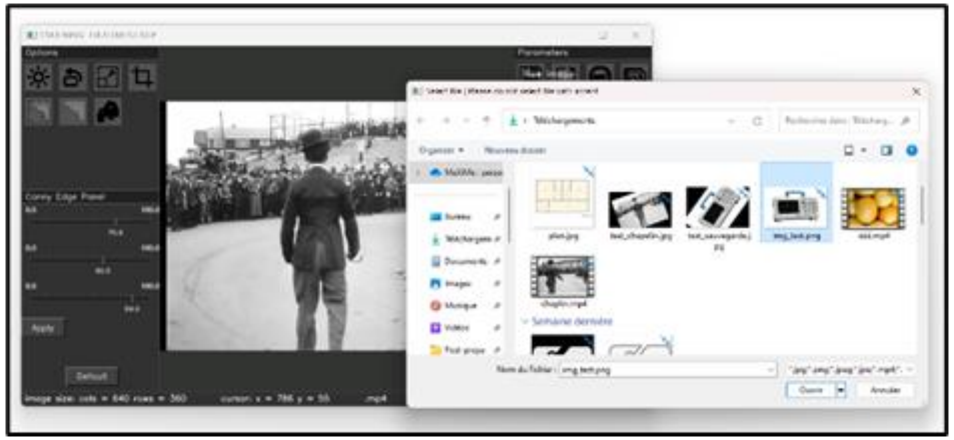
Media Selection & Save

01

Using native file browser to get media (Image/video)



02

Using user camera to take a picture

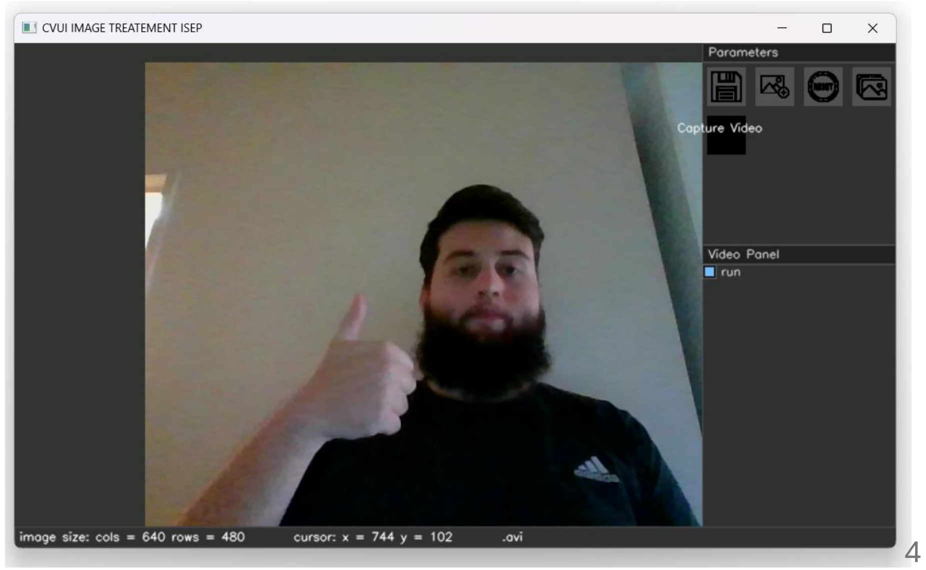
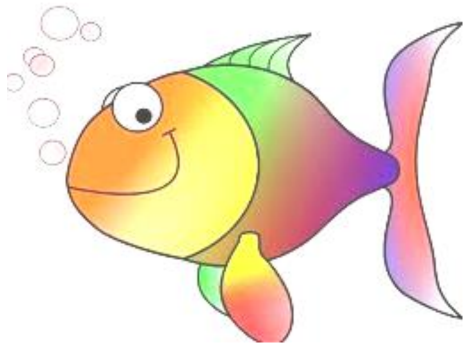


