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#Art Show Project

def main():
    picture = makePicture(pickAFile())
    canvas = makeEmptyPicture(1000,736,black)

    show(collage(picture,canvas))

def lighten(picture):
    for x in range(0,getWidth(picture)):
        for y in range(0,getHeight(picture)):
            px = getPixel(picture,x,y)
            color = getColor(px)
            color = makeLighter(color)
            setColor(px,color)

def posterize(picture):
    for p in getPixels(picture):
        r = getRed(p)
        g = getGreen(p)
        b = getBlue(p)
        luminance = (r+g+b)/3
        if luminance < 64:
            setColor(p,black)
        elif luminance > 120:
            setColor(p,white)
        else:
            setColor(p,red)
def grayScale(picture):
    for p in getPixels(picture):
        intensity = (getRed(p)+getGreen(p)+getBlue(p))/3
        setColor(p,makeColor(intensity,intensity,intensity))

def line(picture):
    for px in getPixels(picture):
        x = getX(px)
        y = getY(px)
        if y < getHeight(picture)-1 and x < getWidth(picture)-1:
            sum = getRed(px)+getGreen(px)+getBlue(px)
            botrt = getPixel(picture,x+1,y+1)
            sum2 = getRed(botrt)+getGreen(botrt)+getBlue(botrt)
            diff = abs(sum2-sum)
            newColor = makeColor(diff,diff,diff)
            setColor(px,newColor)

def decreaseRed(picture):
    pixels = getPixels(picture)
    for index in range(0,len(pixels)):
        pixel = pixels[index]
        value = getRed(pixel)
        setRed(pixel,value * 0.5)

def collage(picture,canvas):
    targetX = 0
    for sourceX in range(0,getWidth(picture)):
        targetY = getHeight(canvas) - getHeight(picture)-5
        for sourceY in range(0,getHeight(picture)):
            px = getPixel(picture,sourceX,sourceY)
            cx = getPixel(canvas,targetX,targetY)
            setColor(cx,getColor(px))
            targetY = targetY + 1
            targetX = targetX + 1
            lighten(picture)
    targetX = 40
    for sourceX in range(0,getWidth(picture)):
        targetY = getHeight(canvas) - getHeight(picture)-5
        for sourceY in range(0,getHeight(picture)):
            px = getPixel(picture,sourceX,sourceY)
            cx = getPixel(canvas,targetX,targetY)
            setColor(cx,getColor(px))
            targetY = targetY + 1
            targetX = targetX + 1
decreaseRed(picture)
targetX = 110
for sourceX in range(0, getWidth(picture)):
    targetY = getHeight(canvas) - getHeight(picture) - 5
    for sourceY in range(0, getHeight(picture)):
        px = getPixel(picture, sourceX, sourceY)
        cx = getPixel(canvas, targetX, targetY)
        setColor(cx, getColor(px))
        targetY = targetY + 1
    targetX = targetX + 1

grayScale(picture)
targetX = 215
for sourceX in range(0, getWidth(picture)):
    targetY = getHeight(canvas) - getHeight(picture) - 5
    for sourceY in range(0, getHeight(picture)):
        px = getPixel(picture, sourceX, sourceY)
        cx = getPixel(canvas, targetX, targetY)
        setColor(cx, getColor(px))
        targetY = targetY + 1
    targetX = targetX + 1

line(picture)
targetX = 330
for sourceX in range(0, getWidth(picture)):
    targetY = getHeight(canvas) - getHeight(picture) - 5
    for sourceY in range(0, getHeight(picture)):
        px = getPixel(picture, sourceX, sourceY)
        cx = getPixel(canvas, targetX, targetY)
        setColor(cx, getColor(px))
        targetY = targetY + 1
    targetX = targetX + 1

posterize(picture)
targetX = 465
for sourceX in range(0, getWidth(picture)):
    targetY = getHeight(canvas) - getHeight(picture) - 5
    for sourceY in range(0, getHeight(picture)):
        px = getPixel(picture, sourceX, sourceY)
        cx = getPixel(canvas, targetX, targetY)
        setColor(cx, getColor(px))
        targetY = targetY + 1
    targetX = targetX + 1
str = "S"
addText(canvas,130,40,str,white)
str = "A"
addText(canvas,160,55,str,white)
str = "M"
addText(canvas,200,35,str,white)
str = "U"
addText(canvas,250,25,str,white)
str = "E"
addText(canvas,300,40,str,white)
str = "L"
addText(canvas,360,50,str,white)

str = "A"
addText(canvas,650,35,str,white)
str = "G"
addText(canvas,710,45,str,white)
str = "E"
addText(canvas,780,60,str,white)
str = "E"
addText(canvas,850,50,str,white)

show(canvas)
return canvas