

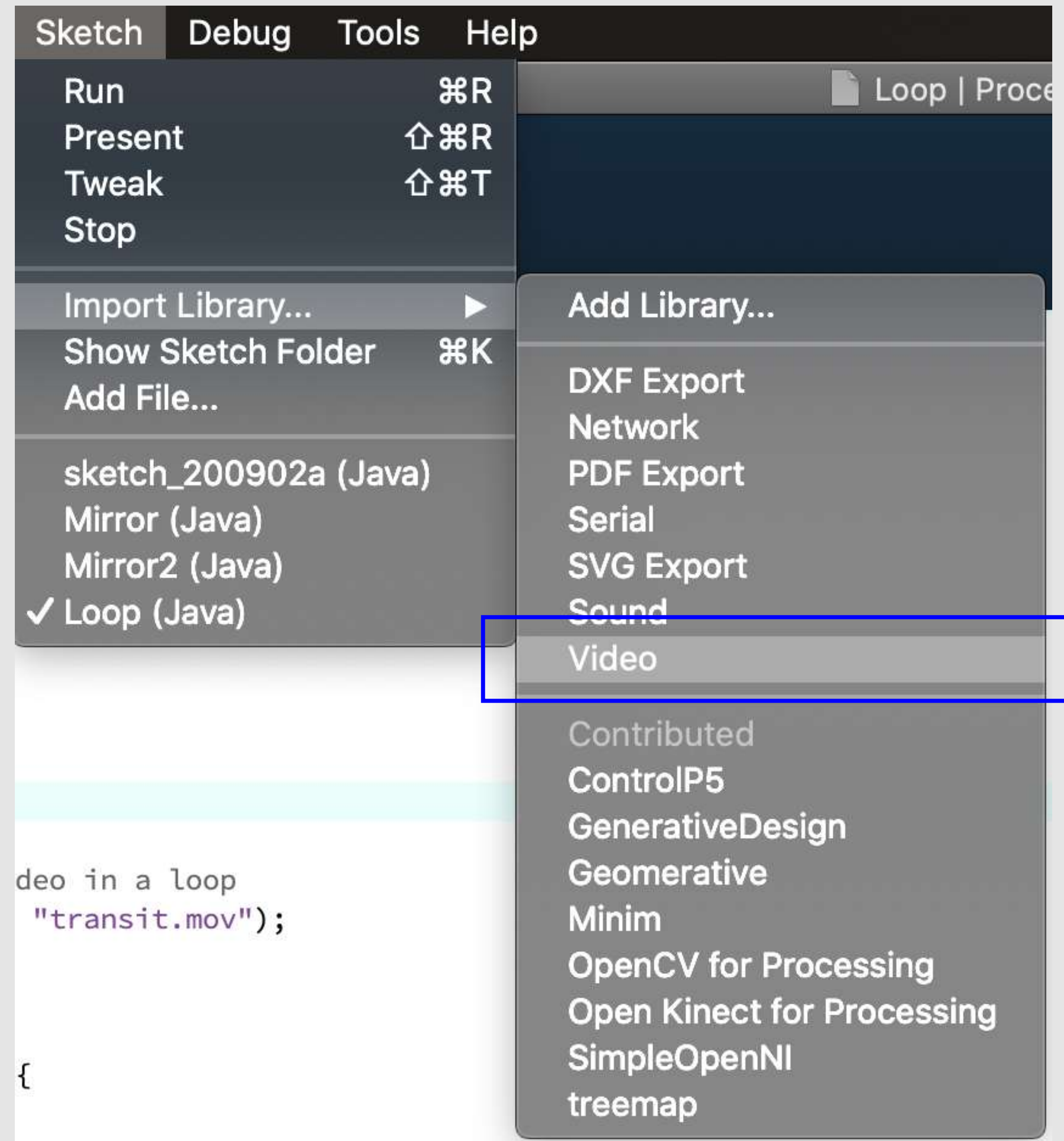
# Processing Tutorial 3

Video & Animation

# Video Library

Same as Minim, you will need a video library to get the video to work

It is a default library so no external download is needed



# Video Loop

Open the example  
"Video > Movie > Loop"