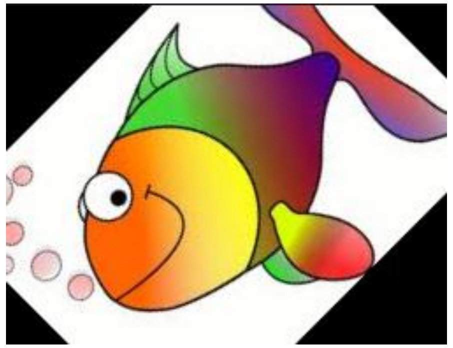
image size: cols = 640 rows = 480   cursor: x = 744 y = 102   .avi

Image Transformations

Brightness



Rotation

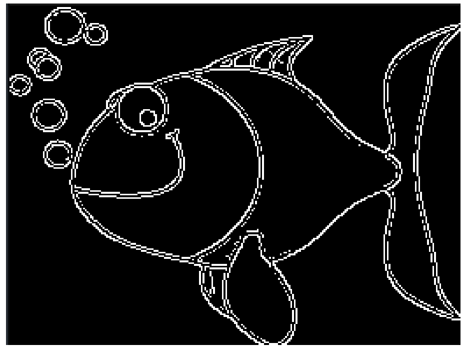


Erosion

Panorama

Cropping

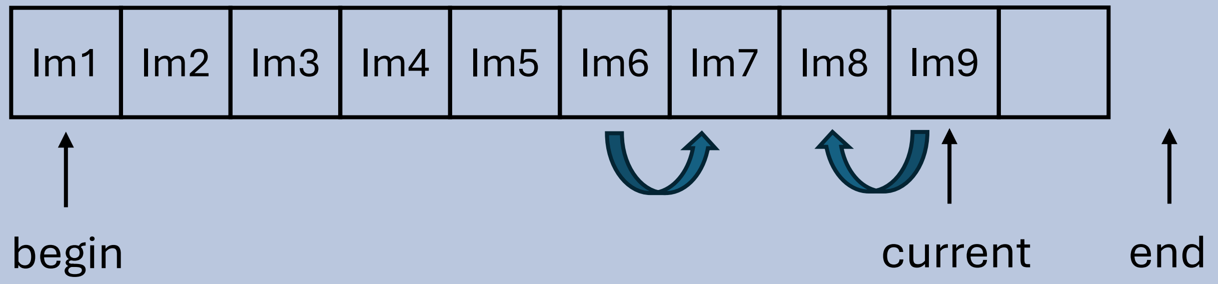
Canny edge



Dilatation

Backward and forward steps

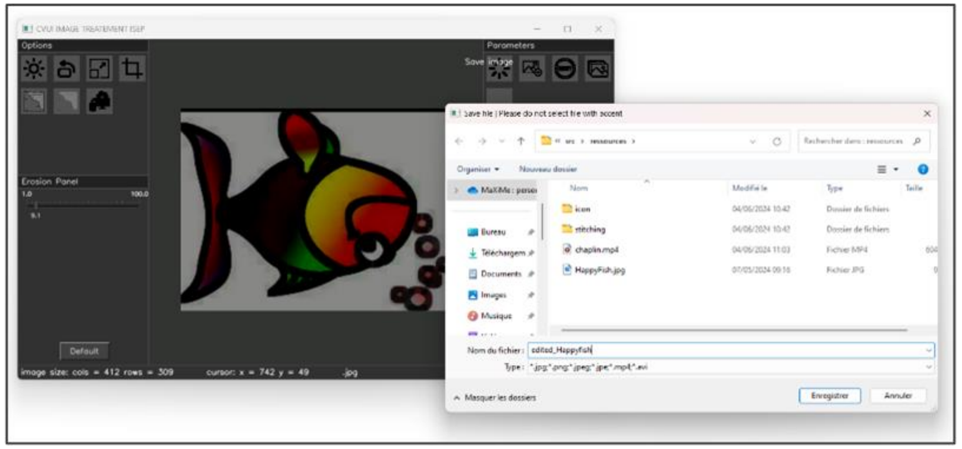
Image Vector

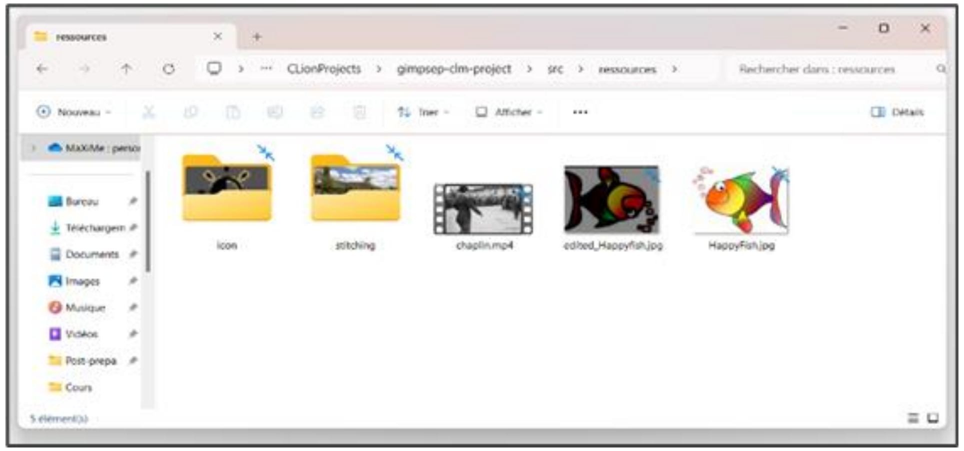


Control Z
Undo previous changes up to 10 times
Displays previous images

Control Y
Redo undone changes up to the last modification

Image Saving


Save image
Erosion Panel
Default
Save file | Please do not select file with accent
Nom du fichier : edited_Happyfish
Enregistrer
Annuler

