Chapter 1 : Color

Exercise P.1.2.2

Step 1:
In this exercise we will focus on color palettes from images. We begin by declaring some variables. As we are loading images in this exercise we must declare an image variable(img), as well as an empty colors array and set the sortMode to null. The default of sortMode is not to sort so we must set it to null.

```
var img;
var colors = [];
var sortMode = null;
```

Step 2:
We create a preload function to load our image that we want to use. This image is stored in the variable img.

```
function preload() {
  img = loadImage('data/pic1.jpg');
}
```

Step 3:
We then create a draw function. In this function we create a variable tileCount. The number of rows and columns in the grid depends on the x-value of the mouse. We also create a variable rectSize. This is used to define the size of the tiles.

```
function draw() {
  var tileCount = floor(width / max(mouseX, 5));
  var rectSize = width / tileCount;

  img.loadPixels();
  colors = [];
```

Step 4:
The fill colors for the tiles are taken by values from the color array.

```
  var i = 0;
  for (var gridY = 0; gridY < tileCount; gridY++) {
    for (var gridX = 0; gridX < tileCount; gridX++) {
      fill(colors[i]);
      rect(gridX * rectSize, gridY * rectSize, rectSize, rectSize);
      i++;
    }
  }
}
```

Step 5:

The function ‘saveASE’ allows an array of colors to be saved as an Adobe Swatch Exchange file. This can be opened up as a color palette in an adobe program. The keys 1-4 load different images to the canvas. The keys 5-9 control the sortMode to change the Hue, Saturation and Brightness of the chosen image.

```
function keyReleased() {
  if (key == 'c' || key == 'C') writeFile([gd.ase.encode(colors)],
  gd.timestamp(), 'ase');
  if (key == 's' || key == 'S') saveCanvas(gd.timestamp(), 'png');

  if (key == '1') img = loadImage('data/pic1.jpg');
  if (key == '2') img = loadImage('data/pic2.jpg');
  if (key == '3') img = loadImage('data/pic3.jpg');
  if (key == '4') img = loadImage('data/pic4.jpg');

  if (key == '5') sortMode = null;
  if (key == '6') sortMode = gd.HUE;
  if (key == '7') sortMode = gd.SATURATION;
  if (key == '8') sortMode = gd.BRIGHTNESS;
  if (key == '9') sortMode = gd.GRAYSCALE;
}
```