The screenshot shows the Processing IDE interface with the 'Loop' example code open. The window title is 'Loop | Processing 3.5.4'. The code is as follows:

```
1 /**
2  * Loop.
3  *
4  * Shows how to load and play a QuickTime movie file.
5  *
6  */
7
8 import processing.video.*;
9
10 Movie movie;
11
12 void setup() {
13   size(1280, 720);
14   background(0);
15   // Load and play the video in a loop
16   movie = new Movie(this, "transit.mov");
17   movie.loop();
18 }
19
20 void movieEvent(Movie m) {
21   m.read();
22 }
23
24 void draw() {
25   //if (movie.available() == true) {
26   //  movie.read();
27   //}
```

# Video Loop

import library

```
import processing.video.*;
```

creating object called movie

```
Movie movie;
```

setting up the sketch

```
void setup() {  
  size(1280, 720);  
  background(0);
```

load and play the video

```
  // Load and play the video in a loop  
  movie = new Movie(this, "transit.mov");  
  movie.loop();  
}
```

read the movie whenever a new frame is available

```
void movieEvent(Movie m) {  
  m.read();  
}
```

draw the movie on screen

```
void draw() {  
  //if (movie.available() == true) {  
  //  movie.read();  
  //}  
  image(movie, 0, 0, width, height);  
}
```

# Video Commands

- play() play once
- pause() pause the video
- stop() stop the video
- loop() the video will replay at the end
- noLoop() cause a looping video to stop looping
- jump(x) skip to the second you indicated
- duration() returns the length of the movie in seconds
- time() returns where you are in the video in seconds
- speed(x) change the speed of playback (negative = backwards)

