Cobie Fritsch

Completed

Original

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def collage():
   pic = makePicture(getMediaPath('turtle-dragon.jpg'))
   width = getWidth(pic)
   height = getHeight(pic)
   canvas = makeEmptyPicture(width,height)
   original(pic, canvas, 0, width/5, 0, height, 0)
   negative(pic, canvas, width/5, 2*(width/5), 0, height, width/5)
   grayscale(pic, canvas, 2*(width/5), 3*(width/5), 0, height,2*(width/5))
   posterize(pic, canvas, 3*(width/5), 4*(width/5),0,height,3*(width/5))
   edge_detect(pic, canvas, 4*(width/5), (width-1), 0, (height-1), 4*(width/5))
   stripes(pic, canvas, 0, width, 0, height,0)
   repaint(canvas)

def original(pic, canvas, startx, endx, starty, endy, z):
  for x in range(startx, endx):
    for y in range(starty, endy):
      color = getColor(getPixel(pic,x,y))
      setColor(getPixel(canvas, z, y),color)
    z= z+1
```

```
def negative(pic, canvas, startx, endx, starty, endy, z):
  for x in range(startx, endx):
    for y in range(starty, endy):
      new_red = getRed(getPixel(pic, x,y))
      new_blue = getBlue(getPixel(pic, x, y))
      new_green = getGreen(getPixel(pic,x,y))
      neg_color = makeColor(255-new_red, 255-new_green, 255-new_blue)
      setColor(getPixel(canvas,z,y), neg_color)
    z= z+1

def grayscale(pic, canvas, startx, endx, starty, endy, z):
  for x in range(startx, endx):
    for y in range(starty, endy):
      intensity = (getRed(getPixel(pic,x,y))+getGreen(getPixel(pic,x,y))+getBlue(getPixel(pic,x,y))/3)
      setColor(getPixel(canvas,z,y), makeColor(intensity,intensity,intensity))
    z= z+1

def posterize(pic, canvas, startx, endx, starty, endy, z):
  for x in range(startx, endx):
    for y in range(starty, endy):
      new_red = getRed(getPixel(pic, x,y))
      new_blue = getBlue(getPixel(pic, x, y))
      new_green = getGreen(getPixel(pic,x,y))
      luminance = (new_red + new_blue + new_green)/3
      if luminance < 60:
        setColor(getPixel(canvas,z,y), pink)
      if luminance >= 60:
        setColor(getPixel(canvas, z,y), gray)
    z= z+1

def edge_detect(pic, canvas, startx, endx, starty, endy, z):
  for x in range(startx, endx):
    for y in range(starty, endy):
      new_red = getRed(getPixel(pic, x,y))
      new_blue = getBlue(getPixel(pic, x, y))
      new_green = getGreen(getPixel(pic,x,y))
      sum = new_red + new_blue + new_green
      botrt = getPixel(pic,x+1, y+1)
      sum2 = getRed(botrt) + getGreen(botrt) + getRed(botrt)
      diff = (sum2 - sum)
      color = makeColor(diff,diff,diff)
      setColor(getPixel(canvas,z,y), color)
```

```
    z=z+1

def stripes(pic, canvas, startx, endx, starty, endy, z):
  for x in range(startx,endx):
    for y in range(starty, endy,5):
      setColor(getPixel(canvas, z, y), black)
    z=z+1
```