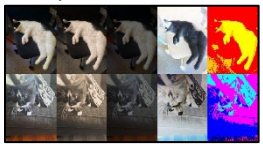
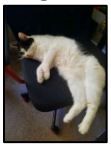
Cristian Catalano

Completed



Originals



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# Collage by Cristian Catalano, completed October 12th 2023

def collage():
  canvas = makeEmptyPicture(1000,534)
  ginger = makePicture(getMediaPath("ginger.jpg"))
  luna = makePicture(getMediaPath("luna.jpg"))
  # Images above were initally too large at 3000x4000; shrunk to 200x267
  # (15x smaller!) in Photoshop
  for startPoint in range(0, 1000, 200):
    copyImage(startPoint, 0, ginger, canvas)
    copyImage(startPoint, 267, luna, canvas)
  height = getHeight(canvas)
  sepiatone(canvas)
  darken(canvas)
  negative(canvas)
  posterize(canvas)
  recolor(canvas, red, orange, yellow, 0, 267)
  recolor(canvas, blue, magenta, cyan, 267, 534)
  signature(canvas)
  show(canvas)

# Function for copying the images to the canvas
def copyImage(startPoint, yStart, source, target):
  targetX = startPoint
  for sourceX in range(0,200):
    targetY = yStart
    for sourceY in range(0,267):
      color = getColor(getPixel(source, sourceX, sourceY))
      setColor(getPixel(target, targetX, targetY), color)
      targetY += 1
    targetX += 1

# Function for applying sepiatone; note the blue light from the top image
disappearing despite little other visual difference
def sepiatone(target):
  for targetX in range(200,400):
    for targetY in range(0,534):
      targetPixel = getPixel(target, targetX, targetY)
      grayscale(targetPixel)
      sepiaRed = getRed(targetPixel)
      sepiaBlue = getBlue(targetPixel)
      if (sepiaRed < 63):
        sepiaRed *= 1.1
        sepiaBlue *= 0.9
      elif (sepiaRed > 62 and sepiaRed < 192):
        sepiaRed *= 1.15
        sepiaBlue *= 0.85
      elif (sepiaRed > 191):
        sepiaRed *= 1.08
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        if (sepiaRed > 255):
          sepiaRed = 255
        sepiaBlue *= 0.93
      setRed(targetPixel, sepiaRed)
      setBlue(targetPixel, sepiaBlue)

# Function for applying grayscale, using luminance weights from the book
def grayscale(grayPixel):
  grayRed = getRed(grayPixel) * 0.299
  grayGreen = getGreen(grayPixel) * 0.587
  grayBlue = getBlue(grayPixel) * 0.114
  grayColor = grayRed + grayGreen + grayBlue
  setColor(grayPixel, makeColor(grayColor, grayColor, grayColor))

# Function for darkening
def darken(target):
  for targetX in range(400,600):
    for targetY in range(0,534):
      darkPixel = getPixel(target, targetX, targetY)
      color = getColor(darkPixel)
      color = makeDarker(color)
      color = makeDarker(color)
      setColor(darkPixel, color)

# Function for creating negative
def negative(target):
  for targetX in range(600,800):
    for targetY in range(0,534):
      negPixel = getPixel(target, targetX, targetY)
      negRed = getRed(negPixel)
      negGreen = getGreen(negPixel)
      negBlue = getBlue(negPixel)
      negColor = makeColor(255-negRed, 255-negGreen, 255-negBlue)
      setColor(negPixel, negColor)

# Function for applying posterization
def posterize(target):
  for targetX in range(800,1000):
    for targetY in range(0,534):
      posPixel = getPixel(target, targetX, targetY)
      posRed = getRed(posPixel)
      posGreen = getGreen(posPixel)
      posBlue = getBlue(posPixel)
      posAverage = (posRed + posGreen + posBlue) / 3
      if (posAverage < 75):
        setColor(posPixel, black)
      elif (posAverage > 74) and (posAverage < 150):
        setColor(posPixel, gray)
      elif (posAverage > 149):
        setColor(posPixel, white)

# Function for recoloring posterized segment
def recolor(target, reBlack, reGray, reWhite, yStart, yEnd):
  for targetX in range(800,1000):
    for targetY in range(yStart,yEnd):
      rePixel = getPixel(target, targetX, targetY)
      reColor = getColor(rePixel)
      if reColor == black:
        setColor(rePixel, reBlack)
      if reColor == gray:
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        setColor(rePixel, reGray)
      if reColor == white:
        setColor(rePixel, reWhite)

def signature(target):
  name = "Cristian Catalano"
  myFont = makeStyle("Impact", italic, 26)
  addTextWithStyle(target, 814, 532, name, myFont)
```