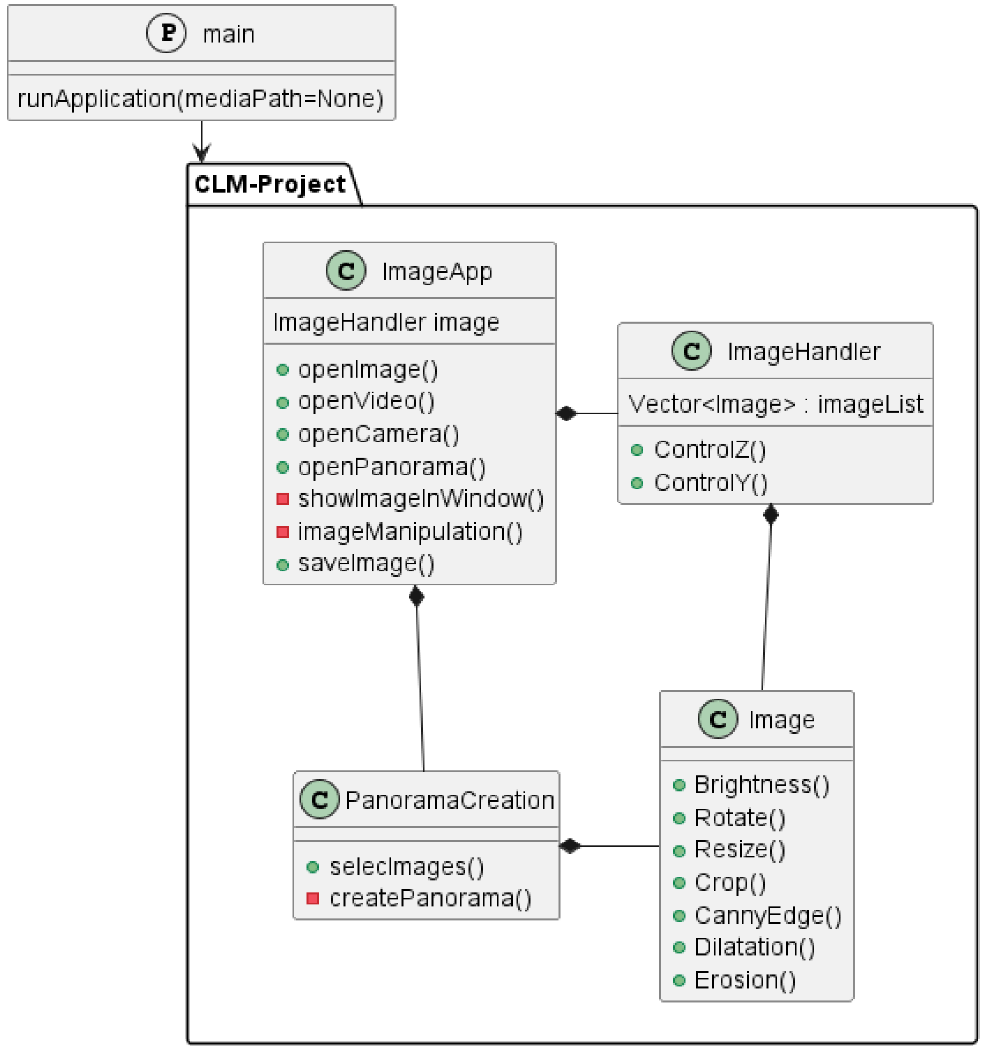


Simple And efficient !

- 1. Open file dialog system
- 2. Let user select, the folder and the name for edited image
- 3. Get the path and use cv::imwrite() to save the creation

