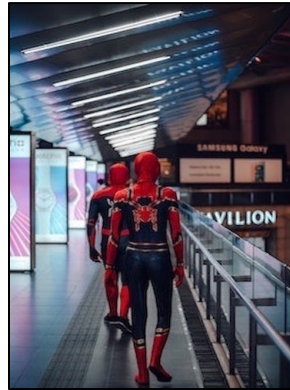


# Kyler Altenhof

Completed



Original



```
#KylerAltenhof  
#CS120  
#03/08/2020
```

```
#MainFunctionThatCallsOtherFunctions
```

```
def collage():  
    picture= makePicture(getMediaPath("2Spidermen.jpg"))  
    picture2= makePicture(getMediaPath("2Spidermen.jpg"))  
    picture3= makePicture(getMediaPath("2Spidermen.jpg"))  
    picture4= makePicture(getMediaPath("2Spidermen.jpg"))  
    picture5= makePicture(getMediaPath("2Spidermen.jpg"))  
    canvas=makeEmptyPicture(736,1000)  
    coppicture(picture,canvas,0,0)  
    e=grayscale(picture)  
    mirrorhorizontal(e,canvas,365,0)  
    n=redblueswitcharoo(picture3)  
    mirrorvertical(n,canvas,0,500)  
    q=increaseRed(picture2)  
    mirrorboth(q,canvas,365,500)  
    y=mirror(picture4)  
    z=cropPicture(y)  
    copcroppedpicture(z,canvas,(getWidth(canvas)/2)-88,(getHeight(canvas)/2)-157)  
    explore(canvas)
```

```
#CopiesTheOriginalPicture
```

```
def coppicture(picture,canvas,startX,startY):  
    endX = startX+getWidth(picture)  
    endY = startY+getHeight(picture)  
    sourceX = 0  
    for targetX in range(startX,endX-1):  
        sourceY = 0  
        for targetY in range(startY,endY):  
            color = getColor(getPixel(picture,sourceX,sourceY))  
            setColor(getPixel(canvas,targetX,targetY), color)  
            sourceY= sourceY + 1  
            sourceX = sourceX + 1
```

```
#CropsTheFinalPicture
```

```

def cropPicture(picture5):
    croppedPic = makeEmptyPicture(176, 315)
    targetX = 0
    for sourceX in range(94,270):
        targetY = 0
        for sourceY in range(185,getHeight(picture5)):
            color = getColor(getPixel(picture5,sourceX,sourceY))
            setColor(getPixel(croppedPic,targetX,targetY), color)
            targetY = targetY + 1
        targetX = targetX + 1
    return croppedPic

```

#CopysTheCroppedPicture

```

def copycroppedpicture(picture4, canvas, startX, startY):
    endX = startX+getWidth(picture4) #Changed this
    endY = startY+getHeight(picture4)
    sourceX = 0
    for targetX in range(startX,endX-1):
        sourceY = 0
        for targetY in range(startY,endY):
            color = getColor(getPixel(picture4,sourceX,sourceY))
            setColor(getPixel(canvas,targetX,targetY), color)
            sourceY= sourceY + 1
        sourceX = sourceX + 1

```

#MirrorsTheFinalPicture

```

def mirror(picture4):
    mirrorPoint = getWidth(picture4)
    width = getWidth(picture4)
    for y in range(0, getHeight(picture4)):
        for x in range(0, mirrorPoint):
            leftPixel = getPixel(picture4,x,y)
            rightPixel = getPixel(picture4,width -x -1,y)
            color = getColor(leftPixel)
            setColor(rightPixel,color)
    return(picture4)

```

#MirrorsPictureOverTheYAxis

```

def mirrorvertical(picture, canvas, startX, startY):
    endX = startX+getWidth(picture)
    endY = startY+getHeight(picture)
    sourceX = 0
    for targetX in range(startX,endX-1):
        sourceY = getHeight(picture)-1
        for targetY in range(startY,endY):
            color = getColor(getPixel(picture,sourceX,sourceY))
            setColor(getPixel(canvas,targetX,targetY), color)
            sourceY= sourceY - 1
        sourceX = sourceX + 1

```

#MirrorsThePictureOverBothTheXandYAxis

```

def mirrorboth(picture2, canvas, startX, startY):
    endX = startX+getWidth(picture2)
    endY = startY+getHeight(picture2)
    sourceX = getWidth(picture2)-1
    for targetX in range(startX,endX-1):
        sourceY = getHeight(picture2)-1
        for targetY in range(startY,endY):

```

```

    color = getColor(getPixel (picture2, sourceX, sourceY))
    setColor (getPixel (canvas, targetX, targetY), color)
    sourceY= sourceY - 1
    sourceX = sourceX - 1
#MirrorsOverTheXAxis
def mirrorhorizontal (picture, canvas, startX, startY) :
    endX = startX+getWidth (picture)
    endY = startY+getHeight (picture)
    sourceX = getWidth (picture)-1
    for targetX in range (startX, endX-1) :
        sourceY = 0
        for targetY in range (startY, endY) :
            color = getColor (getPixel (picture, sourceX, sourceY))
            setColor (getPixel (canvas, targetX, targetY), color)
            sourceY= sourceY + 1
            sourceX = sourceX - 1
        return (picture)
#ApplysAGrayscale
def grayscale (picture) :
    for p in getPixels (picture) :
        intensity = (getRed (p)+getGreen (p)+getBlue (p)) /3
        setColor (p, makeColor (intensity, intensity, intensity))
    return (picture)
#SwitchestheRedandBlueValuesForThePicture
def redblueswitcharoo (picture3) :
    endX= getWidth (picture3)-1
    endY= getHeight (picture3)-1
    startX = 0
    for targetX in range (0, endX) :
        startY = 0
        for targetY in range (0, endY) :
            red = getBlue (getPixel (picture3, startX, (startY)))
            blue = getRed (getPixel (picture3, startX, startY))
            green = getGreen (getPixel (picture3, startX, startY))
            color2 = makeColor (red, green, blue)
            setColor (getPixel (picture3, targetX, targetY), color2)
            startY = startY + 1
            startX = startX + 1
        return (picture3)
#ReducesTheBlueAndGreenValuesInThePicture
def increaseRed (picture2) :
    for p in getPixels (picture2) :
        value=getBlue (p)
        setBlue (p, value*0.7)
        value=getGreen (p)
        setGreen (p, value*0.7)
    return (picture2)

```