# setMediaPath("/Users/mick/cs120")
def collage():
    pic = makePicture("perhaps.jpg")
    pic2 = makePicture("perhaps.jpg")
    pic3 = makePicture("perhaps.jpg")
    pic4 = makePicture("perhaps.jpg")
    pic5 = makePicture("perhaps.jpg")
    sig = makePicture("sign.png")
    sound = makeSound("Boom.wav")
    big_picture = makeEmptyPicture(int(getWidth(pic) * 2), int(getHeight(pic) * 2))
    canvas = makeEmptyPicture(getWidth(big_picture), getHeight(big_picture))

    negative(pic2)
    expose(pic3)
    grayScale(pic4)
    post(pic5)

    copy(pic2, canvas, 0, 0)
    copy(pic3, canvas, getWidth(pic), 0)
    copy(pic4, canvas, 0, getHeight(canvas)-getHeight(pic))
    copy(pic5, canvas, 280, 280)
    copy(pic, canvas, 138, 131)
    add(canvas, sig, 0, 0, black)

    show(canvas)
    play(sound)

def negative(pic2):
    for p in getPixels(pic2):
        r = getRed(p)
        g = getGreen(p)
        b = getBlue(p)
        neg=makeColor(255-r, 255-g, 255-b)
        setColor(p, neg)

def expose(pic3):
    for x in range (0,getWidth(pic3)):
        for y in range (0,getHeight(pic3)):
            p = getPixel(pic3, x, y)
            setColor(p, makeLighter(makeLighter(getColor(p))))
def grayScale(pic4):
    for p in getPixels(pic4):
        intensity = (getRed(p)+getGreen(p)+getBlue(p))/3
        setColor(p,makeColor(intensity, intensity, intensity))

def post(pic5):
    for p in getPixels(pic5):
        r = getRed(p)
        g = getGreen(p)
        b = getBlue(p)
        lum = (r+g+b)/3
        if lum < 64:
            setColor(p,black)
        elif lum > 120:
            setColor(p,white)
        else:
            setColor(p,magenta)

def copy(source,target,targX,targY):
    targetX = targX
    for sourceX in range(0,getWidth(source)):
        targetY = targY
        for sourceY in range(0, getHeight(source)):
            p = getPixel(source,sourceX,sourceY)
            t = getPixel(target, targetX, targetY)
            setColor(t,getColor(p))
            targetY=targetY +1
        targetX = targetX + 1

def add(target, sig, toX, toY, color):
    toYStart = toY
    for x in range(0, getWidth(sig)):
        toY = toYStart
        for y in range(0,getHeight(sig)):
            p = getPixel(sig, x, y)
            if (getRed(p) < 225 and getGreen(p) < 225 and getBlue(p) < 225):
                setColor(getPixel(target, toX, toY), color)
            toY = toY + 1
        toX = toX + 1
    return target