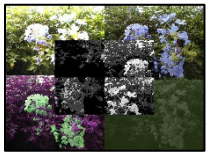
Flannery Olds

Completed



Original

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#Flannery Olds 3/10/2026

from mediaComp import *

def lightening(pic):
    for pixel in getPixels(pic):
        color = getColor(pixel)
        color = makeLighter(color)
        color = makeLighter(color)
        setColor(pixel, color)
    return pic

def darkening(pic):
    for pixel in getPixels(pic):
        color = getColor(pixel)
        color = makeDarker(color)
        color = makeDarker(color)
        setColor(pixel, color)
    return pic

def blur(picture):
    blur_picture = duplicatePicture(picture)
    for x in range(1, getWidth(picture) - 1):
        for y in range(1, getHeight(picture) - 1):
            center = getPixelAt(blur_picture, x, y)
            left = getPixelAt(picture, x - 1, y)
            right = getPixelAt(picture, x + 1, y)
            top = getPixelAt(picture, x, y - 1)
            bottom = getPixelAt(picture, x, y + 1)
            new_red = (getRed(center) + getRed(left) + getRed(right) + getRed(top)+getRed(bottom))//5
            new_green = (getGreen(center) + getGreen(left) + getGreen(right) + getGreen(top) +getGreen(bottom))//5
            new_blue = (getBlue(center) + getBlue(left) + getBlue(right) + getBlue(top) + getBlue(bottom))//5
            setColor(center, makeColor(new_red, new_green, new_blue))
    return blur_picture
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def scale(number, source_picture):
    new_width = getWidth(source_picture) * number
    new_height = getHeight(source_picture) * number
    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(getPixelAt(source_picture, int(source_x), int(source_y)))
            setColor(getPixelAt(new_picture, new_x, new_y), color)
            source_y = source_y + (1 / number)
        source_x = source_x + (1 / number)
    return new_picture

def copy(source_picture, target_picture, number_x, number_y):
    width = (getWidth(source_picture))
    height = (getHeight(source_picture))
    offset_x = ((getWidth(target_picture)) - width) // number_x
    offset_y = ((getHeight(target_picture)) - height) // number_y
    for x in range(width):
        for y in range(height):
            color = getColor(getPixelAt(source_picture, x, y))
            setColor(getPixelAt(target_picture, x + offset_x, y + offset_y), color)
    return target_picture

def colorSwap(picture):
    for pixel in getPixels(picture):
        redval = getRed(pixel)
        greenval = getGreen(pixel)
        blueval = getBlue(pixel)
        setRed(pixel, blueval)
        setBlue(pixel, greenval)
        setGreen(pixel, redval)
    return picture

def grayscale(picture):
    for pixel in getPixels(picture):
        intensity = (getRed(pixel) + getGreen(pixel) + getBlue(pixel)) // 3
        setColor(pixel, makeColor(intensity, intensity, intensity))
    return picture

def square(pic, finalPic, startX, startY, endX, endY, targetX, targetY):
    for x in range(startX, endX):
        for y in range(startY, endY):
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            pixel = getPixelAt(pic, x, y)
            newPixel = getPixelAt(finalPic, x+targetX, y+targetY)
            setColor(newPixel, getColor(pixel))

def pinwheel(pic):
    picWidth = getWidth(pic)
    picHeight = getHeight(pic)
    finalPic = makeEmptyPicture(picWidth, picHeight, black)
    square(pic, finalPic, 0, 0, picWidth//2, picHeight//2, picWidth//2, 0)
    square(pic, finalPic, picWidth//2, 0, picWidth, picHeight//2, 0, picHeight//2)
    square(pic, finalPic, picWidth//2, picHeight//2, picWidth, picHeight, -(picWidth//2), 0)
    square(pic, finalPic, 0, picHeight//2, picWidth//2, picHeight, 0, -picHeight//2)
    return(finalPic)

def posturize(pic):
    for pixel in getPixels(pic):
        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)
    return pic

def average(pic):
    for pixel in getPixels(pic):
        averageRed = ((getRed(pixel) + 127) // 2)
        averageGreen = ((getGreen(pixel) + 181) // 2)
        averageBlue = ((getBlue(pixel) + 63) // 2)
        setRed(pixel, averageRed)
        setGreen(pixel, averageGreen)
        setBlue(pixel, averageBlue)
    return pic

def collage():
    canvas = makeEmptyPicture(960, 700, white)
    pic_one = makePicture(getMediaFolder("blueShrub.jpg"))
    for _ in range(2):
        pic_one = blur(pic_one)
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smaller = scale(0.75, pic_one)
for _ in range(1):
    smaller = lightening(smaller)
copy(smaller, canvas, 960, 700)
pic_two = makePicture(getMediaFolder("blueShrub.jpg"))
for _ in range(2):
    pic_two = colorSwap(pic_two)
smaller_two = scale(0.75, pic_two)
copy(smaller_two, canvas, 960, 1)
pic_three = makePicture(getMediaFolder("blueShrub.jpg"))
grayed = grayscale(pic_three)
averaged = average(grayed)
dark = darkening(averaged)
smaller_three = scale(0.75, dark)
copy(smaller_three, canvas, 1, 1)
pic_four = makePicture(getMediaFolder("blueShrub.jpg"))
smaller_four = scale(0.75, pic_four)
copy(smaller_four, canvas, 1, 700)
final_pic = makePicture(getMediaFolder("blueShrub.jpg"))
smaller_final = scale(0.75, final_pic)
pinwheel_pic = pinwheel(smaller_final)
posturized = posturize(pinwheel_pic)
copy(posturized, canvas, 2, 2)
show(canvas)
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