Lorelei Parsons

Completed



Original



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#Project 2 -- Lorelei Parsons October 14, 2026
from mediaComp import*
#Make a collage by altering the image four times!


def collage():
    makePicture(getMediaFolder("Cologne 7-2026.jpg"))
    empty = makeEmptyPicture(1000, 667)
    stepOne(empty)
    stepTwo(empty)
    stepThree(empty)
    stepFour(empty)
    stepFive(empty)
    pictureTool(empty)


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def stepOne(empty):
    picture = makePicture(getMediaFolder("Cologne 7-2026.jpg"))
    newPic = scale(picture, 0.9)
    edgeDetect(newPic)
    mirrorVertical(newPic)
    copyPic(newPic, empty, getWidth(empty) // 20 , getHeight(empty) // 20)

def stepTwo(empty):
    picture = makePicture(getMediaFolder("Cologne 7-2026.jpg"))
    newPic = scale(picture, 0.8)
    mirrorHorizontal(newPic)
    copyPic(newPic, empty, getWidth(empty) // 10, getHeight(empty) // 10)

def stepThree(empty):
    picture = makePicture(getMediaFolder("Cologne 7-2026.jpg"))
    newPic = scale(picture, 0.7)
    posterize(newPic)
    copyPic(newPic, empty, int(getWidth(empty) * 0.15), int(getHeight(empty) * 0.15))

def stepFour(empty):
    picture = makePicture(getMediaFolder("Cologne 7-2026.jpg"))
    newPic = scale(picture, 0.5)
    copyPic(newPic, empty, int(getWidth(empty) * 0.25), int(getHeight(empty) * 0.25))

def stepFive(empty):
    picture = makePicture(getMediaFolder("my name.jpg"))
    newPic = scale(picture, 0.1)
    chromakey(empty, newPic, 700, 560)


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def posterize(picture):
    for pixel in getPixels(picture):
        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, black)
        else:
            setColor(pixel, white)


def edgeDetect(picture):
    for pixel in getPixels(picture):
        x = getX(pixel)
        y = getY(pixel)
        if y < getHeight(picture) - 1 and x < getWidth(picture) - 1:
            bottom_right_pixel = getPixelAt(picture, 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, pink)
            else:
                setColor(pixel, orange)


def luminance(pixel):
    red_value = getRed(pixel)
    green_value = getGreen(pixel)
    blue_value = getBlue(pixel)
    return (red_value + green_value + blue_value) // 3


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 = getPixelAt(picture, x, y)
            right_pixel = getPixelAt(picture, width - x - 1, y)
            color = getColor(left_pixel)
            setColor(right_pixel, color)


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

    new_width = int(width * n)
    new_height = int(height * n)

    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/n
        source_x = source_x + 1/n
    return new_picture


def copyPic(source_picture, new_picture, startX, startY):
    new_x = startX
    for source_x in range(0,getWidth(source_picture)):
        new_y = startY
        for source_y in range(0,getHeight(source_picture)):
            color = getColor(getPixelAt(source_picture, (source_x), (source_y)))
            setColor(getPixelAt(new_picture, new_x, new_y), color)
            new_y = new_y + 1
        new_x = new_x + 1


def chromakey(background, source, startX, startY):
    for background_pixel in getPixels(source):
        x = getX(background_pixel)
        y = getY(background_pixel)
        if distance(black, getColor(background_pixel)) < 225:
            source_pixel = getPixelAt(background, x + startX, y + startY)
            setColor(source_pixel, white)
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