

Noah Warriner

Completed



Original



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#Noah Warriner
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##
##NOTE: TAKES ~20 SECONDS TO RUN
##

def collage():
    canvas = makeEmptyPicture(736,1000,black)
    #this picture is an original drawing I made, and therefore own
    picture = makePicture("Skull.jpg")
    #copy main centerpiece
    copy(picture,canvas,67,667,111,887)
    #cropped returns an image of dimensions 409x624
    cropped = crop(picture)
    #croppedsmall returns an image of dimensions 143x218
    croppedsmall = scaleDown(cropped,0.35)
    #create croppedsmall variants, reset croppedsmall variable so I can have a
    #clean slate for each
    mirrorx = mirrorX(croppedsmall)
    croppedsmall = scaleDown(cropped,0.35)
    mirrorY = mirrorY(croppedsmall)
    croppedsmall = scaleDown(cropped,0.35)
    flipx = flipX(croppedsmall)
    croppedsmall = scaleDown(cropped,0.35)
    flipy = flipY(croppedsmall)
    croppedsmall = scaleDown(cropped,0.35)
    flipxy = flipX(flipy)
    flipy = flipY(croppedsmall)
    croppedsmall = scaleDown(cropped,0.35)
    mirrorYflipx = mirrorY(flipx)
    flipx = flipX(croppedsmall)
    croppedsmall = scaleDown(cropped,0.35)
    mirrorXflipy = mirrorX(flipy)
    flipy = flipY(croppedsmall)
    croppedsmall = scaleDown(cropped,0.35)
    #copy on top with discrete values, redefining variables so they don't get changed
    copy(posterize(croppedsmall),canvas,23,166,175,392)
    croppedsmall = scaleDown(cropped,0.35)
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copy(posterize(croppedsmall), canvas, 150, 293, 40, 257)
croppedsmall = scaleDown(cropped, 0.35)
copy(negative(mirrory), canvas, 297, 440, 0, 217)
copy(posterize(flipy), canvas, 444, 587, 40, 257)
flipy = flipY(croppedsmall)
croppedsmall = scaleDown(cropped, 0.35)
copy(posterize(flipy), canvas, 571, 714, 175, 392)
flipy = flipY(croppedsmall)
flipy = flipY(croppedsmall)
#copy on bottom
copy(posterize(flipx), canvas, 23, 166, 606, 824)
flipx = flipX(croppedsmall)
croppedsmall = scaleDown(cropped, 0.35)
copy(posterize(flipx), canvas, 150, 293, 741, 959)
copy(negative(mirroryflipx), canvas, 297, 440, 781, 999)
copy(posterize(flipxy), canvas, 444, 587, 741, 959)
flipy = flipY(croppedsmall)
flipxy = flipX(flipy)
croppedsmall = scaleDown(cropped, 0.35)
copy(posterize(flipxy), canvas, 571, 714, 606, 824)
#copy on left
copy(negative(mirrorx), canvas, 0, 143, 391, 609)
#copy on right
copy(negative(mirrorxflipy), canvas, 592, 735, 391, 609)
#sign
signature = makePicture("signature.jpg")
sign(signature, canvas)
#finis coronat opus
show(canvas)

def copy(picture, canvas, sX, eX, sY, eY):
    targX = 0
    for x in range(sX, eX):
        targY = 0
        for y in range(sY, eY):
            color = getColor(getPixel(picture, targX, targY))
            setColor(getPixel(canvas, x, y), color)
            targY = targY + 1
        targX = targX + 1

def negative(picture):
    for p in getPixels(picture):
        red = getRed(p)
        green = getGreen(p)
        blue = getBlue(p)
        neg = makeColor(255-red, 255-green, 255-blue)
        color = getColor(p)
        if((distance(color, black)) > 30):
            setColor(p, neg)
    return picture

def posterize(picture):
    for p in getPixels(picture):
        r = getRed(p)
        g = getGreen(p)
        b = getBlue(p)

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    luminance = (r+g+b)/3
    if luminance<30:
        setColor(p,black)
    if(luminance>=30 and luminance<50):
        setColor(p,red)
    if(luminance>=50):
        setColor(p,white)
    return picture

def mirrorY(picture):
    width = getWidth(picture)
    for y in range(0,getHeight(picture)):
        for x in range(0,getWidth(picture)):
            color = getColor(getPixel(picture,x,y))
            rightPixel = getPixel(picture,width - x -1,y)
            setColor(rightPixel,color)
    return picture

def mirrorX(picture):
    height = getHeight(picture)
    for x in range(0,getWidth(picture)):
        for y in range(0,height):
            color = getColor(getPixel(picture,x,y))
            bottomPixel = getPixel(picture,x,height-y-1)
            setColor(bottomPixel,color)
    return picture

def flipY(picture):
    width = getWidth(picture)
    height = getHeight(picture)
    canvas = makeEmptyPicture(width,height,black)
    for y in range(0,getHeight(picture)):
        for x in range(0,getWidth(picture)):
            color = getColor(getPixel(picture,x,y))
            cp = getPixel(canvas,width -x -1,y)
            setColor(cp,color)
    return canvas

def flipX(picture):
    width = getWidth(picture)
    height = getHeight(picture)
    canvas = makeEmptyPicture(width,height,black)
    for x in range(0,width):
        for y in range(0,height):
            color = getColor(getPixel(picture,x,y))
            cp = getPixel(canvas,x,height-y-1)
            setColor(cp,color)
    return canvas

def scaleDown(picture,scale):
    width = getWidth(picture)
    height = getHeight(picture)
    canvas = makeEmptyPicture(int(width*scale),int(height*scale),black)
    targX = 0
    for x in range(0,int(width*scale)):
        targY = 0
        for y in range(0,int(height*scale)):

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    color = getColor(getPixel(picture, int(targX), int(targY)))
    setColor(getPixel(canvas, x, y), color)
    targY = targY + (1.0/scale)
    targX = targX + (1.0/scale)
return canvas

def crop(picture):
    canvas = makeEmptyPicture(409, 624, black)
    targX = 0
    for x in range(112, 521):
        targY = 0
        for y in range(96, 720):
            color = getColor(getPixel(picture, x, y))
            setColor(getPixel(canvas, targX, targY), color)
            targY = targY + 1
        targX = targX + 1
    return canvas

def sign(picture, canvas):
    for p in getPixels(picture):
        r = getRed(p)
        g = getGreen(p)
        b = getBlue(p)
        average = (r+g+b)/3
        if average < 210:
            darkred = makeColor(150, 0, 0)
            setColor(getPixel(canvas, 583+getX(p), 922+getY(p)), darkred)

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