Adam Howard

Completed   Original


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#Adam Howard, October 13th, 2021
import java.awt.Font as Font
import random
def collage():
  setMediaPath()
  pic_list = []
  for i in range(6):
    pic = makePicture(getMediaPath("ball.jpg"))
    pic_list.append(pic)
  original = pic_list[0]
  canvas = makeEmptyPicture(1000, 736, black)
  header = makeEmptyPicture(1000, 122, white) #rounded down 1/6 of canvas height
  sig = scaleDown(makePicture(getMediaPath("signature.jpg")), 15)

  mod1 = randomColorSwap(pic_list[1])
  mod2 = mirrorRight(pic_list[2])
  mod3 = posterizeBWR(pic_list[3])
  mod4 = posterize(pic_list[4])
  mod5 = negative(pic_list[5])

  copy(header, canvas, 0, 0)
  #62 below header (188 free space between pics vertically); 111 is 1/4 empty space of 445
  copy(original, canvas, 111, 184)
  copy(mod1, canvas, 407, 184) #111 to the right of original
  copy(mod2, canvas, 703, 184)
  copy(mod3, canvas, 111, 459) #62 below original
  copy(mod4, canvas, 407, 459)
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    copy(mod5, canvas, 703, 459)
    chromaSig(sig, canvas, getWidth(canvas) - 120, getHeight(canvas) - 50)

    myFont = makeStyle("SansSerif", Font.PLAIN, 56)
    myFont2 = makeStyle("SansSerif", Font.PLAIN, 36)
    addTextWithStyle(canvas, 80, 80, "Which type of Ball are you today?", myFont, black)
    addTextWithStyle(canvas, 140, 435, "Normal", myFont2, white)
    addTextWithStyle(canvas, 460, 435, "Sad", myFont2, white)
    addTextWithStyle(canvas, 710, 435, "R O U N D", myFont2, white)
    addTextWithStyle(canvas, 130, 710, "Demonic", myFont2, white)
    addTextWithStyle(canvas, 460, 710, "Pain", myFont2, white)
    addTextWithStyle(canvas, 760, 710, "Evil", myFont2, white)
    writePictureTo(canvas, "Adam_Howard.jpg")

    explore(canvas)

def chromaSig(source, target, targetX, targetY):
    for x in range(0, getWidth(source)):
        for y in range(0, getHeight(source)):
            px = getPixel(source, x, y)
            color = getColor(px)
            targ = getPixel(target, x + targetX, y + targetY)
            if distance(black, color) < 200:
                setColor(targ, green)
def negative(pic):
    for p in getPixels(pic):
        r = 255-getRed(p)
        g = 255-getGreen(p)
        b = 255-getBlue(p)
        setColor(p, makeColor(r,g,b))
    return pic

def mirrorVertical(pic):
    width = getWidth(pic)
    mirrorPoint = width / 2
    for x in range(0,mirrorPoint):
        for y in range(0,getHeight(pic)):
            rightPixel = getPixel(pic,width-x-1,y)
            leftPixel = getPixel(pic,x,y)
            color = getColor(leftPixel)
            setColor(rightPixel,color)
    return pic


def randomColorSwap(pic):
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      for p in getPixels(pic):
        i = random.randrange(6)
        if i == 0:
          r = getRed(p)
          g = getGreen(p)
          b = getBlue(p)
        elif i == 1:
          g = getRed(p)
          b = getGreen(p)
          r = getBlue(p)
        elif i == 2:
          b = getRed(p)
          r = getGreen(p)
          g = getBlue(p)
        elif i == 3:
          g = getRed(p)
          r = getGreen(p)
          b = getBlue(p)
        elif i == 4:
          r = getRed(p)
          b = getGreen(p)
          g = getBlue(p)
        else:
          g = getRed(p)
          b = getGreen(p)
          r = getBlue(p)
        setColor(p, makeColor(r,g,b))
      return pic

def mirrorRight(pic):
    width = getWidth(pic)
    mirrorPoint = width / 2
    for x in range(mirrorPoint, getWidth(pic)):
        for y in range(0,getHeight(pic)):
            rightPixel = getPixel(pic,width-x-1,y)
            leftPixel = getPixel(pic,x,y)
            color = getColor(leftPixel)
            setColor(rightPixel,color)
    return pic

def posterizeBWR(pic):
    for p in getPixels(pic):
        r = getRed(p)
        g = getGreen(p)
        b = getBlue(p)
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      luminance = (r+g+b)/3
      if luminance < 64:
         setColor(p,black)
      elif luminance > 120:
         setColor(p,white)
      else:
         setColor(p,red)
   return pic

def posterize(pic):
   for p in getPixels(pic):
      r = getRed(p)
      b = getBlue(p)
      g = getGreen(p)

      if (r<64):
          newR= 31
      if (r>63 and r<128):
          newR= 95
      if (r>127 and r<192):
          newR= 159
      if (r>191 and r<256):
          newR= 223

      if (g<64):
          newG= 31
      if (g>63 and g<128):
          newG= 95
      if (g>127 and g<192):
          newG= 159
      if (g>191 and g<256):
          newG= 223

      if (b<64):
          newB= 31
      if (b>63 and b<128):
          newB= 95
      if (b>127 and b<192):
          newB= 159
      if (b>191 and b<256):
          newB= 223

      setColor(p, makeColor(newR,newG,newB))
   return pic
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def copy(source, target, targX, targY):
  targetX = targX
  for sourceX in range(0,getWidth(source)):
    targetY = targY
    for sourceY in range(0,getHeight(source)):
      px = getPixel(source,sourceX,sourceY)
      tx = getPixel(target,targetX,targetY)
      setColor(tx,getColor(px))
      targetY += 1
    targetX += 1

def scale(src, canvas, factor):
  sourceX = 0
  for targetX in range(0, int(getWidth(src) * factor)):
    sourceY = 0
    for targetY in range(0, int(getHeight(src) * factor)):
      color = getColor(getPixel(src, int(sourceX), int(sourceY)))
      setColor(getPixel(canvas, targetX, targetY), color)
      sourceY = sourceY + 1.0 / factor
    sourceX = sourceX + 1.0 / factor

def scaleDown(pic, factor):
  canvas = makeEmptyPicture(int(getWidth(pic) / factor), int(getHeight(pic) / factor))
  scale(pic, canvas, 1.0 / factor)
  return(canvas)


collage()
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