



PROCESSING
COOKBOOK
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EXCERSIZES
DRAW WITH PATTERNS

creative
scripting
meals

05

exercises

PATTERN 1D

PATTERN 2D

PATTERN 2D INTERACTIVE COLOR

PATTERN 2D INTERACTIVE TEXT COLOR

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PIXELATE LIVE VIDEO FULLY PARAMETRIC

sketches

Pattern 1D

http://processing.org/reference/translate_.html
http://processing.org/reference/popMatrix_.html
http://processing.org/reference/pushMatrix_.html
http://processing.org/reference/dist_.html

DESCRIPTION

Using this sketch try to develop the following projects

Pattern 2D

Create a 2 dimensional pattern. Use the same window size.

Pattern 2D Interactive Color

Try to embed an interactivity on the rects. Mark the below the mouse rectangle changing the color. Make the same thing for the size.

Pattern 2D Interactive Text Color

Replace the rectangle matrix with a font matrix. Use one font as an object and apply the above behavior.

Pattern 2D Interactive Text Rotation

Try to rotate the character that is placed below the mouse location. Many things has to be done using different method. The translate() command is necessary.

Rectangle Interactive

Track a rectangle area based on mouse location

Interactive Area

Track a round area based on mouse location. Use dist() command to measure the distance between 2 points.

CODE

```
int cols; // Number of columns and rows in our system
int rectSize=10; // rectsize
color c; // color of the rectangles

void setup() {
  size(640, 480);
  cols=width/rectSize;
}

void draw() {
  for(int i=0; i<cols; i++) {
    int x=i*rectSize;
    rect(x,0,rectSize, rectSize);
    println(x);
  }
}
```

Get Image Color

http://processing.org/reference/get_.html
<http://processing.org/tutorials/pixels/>

DESCRIPTION

Using this sketch try to develop the following projects

Pixelized Image

Merge the Pattern 2D project and apply to every rectangle the correct color. Use `get()` command, but also take a look of pixels tutorial (above link.)

Representation Methods

Use other objects such as points, lines, rectangle, ellipses and other in order to develop other representation methods.

CODE

```
/**
 * Load and Display
 *
 * Images can be loaded and displayed to the screen at their actual size
 * or any other size.
 */

// The next line is needed if running in JavaScript Mode with Processing.js
/* @pjs preload="moonwalk.jpg"; */

PImage img; // Declare variable "a" of type PImage

int cols, rows; // Number of columns and rows in our system
int rectSize=10; // rectsize
color c; // color of the rectangles

void setup() {
  size(640, 360);
  // The image file must be in the data folder of the current sketch
  // to load successfully

  img = loadImage("moonwalk.jpg"); // Load the image into the program
  cols=width/rectSize;
  rows=height/rectSize;

  noFill(); // remove fill
  println(img.width);
}

void draw() {
  // Displays the image at its actual size at point (0,0)
  image(img, 0, 0);

  color c =get(mouseX, mouseY);
  fill(c);
  noStroke();
  rectMode(CENTER);
  rect(mouseX, mouseY, 50, 50);
}
```

Live Camera

<http://processing.org/reference/libraries/video/Capture.html>
http://processing.org/reference/libraries/video/Capture_available_.html
http://processing.org/reference/libraries/video/Capture_start_.html
http://processing.org/reference/libraries/video/Capture_stop_.html
http://processing.org/reference/libraries/video/Capture_read_.html
http://processing.org/reference/libraries/video/Capture_list_.html

DESCRIPTION

Using this sketch try to develop the following projects

Pixelate Live Video

Merge previous projects and apply to every rectangle the correct color of the webcam. Use `get()` and `pixels[]` commands.

Pattern 2D Live Video Text

Replace the rectangle matrix with a font matrix. Use one font and fill it with the correct color.

CODE

```
import processing.video.*;

int video_width = 320;
int video_height = 240;
int num_pixels = (video_width * video_height);
int previous_frame[];

Capture video;

void setup()
{
  //set up size of window and video
  size(320, 240);
  frameRate(60);
  loadPixels();
  previous_frame = new int [num_pixels];

  video = new Capture(this, video_width, video_height, 30);
  // Start capturing the images from the camera
  video.start();
  background(0);
}

void captureEvent(Capture video) {
  video.read();
}

void draw()
{
  image(video, 0,0,width,height);
}
```