

# Carlos Perez

Completed



Originals



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#Carlos Perez Monday October 19th, 2021
#halo icon made by Freepik from flaticon.com (https://www.flaticon.com/free-icon/halo_761240)
#www icon made by pictranoosa from flaticon.com (https://www.flaticon.com/premium-icon/internet-browser_5446635)
#email icon made by Freepik from flaticon.com (https://www.flaticon.com/premium-icon/email_2544140)
#computer icon made by Freepik from flaticon.com (https://www.flaticon.com/free-icon/computer_502304)
#hands image made by Lina Kraftoff from unsplash.com (https://unsplash.com/photos/2EYnp6yBneY)
#window image grabbed from pngkit.com (https://www.pngkit.com/view/u2y3q8t4r5y3y3a9_microsoft-paint-transparent-
image-vaporwave-windows-95-png/)
def collage():
    bgcolor = makeColor(2,127,130)
    #establishing picture files
    pic = makeEmptyPicture(736,1000, bgcolor)
    hands = makePicture(getMediaPath("god.jpg"))
    logo = scale(makePicture(getMediaPath("charlie.jpeg")), 0.025)
    sig = scale(makePicture(getMediaPath("signature.jpg")), 0.23)
    computer = scale(makePicture(getMediaPath("computer.jpg")), 0.70)
    www = scale(makePicture(getMediaPath("internet-browser.jpg")), 0.70)
    email = scale(makePicture(getMediaPath("email.jpg")), 0.70)
    halo = scale(makePicture(getMediaPath("halo.jpg")), 0.70)
    paint = scale(makePicture(getMediaPath("paint.jpg")), 0.70)
    cardinal = scale(makePicture(getMediaPath("charlie.jpeg")), 0.02)
    start = makePicture(getMediaPath("start.jpg"))
    #executing helper functions
    taskbar(pic)
    copy(makePicture(getMediaPath("window.jpg")), pic, 190, 180)
    #modify the first image
    img1 = scale(hands, 0.230)
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posterize(img1)
copy(img1,pic,309,265)
#modify the second image
img2 = scale(hands,0.230)
negative(img2)
mirrorX(img2)
mirrorY(img2)
copy(img2,pic,478,265)
#modify the third image
img3 = scale(hands,0.461)
copy(img3,pic,309,377)
#modify the fourth image
img4 = scale(hands,0.230)
cyanotype(img4)
copy(img4,pic,309,603)
#modify the fifth image
img5 = scale(hands,0.230)
lighten(img5)
copy(img5,pic,478,603)
#copy signature onto image
chromakey(sig,pic,730,999)
copy(sig,pic,619,960)
#add computer icon and text
chromakey(computer,pic,1,1)
copy(computer,pic,30,30)
#add email icon and text
chromakey(email,pic,1,1)
copy(email,pic,30,125)
#add paint icon and text
chromakey(paint,pic,1,1)
copy(paint,pic,30,215)
#add www icon and text
chromakey(www,pic,1,1)
copy(www,pic,30,305)
#add halo icon and text
chromakey(halo,pic,1,1)
copy(halo,pic,30,400)
#add cardinal icon
chromakey2(cardinal,pic,730,999)
copy(cardinal,pic,9,969)
#add start text
chromakey(start,pic,730,999)
copy(start,pic,28,971)
#display the final image
explore(pic)
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def taskbar(pic):
    #making the color for the taskbar
    newgrey = makeColor(189,189,189)
    #set the pixels in the base canvas to the new color
    for x in range(0,getWidth(pic)):
        for y in range(960,1000):
            setColor(getPixel(pic,x,y),newgrey)
        y=y+1
    x=x+1
    #start button
    for x in range(5, 75):
        for y in range(966,969):
            setColor(getPixel(pic,x,y), white)
    for x in range(72, 75):
        for y in range(966,995):
            setColor(getPixel(pic,x,y), black)
    for x in range(5, 75):
        for y in range(992,995):
            setColor(getPixel(pic,x,y), black)
    for x in range(5, 8):
        for y in range(966,995):
            setColor(getPixel(pic,x,y), white)

def scale(picture_in,scale):
    #define the output variable
    picture_out = makeEmptyPicture(int(getWidth(picture_in)*scale), int(getHeight(picture_in)*scale))
    width = getWidth(picture_out)
    height = getHeight(picture_out)
    sourceX = 0
    #scaling the image
    for targetX in range(0,width):
        sourceY = 0
        for targetY in range(0,height):
            color = getColor(getPixel(picture_in,int(sourceX),int(sourceY)))
            setColor(getPixel(picture_out,targetX,targetY), color)
            sourceY=sourceY + float(1.0/scale)
            sourceX=sourceX + float(1.0/scale)
    return(picture_out)

def copy(source, target, targX, targY):
    #setting the range of the image to be copied
    targetX = targX
    for sourceX in range(0,getWidth(source)):
        targetY = targY