Technical aspect

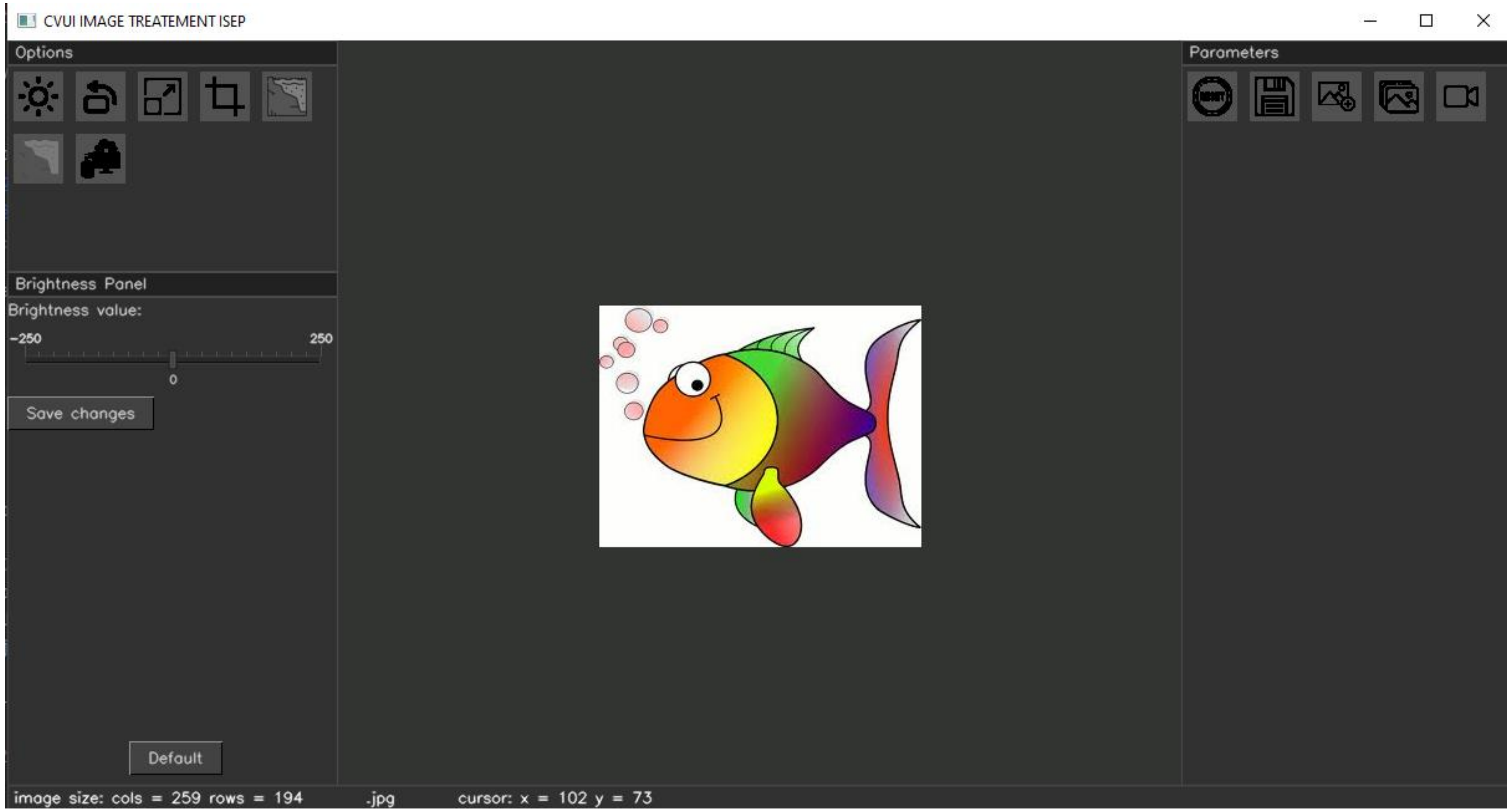
cvui 2.7.0



Project management

	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6
Charles	Git creation, computer set up, etc.	Dilatation, Erosion	Panorama	User interface base ImageApp	User interface merged with use of all functions (class: Image(), ImagePanorama(), ImageHandler()	User interface and merging of last functions (Open, save, image) + report
Maxime		Lighten, darken		Search on filedialog library and implementation (window + linux)	Select media, save image	Select media, save image + report
