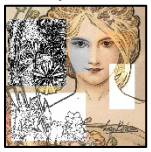
Lucy Blackmer

Completed



Original



```
from mediaComp import*
# Project 2
# Lucy Blackmer
# 10/16/26

def collage():
    setMediaFolder()
    orig_picture = makePicture(getMediaFolder("Photo1.jpeg"))
    canvas = createCanvas(orig_picture)
    posterize(canvas)
    grayscale(canvas)
    lighten(canvas)
    sepia(canvas)
    signature(canvas)
    edgeDetect(canvas)
    pictureTool(canvas)

def createCanvas(orig_picture):
    canvas = makeEmptyPicture(getWidth(orig_picture), getHeight(orig_picture), black)
    target_x = 0
    for source_x in range(0, getWidth(orig_picture)):
        target_y = 0
        for source_y in range(0, getHeight(orig_picture)):
            source_pixel = getPixelAt(orig_picture, source_x, source_y)
            color = getColor(source_pixel)
            target_pixel = getPixelAt(canvas, target_x, target_y)
            setColor(target_pixel, color)
            target_y = target_y + 1
        target_x = target_x + 1
    return canvas

def posterize(canvas):
    for x in range(25, 400):
        for y in range(435, 675):
            pixel = getPixelAt(canvas, x, y)
            red_value = getRed(pixel)
            green_value = getGreen(pixel)
            blue_value = getBlue(pixel)
            luminance = (red_value + green_value + blue_value) // 3
            if luminance <= 100:
                setColor(pixel, darkGray)
            else:
                setColor(pixel, white)

def grayscale(canvas):
    for x in range(320, 420):
        for y in range(155, 330):
            pixel = getPixelAt(canvas, x, y)
            intensity = (getRed(pixel) + getGreen(pixel) + getBlue(pixel)) / 3
```

```
            setColor(pixel, makeColor(intensity, intensity, intensity))

def lighten(canvas):
    for x in range(515, 645):
        for y in range(290, 515):
            pixel = getPixelAt(canvas, x, y)
            color = getColor(pixel)
            color = makeLighter(color)
            color = makeLighter(color)
            setColor(pixel, color)

def edgeDetect(canvas):
    for x in range(10, 300):
        for y in range(65, 400):
            pixel = getPixelAt(canvas, x, y)
            if y < getHeight(canvas) - 1 and x < getWidth(canvas) - 1:
                bottom_right_pixel = getPixelAt(canvas, x+1, y+1)
                this_luminance = luminance(pixel)
                bottom_right_luminance = luminance(bottom_right_pixel)
                if abs(bottom_right_luminance - this_luminance) > 10:
                    setColor(pixel, black)
                else:
                    setColor(pixel, white)

# This is used to calculate the luminance for the edgeDetect function
def luminance(pixel):
    red_value = getRed(pixel)
    green_value = getGreen(pixel)
    blue_value = getBlue(pixel)
    return (red_value + green_value + blue_value) // 3

def sepia(canvas):
    for x in range(450, 630):
        for y in range(130, 215):
            pixel = getPixelAt(canvas, x, y)
            red_value = getRed(pixel)
            blue_value = getBlue(pixel)

            if red_value < 63:
                red_value = red_value * 1.1
                blue_value = blue_value * 0.9
            elif red_value < 192:
                red_value = red_value * 1.15
                blue_value = blue_value * 0.85
            else:
                red_value = red_value * 1.08
                if red_value > 255:
                    red_value = 255
                blue_value = blue_value * 0.93
            setRed(pixel, red_value)
            setBlue(pixel, blue_value)

def signature(canvas):
    background = makePicture(getMediaFolder("Signature.jpeg"))
    for background_pixel in getPixels(background):
        x = getX(background_pixel)
        y = getY(background_pixel)
        if distance(getColor(background_pixel), black) < 350:
            source_pixel = getPixelAt(canvas, x, y)
            setColor(source_pixel, darkGray)
```