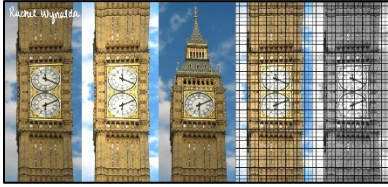


# Rachel Wynalda

Completed

Original



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#Rachel Wynalda
#March 1, 2022
#Update March 22, 2022
```

```
def collage():
    setMediaPath()
    picture = makePicture(getMediaPath("bigben.jpg"))
    sigPicture = makePicture(getMediaPath("signature.jpg"))
    canvas = makeEmptyPicture(1000,468)
    #original picture in slot 3
    copyX(picture, 400, 599, canvas)
    #mirrored picture in slot 1
    mirrorVertically(picture)
    copyX(picture, 0, 199, canvas)
    #lightened/mirrored picture in slot 2
    lighten(picture)
    copyX(picture, 200, 399, canvas)
    #grid lines/lightened/mirrored picture in slot 4
    lines(picture)
    copyX(picture, 600, 799, canvas)
    #grayscale/grid lines/lightened/mirrored picture in slot 5
    grayScale(picture)
    copyX(picture, 800, 999, canvas)
    #signature in top left corner
    copySig(sigPicture, canvas, 0, 0)
    #final product
    show(canvas)

#first slot
def mirrorVertically(picture):
    canvas = makeEmptyPicture(999,468)
    mirrorPoint = getHeight(picture)/2
    height = getHeight(picture)
    for x in range(0, getWidth(picture)):
        for y in range(0,mirrorPoint):
            topPixel = getPixel(picture,x,y)
            bottomPixel = getPixel(picture, x, height-y-1)
            color = getColor(bottomPixel)
            setColor(topPixel,color)

#second slot
def lighten(picture):
    canvas = makeEmptyPicture(999,468)
    for x in range(0, getWidth(picture)):
```

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

#third slot is original picture

#fourth slot
def lines(picture):
    canvas = makeEmptyPicture(999,468)
    for x in range(0,getHeight(picture),10):
        for y in range(0,getWidth(picture)):
            setColor(getPixel(picture, y, x), black)
    for x in range(0,getWidth(picture), 10):
        for y in range(0, getHeight(picture)):
            setColor(getPixel(picture, x, y), black)

#fifth slot
def grayScale(picture):
    canvas = makeEmptyPicture(999,468)
    for p in getPixels(picture):
        intensity = (getRed(p)+getGreen(p)+getBlue(p))/3
        setColor(p,makeColor(intensity,intensity,intensity))

#copy function for images
def copyX(picture,startx,endx,newPicture):
    newX=startx
    for x in range (0, getWidth(picture)):
        for y in range(0,getHeight(picture)):
            pixel = getPixel(picture,x,y)
            color = getColor(pixel)
            newPixel = getPixel(newPicture, newX, y)
            setColor(newPixel,color)
            newX=newX+1

#copy function for signature
def copySig(sPicture, targetPicture, targetX, targetY):
    sigColor=makeColor(0,0,0)
    for sX in range(0, getWidth(sPicture)):
        for sY in range (0, getHeight(sPicture)):
            sPx=getPixelAt (sPicture, sX, sY)
            sColor=getColor(sPx)
            targetPx=getPixelAt(targetPicture, int(sX+targetX), int(sY+targetY))
            if distance(sColor, black)<180:
                setColor(targetPx, white)

```