

```

1  package Assignment_4;
2
3
4  import Media.*;           // for picture and pictureDisplayer
5  import java.awt.*;        // for Color objects and methods
6  import static java.lang.Math.*; // for math constants and functions
7  import static java.awt.Color.*; // for Color constants
8
9
10 /** This class ...
11  *
12  * @author <your name>
13  * @version 1.0 (<date>)
14  */
15
16
17 public class Luminance
18 {
19     private PictureDisplayer display;
20     private Picture backG;
21     private Picture foreG;
22     // instance variables
23
24
25     /** This constructor ...
26     */
27     public Luminance ( )
28     {
29         display = new PictureDisplayer();
30         backG = new Picture();
31         display.placePicture(backG);
32         display.waitForUser();
33         foreG = new Picture();
34         display.placePicture(foreG);
35         display.waitForUser();
36         blend(backG, foreG);
37         display.close();
38         foreG.save();
39         // local variables
40
41         // statements including call to method
42
43     }; // constructor
44
45     private void blend(Picture pic1, Picture pic2)
46     {
47         Pixel backP, foreP;
48         double bg , fg;
49         double bb , fb;
50         double br , fr;
51         double factor;
52         double bAvg , fAvg;
53
54         while(pic1.hasNext() & pic2.hasNext())
55         {
56             backP = pic1.next();
57
58             bg = backP.getGreen();
59             bb = backP.getBlue();
60             br = backP.getRed();
61
62             bAvg = (br+bg+bb)/3;
63             bAvg = clip(bAvg);
64
65             foreP = pic2.next();
66
67             fg = foreP.getGreen();
68             fb = foreP.getBlue();
69             fr = foreP.getRed();
70
71             fAvg = (fr+fg+fb)/3;
72             fAvg = clip(fAvg);
73             factor = (bAvg/fAvg);
74
75             foreP.setGreen((int)(fg*factor));
76             foreP.setBlue((int)(fb*factor));

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77         foreP.setRed((int)(fr*factor));
78     }
79 }
80
81 private int clip(double val)
82 {
83     if(val>=127.5) val = 127.5;
84     return (int)val;
85 }
86
87 // methods
88
89
90
91
92 public static void main ( String[] args ) { Luminance s = new Luminance(); };
93
94
95 } // Luminance

```