Derek Anderson

Completed

Original


```
def scaleDown(source,canvas,n):
  sourceX = 0
  for targetX in range(0, getWidth(source)*n):
    sourceY = 0
    for targetY in range(0, getHeight(source)*n):
      color = getColor(getPixel(source,int(sourceX),int(sourceY)))
      setColor(getPixel(canvas,targetX,targetY), color)
      sourceY = sourceY + 1.0/n
    sourceX = sourceX + 1.0/n
  return canvas

def newPic(source, canvas, tx, ty, sourceX1, sourceX2,sourceY1,sourceY2):
  targetX = int(tx)
  for sourceX in range(sourceX1, sourceX2):
    targetY = int(ty)
    for sourceY in range(sourceY1,sourceY2):
      color = getColor(getPixel(source, sourceX, sourceY))
      setColor(getPixel(canvas, targetX, targetY), color)
      targetY = targetY + 1
    targetX = targetX + 1

def blueScale(picture):
  for p in getPixels(picture):
    blu = getBlue(p)
    rojo = getRed(p)
    verde = getGreen(p)
    if (blue <63):
      setColor(p, makeColor(rojo*.3, verde*.3, blu*1.))
    if(63 <= blue <= 191):
      setColor(p, makeColor(rojo*.3, verde*.3, blu*1.))
    if (blue >191):
      setColor(p, makeColor(rojo*.3, verde*.3, blu*1.))
  return(picture)

def yellowScale(picture):
  for p in getPixels(picture):
    blu = getBlue(p)
    rojo = getRed(p)
    verde = getGreen(p)
    if (blue <63):
      setColor(p, makeColor(rojo*.6, verde*.6, blu*.8))
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    if(63 <= blue <= 191):
      setColor(p, makeColor(rojo*.8, verde*.8, blu*.4))
    if (blue >191):
      setColor(p, makeColor(rojo*1.0, verde*1.0, blu*.2))
  return(picture)

def redScale(picture):
  for p in getPixels(picture):
    blu = getBlue(p)
    rojo = getRed(p)
    verde = getGreen(p)
    if (blue <63):
      setColor(p, makeColor(rojo*.5, verde*.15, blu*.4))
    if(63 <= blue <= 191):
      setColor(p, makeColor(rojo*.75, verde*.25, blu*.3))
    if (blue >191):
      setColor(p, makeColor(rojo*1.0, verde*.35, blu*.15))
  return(picture)

def greenScale(picture):
  for p in getPixels(picture):
    blu = getBlue(p)
    rojo = getRed(p)
    verde = getGreen(p)
    if (blue <63):
      setColor(p, makeColor(rojo*.2, verde*.5, blu*.5))
    if(63 <= blue <= 191):
      setColor(p, makeColor(rojo*.3, verde*.75, blu*.3))
    if (blue >191):
      setColor(p, makeColor(rojo*.4, verde*1.0, blu*.15))
  return(picture)

def border(pic):
  bottom = getHeight(pic)-5
  width = getWidth(pic)-5
  for p in getPixels(pic):
    x = getX(p)
    y = getY(p)
    if y<=5:
      setColor(p, black)
    if y>=bottom:
      setColor(p, black)
    if x<=5:
      setColor(p, black)
    if x>=width:
      setColor(p, black)
  return(pic)

def border2(pic):
  bottom = getHeight(pic)-10
  width = getWidth(pic)-10
  for p in getPixels(pic):
    x = getX(p)
    y = getY(p)
    if y<=10:
      setColor(p, black)
    if y>=bottom:
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        setColor(p, black)
      if x<=10:
        setColor(p, black)
      if x>=width:
        setColor(p, black)
    return(pic)

def chromakey(source,b):
    for p in getPixels(source):
      x = getX(p)
      y = getY(p)
      if (getRed(p) > 240 and getGreen(p) > 240 and getBlue(p) > 240):
        bp = getPixel(b,x,y)
        bcol = getColor(bp)
        setColor(p,bcol)
    return source

def collage():
    #Created by Derek Anderson on 3/4/2020
    source = makePicture(getMediaPath("Prestwick Shoot.jpg"))
    b = makePicture(getMediaPath("Signature.jpg"))
    canvas = makeEmptyPicture(320,213)
    #Canvases for Color Scales
    canvas1 = makeEmptyPicture(320,213)
    canvas3 = makeEmptyPicture(320,213)
    canvas4 = makeEmptyPicture(320,213)
    canvas5 = makeEmptyPicture(320,213)
    #Final Canvas
    canvas2 = makeEmptyPicture(640,426)
    w = getWidth(canvas)
    h = getHeight(canvas)
    w2 = getWidth(canvas2)
    h2 = getHeight(canvas2)
    scaleDown(source,canvas,.25)
    scaleDown(source,canvas1,.25)
    scaleDown(source,canvas3,.25)
    scaleDown(source,canvas4,.25)
    scaleDown(source,canvas5,.25)
    yello = yellowScale(canvas1)
    border(yello)
    newPic(yello,canvas2,0,0,0,w,0,h)
    blu = blueScale(canvas3)
    border(blu)
    newPic(blu,canvas2,w2/2,0,0,w,0,h)
    redd = redScale(canvas4)
    border(redd)
    newPic(redd,canvas2,0,h2/2,0,w,0,h)
    gren = greenScale(canvas5)
    border(gren)
    newPic(gren,canvas2,w2/2,h2/2,0,w,0,h)
    border2(canvas)
    newPic(canvas,canvas2,w2/4,h2/4,0,w,0,h)
    #Creates Signature in bottom right
    chromakey(b,canvas2)
    explore(b)
```