Cooper Smolek

Completed Original

#Cooper Smolek "Heart of the Bay" 02/29/2020

def paste(pic,newpic,startY): #Main pasting function
    targetX = 0
    for x in range(0,getWidth(pic)):
        targetY = startY
        for y in range(0,getHeight(pic)):
            setColor(getPixel(newpic,targetX,targetY),getColor(getPixel(pic,x,y)))
        targetY = targetY + 1
        targetX = targetX + 1

def mirror(newpic,startY,endY): #1st image mirror
    mirrorPoint = 300
    for x in range(0,getWidth(newpic)):
        for y in range(startY,mirrorPoint):
            topPixel = getPixel(newpic,x,endY-y-1)
            bottomPixel = getPixel(newpic,x,y)
            setColor(topPixel,getColor(bottomPixel))

def lighten(newpic,startY,endY): #3rd image lighten
    for x in range(0,getWidth(newpic)):
        for y in range(startY,endY):
            px = getPixel(newpic,x,y)
            color = makeLighter(makeLighter(makeLighter(getColor(px))))
            setColor(px,color)

def luminance(pixel): #Needed for line
    r = getRed(pixel)
    g = getGreen(pixel)
    b = getBlue(pixel)
    return (r+g+b)/3

def line(pic,newpic,startY,endY): #4th image line drawing
    for px in getPixels(newpic):
        x = getX(px)
        y = getY(px)
        if y > startY-1 and y < endY-1 and x < getWidth(newpic)-1:
            botrt = getPixel(newpic,x+1,y+1)
thislum = luminance(px)
brlum = luminance(botrt)
if abs(brlum-thislum) > 15:
    setColor(px, green)
if abs(brlum-thislum) <= 15:
    setColor(px, black)

def grid(newpic, startY, endY): #5th image grid
    for x in range(0, getWidth(newpic)/3, 3):
        for y in range(startY, endY, 3):
            setColor(getPixel(newpic, x, y), cyan)
    for x in range(getWidth(newpic)/3, (getWidth(newpic)/3)*2, 3):
        for y in range(startY, endY, 3):
            setColor(getPixel(newpic, x, y), yellow)
    for x in range((getWidth(newpic)/3)*2, getWidth(newpic), 3):
        for y in range(startY, endY, 3):
            setColor(getPixel(newpic, x, y), magenta)

def collage(): #Outputs project
    pic = makePicture(getMediaPath("sanfran.jpg"))
    newpic = makeEmptyPicture(423, 1000)
paste(pic, newpic, 0)
paste(pic, newpic, 200)
mirror(newpic, 200, 400)
paste(pic, newpic, 400)
lighten(newpic, 400, 600)
paste(pic, newpic, 600)
line(pic, newpic, 600, 800)
paste(pic, newpic, 800)
grid(newpic, 800, 1000)
show(newpic)