<https://www.instagram.com/p/B7qIk1Ll4q8/>

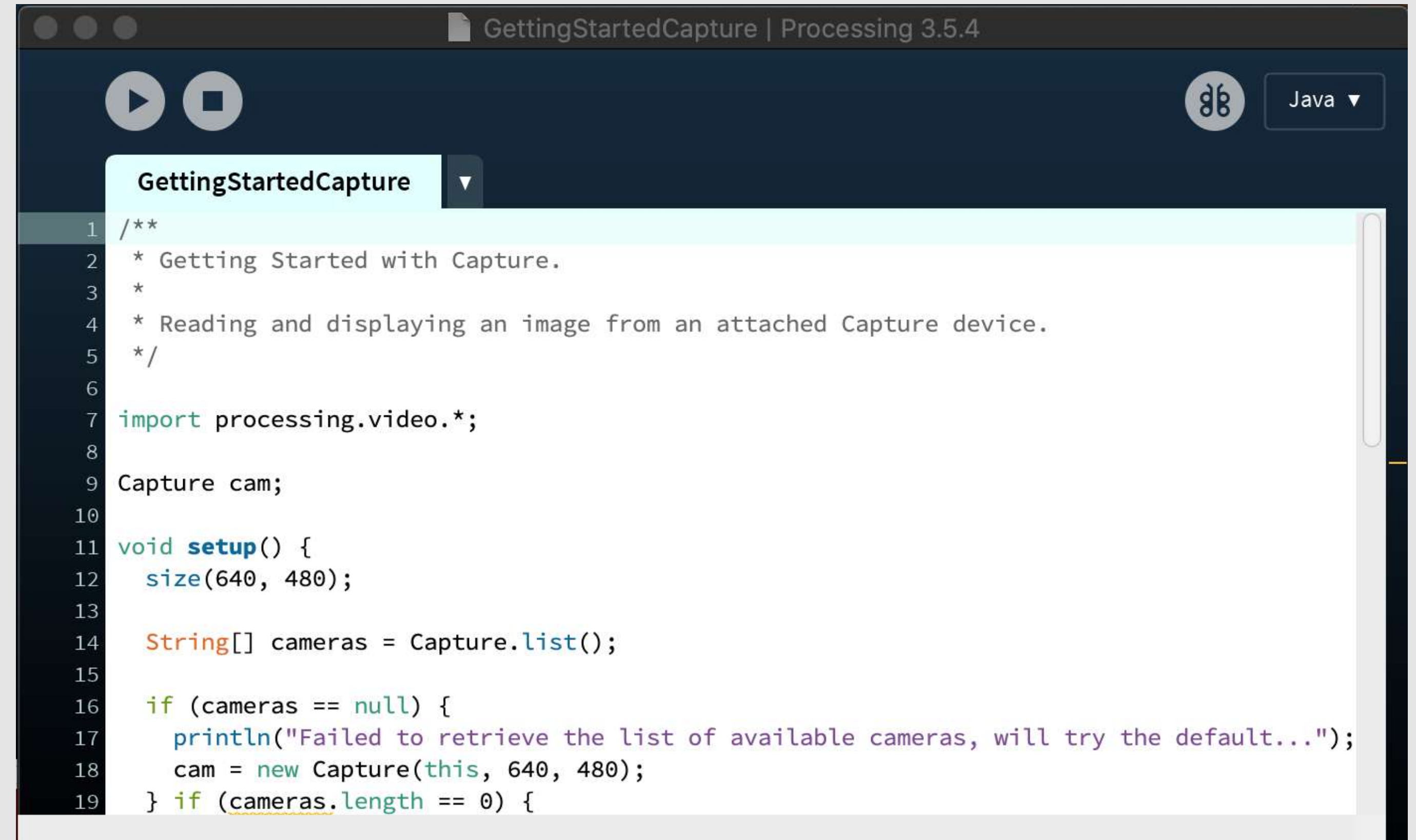


# Video Capture

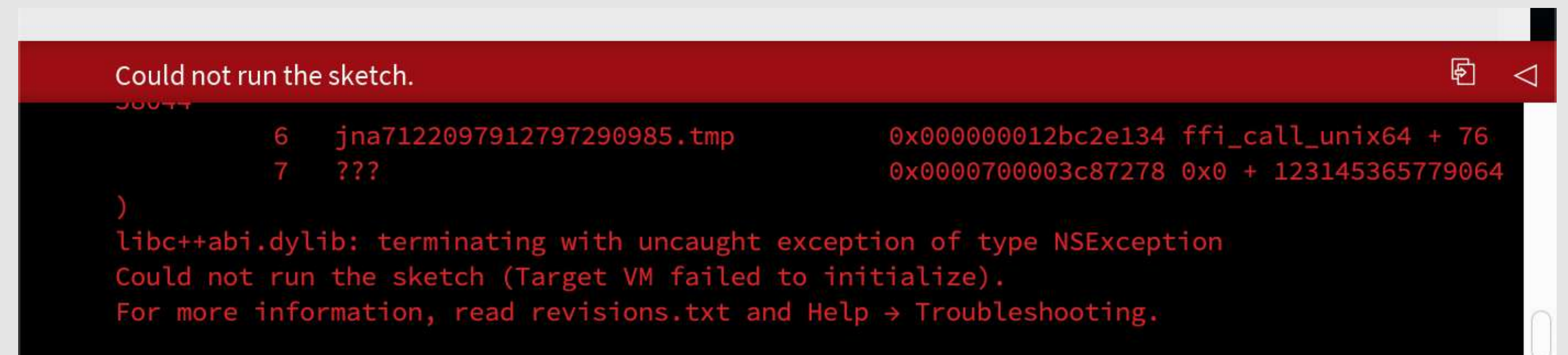
Open example

“Video > Capture > GettingStartedCapture”

Note: for some reason, this does not work on Mac Catalina



```
GettingStartedCapture | Processing 3.5.4
GettingStartedCapture
1 /**
2  * Getting Started with Capture.
3  *
4  * Reading and displaying an image from an attached Capture device.
5  */
6
7 import processing.video.*;
8
9 Capture cam;
10
11 void setup() {
12   size(640, 480);
13
14   String[] cameras = Capture.list();
15
16   if (cameras == null) {
17     println("Failed to retrieve the list of available cameras, will try the default...");
18     cam = new Capture(this, 640, 480);
19   } if (cameras.length == 0) {
```



```
Could not run the sketch.
58044
6   jna7122097912797290985.tmp      0x000000012bc2e134 ffi_call_unix64 + 76
7   ???                               0x0000700003c87278 0x0 + 123145365779064
)
libc++abi.dylib: terminating with uncaught exception of type NSException
Could not run the sketch (Target VM failed to initialize).
For more information, read revisions.txt and Help → Troubleshooting.
```

# Video Capture

import library

```
import processing.video.*;
```

Creating object

```
Capture cam;
```

Setting up the sketch  
creating a list of available cameras

```
void setup() {
```

```
  size(640, 480);
```

```
  String[] cameras = Capture.list();
```

```
  if (cameras == null) {
```

```
    println("Failed to retrieve the list of available cameras, will try the default...");
```

```
    cam = new Capture(this, 640, 480);
```

```
  } if (cameras.length == 0) {
```

```
    println("There are no cameras available for capture.");
```

```
    exit();
```

```
  } else {
```

```
    println("Available cameras:");
```

```
    printArray(cameras);
```

