

# Nick Combs

Completed



Originals



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# Nick Combs
# "Snow"
# 10/21/2022
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def collage():
    setMediaPath()
    original = makePicture(getMediaPath("Japan.jpg"))
    width = getWidth(original)
    height = getHeight(original)
    canvas = makeEmptyPicture(getWidth(original), getHeight(original))
    copy(original, canvas, 0, 0)
    posterize(original, canvas, 3*(width/5), 4*(width/5), 0, height, 3*(width/5))
    negative(original, canvas, width/10, 2*(width/10), 0, height, width/10)
    grayscale(original, canvas, 4*(width/5), (width-1), 0, (height-1), 4*(width/5))
    stripes(original, canvas, 0, width, 0, height, 0)
    horizontalStripes(original, canvas, 0, width, 0, height, 0)

    sig = makePicture(getMediaPath("sig.jpg"))
    sig = scaleDown(sig, 20)
    chromaSig(sig, canvas, 600, 420)

    show(canvas)
    repaint(canvas)
    explore(canvas)
    writePictureTo(canvas, "Nick_Combs.jpg")

def copy(pic, target, targX, targY):
    targetX = targX
    for x in range(getWidth(pic)):
        targetY = targY
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    for y in range(getHeight(pic)):
        pixel = getPixel(pic, x, y)
        tx = getPixel(target, targetX, targetY)
        setColor(tx, getColor(pixel))
        targetY = targetY+1
        targetX = targetX+1

def posterize(pic, canvas, startx, endx, starty, endy, z):
    for x in range(startx, endx):
        for y in range(starty, endy):
            new_red = getRed(getPixel(pic, x,y))
            new_blue = getBlue(getPixel(pic, x, y))
            new_green = getGreen(getPixel(pic,x,y))
            luminance = (new_red + new_blue + new_green)/3
            if luminance < 60:
                setColor(getPixel(canvas,z,y), pink)
            if luminance >= 60:
                setColor(getPixel(canvas, z,y), gray)
        z= z+1

def stripes(pic, canvas, startx, endx, starty, endy, z):
    for x in range(startx,endx):
        for y in range(starty, endy,5):
            setColor(getPixel(canvas, z, y), blue)
        z = z + 1

def grayscale(pic, canvas, startx, endx, starty, endy, z):
    for x in range(startx, endx):
        for y in range(starty, endy):
            intensity = (getRed(getPixel(pic,x,y))+getGreen(getPixel(pic,x,y))+getBlue(getPixel(pic,x,y)))/3
            setColor(getPixel(canvas,z,y), makeColor(intensity,intensity,intensity))
        z= z+1

def horizontalStripes(pic, canvas, startx, endx, starty, endy, z):
    for x in range(startx / 2,endx, 5):
        for y in range(starty, endy):
            setColor(getPixel(canvas, x, y), yellow)
        z = z + 1

def negative(pic, canvas, startx, endx, starty, endy, z):
    for x in range(startx, endx):
        for y in range(starty, endy):
            new_red = getRed(getPixel(pic, x,y))
            new_blue = getBlue(getPixel(pic, x, y))
            new_green = getGreen(getPixel(pic,x,y))

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    neg_color = makeColor(255-new_red, 255-new_green, 255-new_blue)
    setColor(getPixel(canvas,z,y), neg_color)
z= z+1

def scale(src, canvas, factor):
    sourceX = 0
    for targetX in range(0, int(getWidth(src) * factor)):
        sourceY = 0
        for targetY in range(0, int(getHeight(src) * factor)):
            color = getColor(getPixel(src,int(sourceX), int(sourceY)))
            setColor(getPixel(canvas, targetX, targetY), color)
            sourceY = sourceY + 1.0 / factor
        sourceX = sourceX + 1.0 / factor

def scaleDown(pic, factor):
    canvas = makeEmptyPicture(int(getWidth(pic) / factor), int(getHeight(pic) / factor))
    scale(pic, canvas, 1.0 / factor)
    return canvas

def chromaSig(source, target, targetX, targetY):
    for x in range(0, getWidth(source)):
        for y in range(0, getHeight(source)):
            px = getPixel(source, x, y)
            color = getColor(px)
            targ = getPixel(target, x + targetX, y + targetY)
            if distance (black, color) < 200:
                setColor(targ, red)

collage()

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