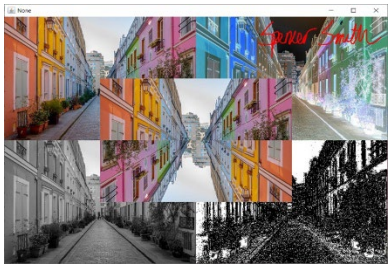
Spencer Smith

Completed:



Original:

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#Spencer Smith
#Project 2
def collage():
  srcPic = getSrcPicture() #Call 1st function
  #explore (srcPic)
  srcHeight = getHeight(srcPic)
  srcWidth = getWidth(srcPic)
  negPic = negative(srcPic) #Call 2nd function
  greyPic = greyScale(srcPic) #Call 3rd function
  edgePic = edge(srcPic) #Call 4th function
  mirrorPic = mirrorHalf(srcPic) #Call 5th function
  signPic = getSignPicture() #Call 6th function
  #explore(signPic)
  canvas = makeEmptyPicture(2*srcWidth,2*srcHeight)#create canvas
  copyInto(srcPic,canvas,0,0) #copy original pic into top left
  copyInto(negPic,canvas,srcWidth,0) #copy negative pic into top right
  copyInto(greyPic,canvas,0,srcHeight) #copy grey pic into bottom left
  copyInto(edgePic,canvas,srcWidth,srcHeight) #copy edge pic into bottom right
  copyInto(mirrorPic,canvas,srcWidth/2,srcHeight/2) #copy mirror pic into middle
  targX = (2*srcWidth)-getWidth(signPic)
  targY = 0
  spencerSign = chromakeySig(signPic,canvas,targX,targY) #Call 7th function
  show(canvas)
#Function 1
def getSrcPicture():
  setMediaPath()
  pic = makePicture(getMediaPath("source.jpg"))
  return pic
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#Function 2
def negative(pic):
  newPic = duplicatePicture(pic)
  for px in getAllPixels(newPic):
    rVal = getRed(px)
    gVal = getGreen(px)
    bVal = getBlue(px)
    negColor = makeColor(255-rVal, 255-gVal, 255-bVal)
    setColor(px,negColor)
  return newPic
#Fuction 3
def greyScale(pic):
  newPic = duplicatePicture(pic)
  for px in getAllPixels(newPic):
    rVal = getRed(px)
    gVal = getGreen(px)
    bVal = getBlue(px)
    greyVal = (rVal + gVal + bVal)/3.0
    myGrey = makeColor(greyVal, greyVal, greyVal)
    setColor(px,myGrey)
  return newPic
#Function 4
def edge(pic):
  newPic = duplicatePicture(pic)
  for px in getAllPixels(newPic):
    x = getX(px)
    y = getY(px)
    if y<getHeight(newPic)-1 and x<getWidth(newPic)-1:
      colorSum = getRed(px) + getGreen(px) + getBlue(px)
      pixelOverOne = getPixelAt(newPic, x+1, y+1)
      colorSumOverOne = getRed(pixelOverOne) + getGreen(pixelOverOne) + getBlue(pixelOverOne)
      colorDiff = abs(colorSum-colorSumOverOne)
      if colorDiff > 10:
        setColor(px,black)
      if colorDiff <= 10:
        setColor(px,white)
  return newPic
#Function 5
def mirrorHalf(pic):
  newPic = duplicatePicture(pic)
  allPixels = getAllPixels(newPic)
  target = len(allPixels)-1
  for index in range(0,len(allPixels)/2):
    topPx = allPixels[index]
    topColor = getColor(topPx)
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    botPx = allPixels[target]
    setColor(botPx,topColor)
    target = target-1
  return newPic
#Function 6
def getSignPicture():
  setMediaPath()
  pic = makePicture(getMediaPath("signature.jpg"))
  return pic
 #Function 7
def chromakeySig(source,canvas,targX,targY):
  for sx in range(0,getWidth(source)):
    for sy in range(0,getHeight(source)):
      sPx = getPixelAt(source,sx,sy)
      sColor = getColor(sPx)
      targPx = getPixelAt(canvas,sx+targX,sy+targY)
      if distance(black,sColor)<180:
        setColor(targPx,red)
```