

Jarrett Cole

Completed



Original



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from jes4py import *
#Jarrett Cole 03/11/25
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```
def collage():
    pic=makePicture(getMediaPath("horse.jpg"))
    canvas=makeEmptyPicture(498,992,red)
    pic1=scaleNumber(pic,.515)
    copy(pic1,canvas,5,5)
    lighten(pic1)
    copy(pic1,canvas,getWidth(pic1),5)
    mirrorVertical(pic1)
    copy(pic1,canvas,5,getHeight(pic1))
    greynout(pic1)
    copy(pic1,canvas,getWidth(pic1),getHeight(pic1))
    pic=makePicture(getMediaPath("horse.jpg"))
    pic1=scaleNumber(pic,.515)
    mirrorHorizontal(pic1)
    copy(pic1,canvas,5,getHeight(pic1)*2)
    darker(pic1)
    copy(pic1,canvas,getWidth(pic1),getHeight(pic1)*2)
    explore(canvas)

def scaleNumber(source_picture,scale):
    new_width = getWidth(source_picture) * scale
    new_height = getHeight(source_picture) * scale
    new_picture = makeEmptyPicture(new_width, new_height)
    source_x = 0
    for new_x in range(0,getWidth(new_picture)):
        source_y = 0
        for new_y in range(0,getHeight(new_picture)):
            color = getColor(getPixel(source_picture, int(source_x), int(source_y)))
            setColor(getPixel(new_picture, new_x, new_y), color)
            source_y = source_y + 1/scale
        source_x = source_x + 1/scale
    return new_picture

def copy(Opic,Npic,newX,startY):
    for x in range(0,getWidth(Opic)):
        newY=startY
        for y in range(0,getHeight(Opic)):
            color=getColor(getPixel(Opic,x,y))
            setColor(getPixel(Npic,newX,newY), color)
            newY=newY+1
        newX=newX+1
```

```

def lighten(picture):
    for pixel in getPixels(picture):
        color = getColor(pixel)
        color = makeLighter(makeLighter(color))
        setColor(pixel, color)

def mirrorVertical(picture):
    width = getWidth(picture)
    mirror_point = width // 2
    for x in range(0, mirror_point):
        for y in range(0, getHeight(picture)):
            left_pixel = getPixel(picture, x, y)
            right_pixel = getPixel(picture, width - x - 1, y)
            color = getColor(left_pixel)
            setColor(right_pixel, color)

def greyscale(source):
    for pixel in getPixels(source):
        red_value = getRed(pixel)
        green_value = getGreen(pixel)
        blue_value = getBlue(pixel)
        luminance = (red_value + green_value + blue_value) // 3
        if luminance < 50:
            setColor(pixel, black)
        elif luminance < 150:
            setColor(pixel, darkGray)
        elif luminance < 200:
            setColor(pixel, lightGray)
        else:
            setColor(pixel, white)

def mirrorHorizontal(picture):
    height = getHeight(picture)
    mirror_point = height // 2
    for y in range(0, mirror_point):
        for x in range(0, getWidth(picture)):
            top_pixel = getPixel(picture, x, y)
            bottom_pixel = getPixel(picture, x, height - y - 1)
            color = getColor(top_pixel)
            setColor(bottom_pixel, color)

def darker(picture):
    for pixel in getPixels(picture):
        color=getColor(pixel)
        color=makeDarker(makeDarker(color))
        setColor(pixel, color)

```