Processing Tutorials

Tutorial 2
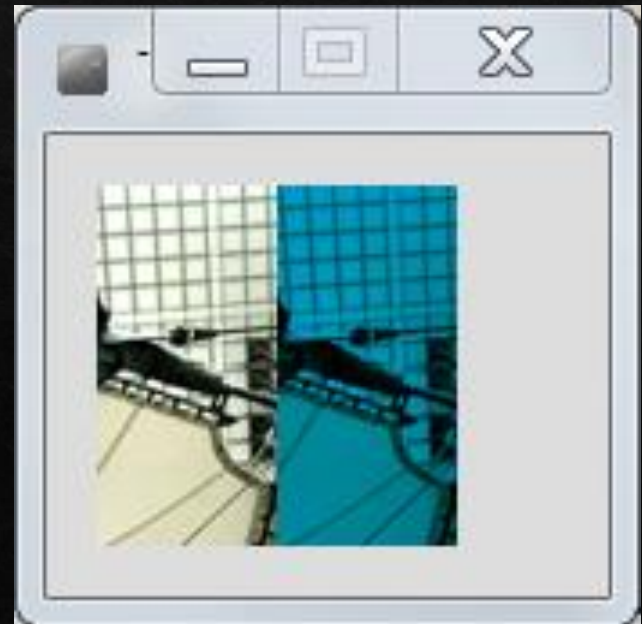
Example 4

Tint images

Tint images

```
PImage img;
img = loadImage("laDefense.jpg");
image(img, 0, 0);
tint(0, 153, 204);  // Tint blue
image(img, 50, 0);
```

```
tint(rgb, alpha)
tint(gray, alpha)
tint(v1, v2, v3, alpha)
```
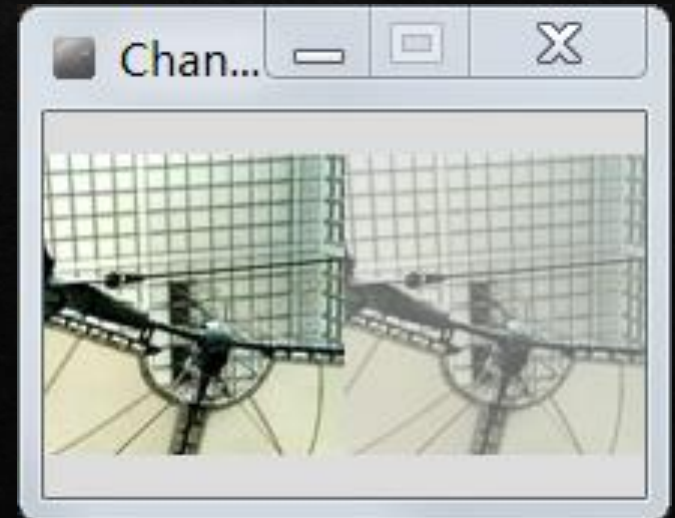
Example 5

Change image's transparency

Change image's transparency

```
PImage img;

void setup(){

  size(200,100);

  img = loadImage("laDefense.jpg");

  image(img, 0, 0);

  tint(255, 126);  // Apply transparency without
changing color

  image(img, 100, 0);

}
```
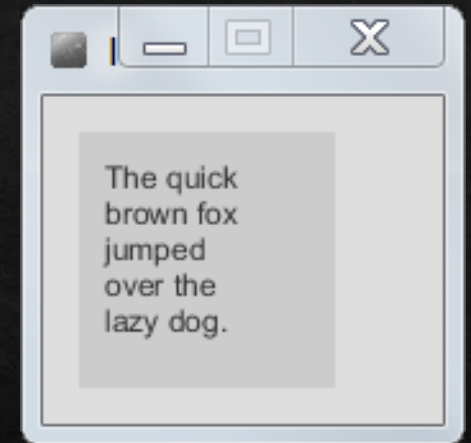
Example 6

Draw texts

Draw texts

```
textSize(32);

text("word", 10, 30);

fill(0, 102, 153);

text("word", 10, 60);

fill(0, 102, 153, 51);

text("word", 10, 90);

===========================

String s = "The quick brown fox jumped over the lazy
dog.";

fill(50);

text(s, 10, 10, 70, 80);  // Text wraps within text
box
```

Introduction to OpenCV library

Prerequisite

◇ Install OpenCV library for Processing

◇ Examples for OpenCV functions are located in: \Processing\libraries\opencv_processing\examples

◇ Reference can be found here: http://atduskgreg.github.io/opencv-processing/reference/

Functions in OpenCV lib

◈ Contour

◈ ContourComparator

◈ Flow

◈ Histogram

◈ Line

◈ OpenCV

   ◇ Face/eye/nose… detection

   ◇ Find object contour ("FindContour", "FindEdges")

   ◇ Find Optical Flow ("BackgroundSubtraction", "OpticalFlow")

Example 8

Face/hand detection

Face detection (image)

 ⬥ Run "FaceDetection" example in OpenCV library (or "FaceDetection_img" in tut2_examples)

Face detection (video)

◇ Run "FaceDetection_video" example in tut2_examples

Face detection (webcam)

- Run "LiveCamTest" example in OpenCV library ((or "FaceDetection_webcam" in tut2_examples))

- Change "OpenCV.CASCADE_FRONTALFACE" to

  - OpenCV.CASCADE_EYE

  - OpenCV.CASCADE_NOSE

  - OpenCV.CASCADE_MOUTH

  - OpenCV.CASCADE_PROFILEFACE

  - OpenCV.CASCADE_UPPERBODY

- Run the example again

- Run "WhichFace" example in OpenCV library

Hand detection

◈ Download "aGest.xml" from the course webpage

◈ Move "aGest.xml" to the folder "sketchbook_location/libraries/opencv_processing/library/cascade-files"

◈ Change the code in red

```
void setup() {
  size(640, 480);
  video = new Capture(this, 640/2, 480/2);
  opencv = new OpenCV(this, 640/2, 480/2);
  opencv.loadCascade("aGest.xml");
  video.start();
}
```

Exercise

Exercise

1. Install OpenCV for Processing library

2. Run previous examples

3. Finish the following tasks:

Task 1:

◇ Mask the detected faces in video "test.mov" using a face image ("test.mov" can be found in "FaceDetection_video" from tut2_examples);

◇ The image size should change according to the size of the detected face.

Task 2:

◇ Show a series of folder images on the screen;

◇ Tint the image when the mouse hover over.