

Levi Johnson

Completed



Original



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from mediaComp import *
#Name: Levi Johnson#
#Title: The 6 Swans#
#Date finished: 10/18/25#
folder = getMediaFolder()

def copy_img(p1, p2, x1, y1):
    for y in range(getHeight(p1)):
        for x in range(getWidth(p1)):
            dx = x1 + x
            dy = y1 + y
            if dx < getWidth(p2) and dy < getHeight(p2):
                a = getPixelAt(p1, x, y)
                b = getPixelAt(p2, dx, dy)
                setColor(b, getColor(a))

#mirrors picture#
def mirror(p):
    w = getWidth(p)
    h = getHeight(p)
    newp = makeEmptyPicture(w, h)
    for y in range(h):
        for x in range(w):
            a = getPixelAt(p, x, y)
            b = getPixelAt(newp, w - 1 - x, y)
            setColor(b, getColor(a))
    return newp

#adds grayscale to picture#
def gray(p):
    w = getWidth(p)
    h = getHeight(p)
    newp = makeEmptyPicture(w, h)
    for y in range(h):
        for x in range(w):
            a = getPixelAt(p, x, y)
            v = (getRed(a) + getGreen(a) + getBlue(a)) // 3
            b = getPixelAt(newp, x, y)
            setRed(b, v)
            setGreen(b, v)
            setBlue(b, v)
    return newp

#lightens picture#
def light(p):
    w = getWidth(p)
    h = getHeight(p)
    newp = makeEmptyPicture(w, h)
    for y in range(h):
        for x in range(w):
            a = getPixelAt(p, x, y)
            b = getPixelAt(newp, x, y)
            setRed(b, min(255, getRed(a) + 50))
            setGreen(b, min(255, getGreen(a) + 50))
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        setBlue(b, min(255, getBlue(a) + 50))
    return newp
#scales picture down#
def scale(p, nw, nh):
    sw = getWidth(p)
    sh = getHeight(p)
    newp = makeEmptyPicture(nw, nh)
    for y in range(nh):
        for x in range(nw):
            a = getPixelAt(p, int(x * sw / nw), int(y * sh / nh))
            b = getPixelAt(newp, x, y)
            setColor(b, getColor(a))
    return newp
#posterizes picture#
def poster(p):
    w = getWidth(p)
    h = getHeight(p)
    newp = makeEmptyPicture(w, h)
    for y in range(h):
        for x in range(w):
            a = getPixelAt(p, x, y)
            b = getPixelAt(newp, x, y)
            setRed(b, (getRed(a)//64)*64)
            setGreen(b, (getGreen(a)//64)*64)
            setBlue(b, (getBlue(a)//64)*64)
    return newp
#main function#
def collage():
    pic = makePicture(folder + "swan.jpg")

    # scales all pictures down so that the width is under 1000 pixels wide#
    original = scale(pic, 320, 240)
    m = mirror(original)
    g = gray(original)
    l = light(original)
    s = scale(original, 160, 120)
    p = poster(original)

    can = makeEmptyPicture(320*3, 240*2)

    # row 1#
    copy_img(original, can, 0, 0)
    copy_img(m, can, 320, 0)
    copy_img(g, can, 640, 0)

    # row 2#
    copy_img(l, can, 0, 240)
    copy_img(s, can, 320 + 80, 240 + 60)
    copy_img(p, can, 640, 240)

    show(can)

#collage()

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