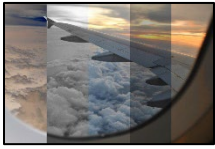


Alyssa Binkley

Completed



Originals



#Name: ALYSSA BINKLEY

#Date: 3/15/2023

```
def collage():
#serves as the main function
    picture = makePicture(getMediaPath("planepic.jpg"))
    finalPicture = makeEmptyPicture(getWidth(picture),getHeight(picture))

    height = getHeight(picture)
    width = getWidth(picture)
    sliceWidth = width/5
    #dividing the picture into 5 seperate pieces

    negative(picture,finalPicture,0,sliceWidth,height)
    #first piece (from left to right), with negative filter
    grayscale(picture,finalPicture,sliceWidth,sliceWidth*2,height)
    #second piece, with grayscale filter
    originalSlice(picture,finalPicture,sliceWidth*2,sliceWidth*3,height)
    #third piece, with no filter, just copied from original image
    darken(picture,finalPicture,sliceWidth*3,sliceWidth*4,height)
    #fourth piece, with filter than darkens the colors
    sepia(picture,finalPicture,sliceWidth*4,width,height)
    #final piece, with sepia filter

def originalSlice(picture,finalPicture,barStart,barStop,height):
#copy and pastes a designated section from the original image and pastes
#it in the same spot on the new canvas
    newX = barStart
    for x in range(barStart,barStop):
        for y in range(0,height):
            pixel = getPixel(picture,x,y)
            newPx = getPixel(finalPicture,newX,y)
            setColor(newPx,getColor(pixel))
            newX = newX +1
        repaint(finalPicture)

def negative(picture,finalPicture,barStart,barStop,height):
#puts a negative filter on a designated section from original image and
#pastes it in the same spot on the new canvas
    newX = barStart
    for x in range(barStart,barStop):
        for y in range(0,height):
            px = getPixel(picture,x,y)
            newPx = getPixel(finalPicture,newX,y)
            red = getRed(px)
            green = getGreen(px)
            blue = getBlue(px)
            negColor = makeColor(255-red, 255-green, 255-blue)
            setColor(newPx,negColor)
            newX = newX + 1
```

```

repaint(finalPicture)

def grayscale(picture,finalPicture,barStart,barStop,height):
#puts a grayscale filter on a designated section from original image and
#pastes it in the same spot on the new canvas
    newX = barStart
    for x in range(barStart,barStop):
        for y in range(0,height):
            px = getPixel(picture,x,y)
            newPx = getPixel(finalPicture,newX,y)
            intensity = (getRed(px)+getGreen(px)+getBlue(px))/3
            setColor(newPx,makeColor(intensity,intensity,intensity))
            newX = newX + 1
        repaint(finalPicture)

def darken(picture,finalPicture,barStart,barStop,height):
#darkens the colors on a designated section from original image and
#pastes it in the same spot on the new canvas
    newX = barStart
    for x in range(barStart,barStop):
        for y in range(0,height):
            px = getPixel(picture,x,y)
            newPx = getPixel(finalPicture,newX,y)
            color = getColor(px)
            color = makeDarker(color)
            setColor(newPx,color)
            newX = newX + 1
        repaint(finalPicture)

def sepia(picture,finalPicture,barStart,barStop,height):
#puts a sepia filter on a designated section from original image and
#pastes it in the same spot on the new canvas
#first grayscales the image using the same input
    grayscale(picture,finalPicture,barStart,barStop,height)
    newX = barStart
    for x in range(barStart,barStop):
        for y in range(0,height):
            px = getPixel(picture,x,y)
            newPx = getPixel(finalPicture,newX,y)
            red = getRed(px)
            blue = getBlue(px)
            #shadows
            if (red<63):
                red = red*1.1
                blue = blue*0.9
            #midtones
            if (red>62 and red<192):
                red = red*1.15
                blue = blue*0.85
            #highlights
            if (red>191):
                red = red*1.08
                if (red>255):
                    red = 255
                blue = blue*0.93

            setBlue(newPx,blue)
            setRed(newPx,red)
            newX = newX + 1
        repaint(finalPicture)

```