Lucie		Rotation, resizing, cropping	Canny edge detection	Merging of all image functionalities in a class Image	Image vector, undo and redo	Report

Time for the demo!



Brightness value:

-250 250

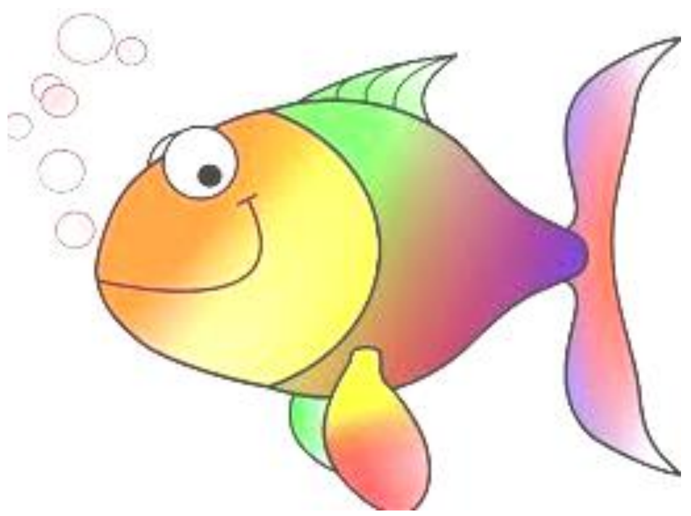
0

image size: cols = 259 rows = 194 .jpg cursor: x = 102 y = 73

Thank you for your attention

Image Transformations

Brightness



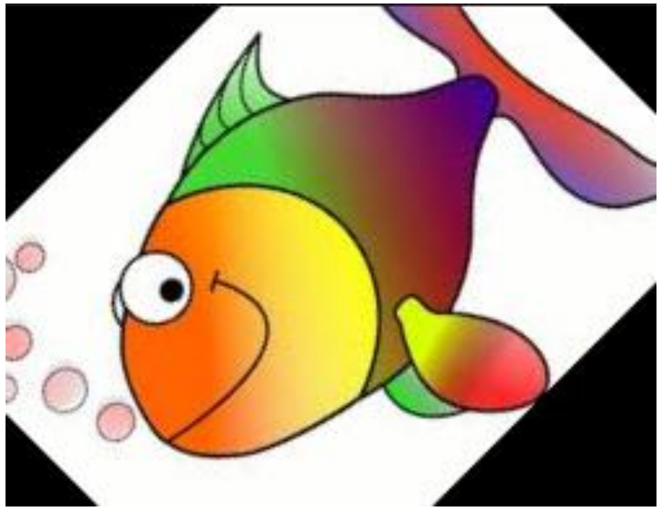
Use cv::convertTo() function to scale pixels brightness with a given *brightnessFactor*

