Color Tracking

CODE

```
import processing.video.*;

// Variable for capture device
Capture video;

// A variable for the color we are searching for.
color trackColor;

void setup() {
  size(320,240);
  video = new Capture(this,width,height,15);
  video.start();
  // Start off tracking for red
  trackColor = color(255,255,255);
  smooth();
}

void draw() {
  // Capture and display the video
  if (video.available()) {
    video.read();
  }
  video.loadPixels();
  image(video,0,0);

  // Before we begin searching, the "world record" for closest color is set to a high number that is easy for the first pixel to beat.
  float worldRecord = 500;

  // XY coordinate of closest color
  int closestX = 0;
  int closestY = 0;

  // Begin loop to walk through every pixel
  for (int x = 0; x < video.width; x ++ ) {
    for (int y = 0; y < video.height; y ++ ) {
      int loc = x + y*video.width;

      // What is current color
      color currentColor = video.pixels[loc];
      float r1 = red(currentColor);
      float g1 = green(currentColor);
      float b1 = blue(currentColor);
      float r2 = red(trackColor);
      float g2 = green(trackColor);
      float b2 = blue(trackColor);

      // Using euclidean distance to compare colors
      float d = dist(r1,g1,b1,r2,g2,b2);
      // We are using the dist( ) function to compare the current color with the color we are tracking.
```

```
// Learning Processing
// Daniel Shiffman
// http://www.learningprocessing.com

// Example 16-11: Simple color tracking
```

```
      // If current color is more similar to tracked color than
      // closest color, save current location and current difference
       if (d < worldRecord) {
         worldRecord = d;
         closestX = x;
         closestY = y;
       }
     }
   }

   // We only consider the color found if its color distance is less than 10.
   // This threshold of 10 is arbitrary and you can adjust this number depending on
how accurate you require the tracking to be.
   if (worldRecord < 10) {
     // Draw a circle at the tracked pixel
     fill(trackColor);
     strokeWeight(4.0);
     stroke(0);
     ellipse(closestX,closestY,16,16);
   }
}

void mousePressed() {
   // Save color where the mouse is clicked in trackColor variable
   int loc = mouseX + mouseY*video.width;
   trackColor = video.pixels[loc];
}
```