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for sourceY in range(0,getHeight(source)):
    #getting the pixels in the base image and setting the pixels in the new image
    px = getPixel(source,sourceX,sourceY)
    tx = getPixel(target,targetX,targetY)
    setColor(tx,getColor(px))
    targetY=targetY + 1
    targetX=targetX + 1

def chromakey2(source,bg,x1,y1,):
    #loop through pixels
    for px in getPixels(source):
        x=x1
        y=y1
        #specify color value to key out
        if (getRed(px) <= 35 and getGreen(px) >= 250 and getBlue(px) <= 35):
            bgpx = getPixel (bg,x,y)
            bgcol = getColor(bgpx)
            setColor(px,bgcol)

def chromakey(source,bg,x1,y1,):
    #loop through pixels
    for px in getPixels(source):
        x=x1
        y=y1
        #specify color value to key out
        if (getRed(px) > 230 and getGreen(px) > 230 and getBlue(px) > 230):
            bgpx = getPixel (bg,x,y)
            bgcol = getColor(bgpx)
            setColor(px,bgcol)

def cyanotype(pic):
    for p in getPixels(pic):
        intensity = (getRed(p) + getGreen(p) + getBlue(p))/3
        blue=getBlue(p)
        setColor(p,makeColor(intensity, intensity, intensity))
        #tint shadows
        if (blue < 63):
            blue=blue*2
        #tint midtones
        if (blue >= 63 and blue <= 191):
            blue = blue*1.3
        #tint highlights
        if (blue > 191):
            blue = blue*1.2
        #set the new color values

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red=getRed(p)
green=getRed(p)
red = red*.75
green = green*.75
setBlue(p, blue)
setGreen(p, green)
setRed(p,red)
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def lighten(pic):
    #loop through the pixels
    for x in range(0,getWidth(pic)):
        for y in range (0,getHeight(pic)):
            #lighten the image
            px = getPixel(pic,x,y)
            color = getColor(px)
            color = makeLighter(makeLighter(makeLighter(color)))
            setColor(px,color)
    return pic
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def posterize(pic):
    #loop through the pictures
    for p in getPixels(pic):
        red = getRed(p)
        green = getGreen(p)
        blue = getBlue(p)
        #check and set red values
        if(red < 64):
            setRed(p,178)
        if(red > 63 and red < 128):
            setRed(p,255)
        if(red > 127 and red < 192):
            setRed(p,255)
        if(red > 191 and red < 256):
            setRed(p,17)
        #check and set green values
        if(green < 64):
            setGreen(p,18)
        if(green > 63 and green < 128):
            setGreen(p,230)
        if(green > 127 and green < 192):
            setRed(p,0)
        if(green > 191 and green < 256):
            setGreen(p,178)
        #check and set blue values
        if(blue < 64):
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        setBlue(p,91)
    if(blue > 63 and blue < 128):
        setBlue(p,22)
    if(blue > 127 and blue < 192):
        setRed(p,117)
    if(blue > 191 and blue < 256):
        setBlue(p,204)
    return pic

def mirrorX(pic):
    mirrorPoint = getWidth(pic)/2
    width=getWidth(pic)
    #loop through pixels for a horizontal flip
    for y in range(0,getHeight(pic)):
        for x in range(0,mirrorPoint):
            leftPixel = getPixel(pic,x,y)
            rightPixel = getPixel(pic, width - x - 1,y)
            color = getColor(leftPixel)
            setColor(rightPixel,color)
    return pic

def mirrorY(pic):
    mirrorPoint = getHeight(pic)/2
    height=getHeight(pic)
    #loop through pixels for a vertical flip
    for x in range (0,getWidth(pic)):
        for y in range(mirrorPoint, getHeight(pic)):
            topPixel = getPixel(pic,x,y)
            bottomPixel = getPixel(pic,x,height - y - 1)
            color = getColor(topPixel)
            setColor(bottomPixel,color)
    return pic

def negative(pic):
    #loop through pixels
    for p in getPixels(pic):
        red = getRed(p)
        green = getGreen(p)
        blue = getBlue(p)
        #negate colors
        negColor = makeColor(255-red, 255-green, 255-blue)
        setColor(p,negColor)
    return pic

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