tell user if there is camera or not

initialise the object (camera[0])

```
    // The camera can be initialized directly using an element  
    // from the array returned by list():
```

```
    cam = new Capture(this, cameras[0]);
```

```
    // Or, the settings can be defined based on the text in the list  
    //cam = new Capture(this, 640, 480, "Built-in iSight", 30);
```

```
    // Start capturing the images from the camera
```

```
    cam.start();
```

start the camera

if camera is available, read from the camera

```
void draw() {
```

```
  if (cam.available() == true) {
```

```
    cam.read();
```

```
  } image(cam, 0, 0, width, height);
```

```
  // The following does the same as the above image() line, but  
  // is faster when just drawing the image without any additional  
  // resizing, transformations, or tint.
```

```
  //set(0, 0, cam);
```

```
}
```

draw the image onto the sketch



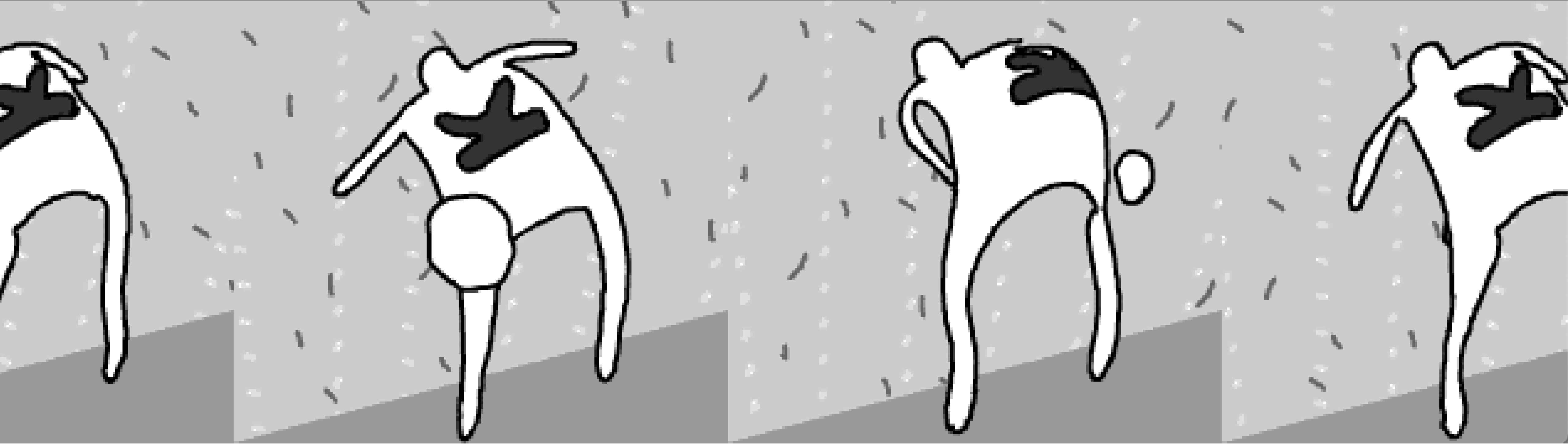
# Ways to Use Video Capture

**Look at examples:**

**Video > Capture > ColorSorting**

**Video > Capture > Mirror**

**Video > Capture > TimeDisplacement**



Let's see some examples

**Topics > Animation > Sequential**  
**Topics > Animation > AnimatedSprite**

# Resources

## **Processing Video References**

<https://processing.org/reference/libraries/video/index.html>

## **TheCodingTrain on Object Oriented Programming**

[https://www.youtube.com/playlist?list=PLRqwX-V7Uu6bb7z2IJatIzwzlg\\_5yvL4i](https://www.youtube.com/playlist?list=PLRqwX-V7Uu6bb7z2IJatIzwzlg_5yvL4i)

## **TheCodingTrain on Arrays**

<https://www.youtube.com/playlist?list=PLRqwX-V7Uu6b09RKxH0bluh-aPgrrvb4a>

## **TheCodingTrain on Image Processing (includes Animation)**

[https://www.youtube.com/playlist?list=PLRqwX-V7Uu6YB9x6f23CBftiyx0u\\_5s09](https://www.youtube.com/playlist?list=PLRqwX-V7Uu6YB9x6f23CBftiyx0u_5s09)

## **TheCodingTrain on Video (more advanced stuff like pixel tracking)**

<https://www.youtube.com/playlist?list=PLRqwX-V7Uu6bw0bVn4M63p8TMJf30hGy8>

**Next week: Interactions**

# Thanks!

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