brightnessFactor is a value between –250 and 250 where -250 is fully dark, 0 is the starting image and 250 is fully bright

brightnessFactor is defined by the user through a slider on GUI

Image Transformations

Rotation



Get centerPostion of rotation with Point2f cv::center()

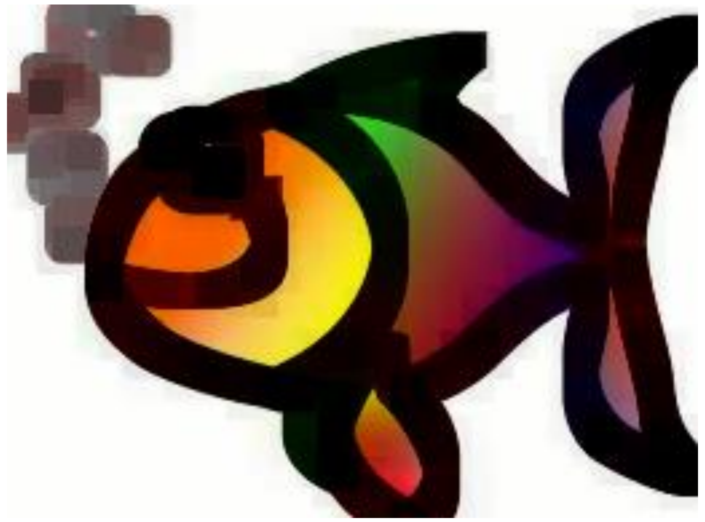
Get rotation matrix with cv::getRotationMatrix2D() and rotationAngle value

Then obtain rotation with cv::warpAffine()

rotationAngle and centerPostion can be selected using three sliders: X-location Y-location and rotation angle

Image Transformations

Erosion



Erosion is obtain by using cv::erode() function which needs a structural Element

The structural Element represents the pattern that will operate erosion in the image

structuralElement is obtained with cv::getStructuringElement() with a kernel size defined by user

Image Transformations

Dilatation

- Dilatation is obtain by using cv::dilate() function which needs a structural Element
- The structural Element represents the pattern that will operate the dilatation on the image
- structuralElement is obtained with cv::getStructuringElement() with a kernel size defined by user

Image Transformations

Cropping

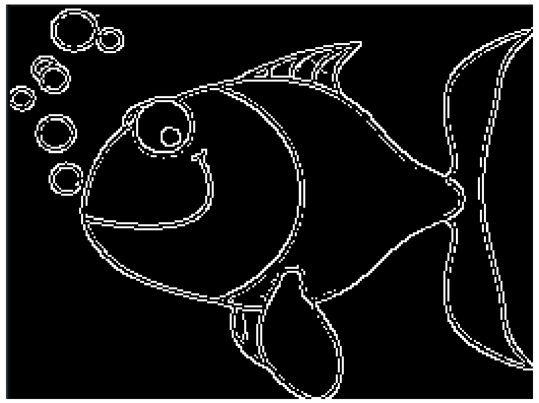
In order to get the croping of an image, we use two couples (startRow, endRow) and (startCol, endCol)

The two couples define a new area : The cropped image

(startRow, endRow) and (startCol, endCol) can be set using four sliders

Image Transformations

Canny edge



First, choose a low threshold to detect all edge points and a high threshold to detect only edge center points

Gaussian blur is applied before the Canny edge detection algorithm to reduce noise, making edge points easier to detect

cv::Canny is used to detect all the wanted edges