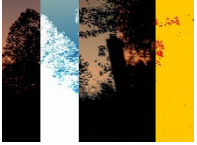
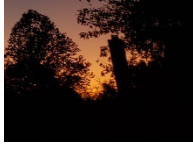


# Reed Stwalley

Completed



Original



```
##Reed Stwalley
##3/10/24
def collage():
    pic = makePicture(getMediaPath("Night Sky Copy.jpg"))
    width = getWidth(pic)
    height = getHeight(pic)
    slice_width = width / 5
    empty_canvas=makeEmptyPicture(slice_width*5, height)
    ##original piece is the first piece in my picture
    original_piece = crop(pic,0,0,slice_width,height)
    copy(original_piece,empty_canvas,0,0)
    ##blurred piece is the fourth piece in my picture
    blurred_piece = crop(pic,slice_width*3, 0, slice_width*4,height)
    blurred_piece = blur(blurred_piece)
    blurred_piece = blur(blurred_piece)
    blurred_piece = blur(blurred_piece)
    blurred_piece = blur(blurred_piece)
    blurred_piece = blur(blurred_piece)
    copy(blurred_piece,empty_canvas,slice_width*3,0)
    ##edge detected piece is the fifth piece in my picture
    edge_detected_piece = crop(pic,slice_width*4,0,slice_width*5,height)
    edgedetect(edge_detected_piece, 2)
    copy(edge_detected_piece, empty_canvas, slice_width*4,0)
    ##negative piece is the second piece in my picture
    negative_piece = crop(pic,slice_width,0,slice_width*2,height)
    negative(negative_piece)
    copy(negative_piece,empty_canvas,slice_width,0)
    ##sepia tinted piece is the third piece in my picture
    sepiatinted_piece = crop(pic,slice_width*2,0,slice_width*3,height)
    sepiatint(sepiatinted_piece)
    copy(sepiatinted_piece,empty_canvas,slice_width*2,0)
    explore(empty_canvas)
```

```

def blur(pic):
    target = duplicatePicture(pic)
    for x in range (1,getWidth(pic)-1):
        for y in range (1,getHeight(pic)-1):
            top = getPixel(pic,x,y-1)
            left = getPixel(pic,x-1,y)
            bottom = getPixel(pic,x,y+1)
            right = getPixel(pic,x+1,y)
            center = getPixel(target,x,y)
            newRed = (getRed(top)+getRed(left)+getRed(bottom)+getRed(right)+getRed(center))/5
            newGreen = (getGreen(top)+getGreen(left)+getGreen(bottom)+getGreen(right)+getGreen(center))/5
            newBlue = (getBlue(top)+getBlue(left)+getBlue(bottom)+getBlue(right)+getBlue(center))/5
            setColor(center, makeColor(newRed, newGreen, newBlue))
    return target

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

def edgedetect(pic, threshold):
    for px in getPixels(pic):
        x = getX(px)
        y = getY(px)
        if y < getHeight(pic)-1 and x < getWidth(pic)-1:
            botrt = getPixel(pic,x+1,y+1)
            thislum = luminance(px)
            brlum = luminance(botrt)
            if abs(brlum-thislum) > threshold:
                setColor(px, red)
            if abs(brlum-thislum) <= threshold:
                setColor(px, orange)

def copy(pic, empty_canvas, targX, targY):
    targetX =targX
    for picX in range(0,getWidth(pic)):
        targetY=targY
        for picY in range(0,getHeight(pic)):
            color = getColor(getPixel(pic,picX,picY))
            setColor(getPixel(empty_canvas,targetX,targetY),color)
            targetY = targetY + 1
        targetX = targetX + 1

```

```

def crop(pic, startX, startY, endX, endY):
    empty_canvas = makeEmptyPicture(endX - startX, endY - startY)
    targetX = 0
    for picX in range(startX, endX):
        targetY = 0
        for picY in range(startY, endY):
            color = getColor(getPixel(pic, picX, picY))
            setColor(getPixel(empty_canvas, targetX, targetY), color)
            targetY = targetY + 1
        targetX = targetX + 1
    return empty_canvas

def negative(pic):
    for px in getPixels(pic):
        red=getRed(px)
        green=getGreen(px)
        blue=getBlue(px)
        negColor=makeColor(255-red, 255-green, 255-blue)
        setColor(px, negColor)

def grayScaleNew(pic):
    for p in getPixels(pic):
        intensity=(getRed(p)+getGreen(p)+getBlue(p))/3
        setColor(p,makeColor(intensity,intensity,intensity))

def sepiaTint(pic):
    grayScaleNew(pic)
    for p in getPixels(pic):
        red = getRed(p)
        blue = getBlue(p)
        if (red > 63):
            red = red*1.1
            blue= blue*0.9
        if (red > 62 and red < 192):
            red = red*1.15
            blue = blue*0.85
        if (red > 191):
            red = red*1.08
            if (red > 255):
                red = 255
            blue = blue*0.93
        setBlue(p, blue)
        setRed(p, red)

```