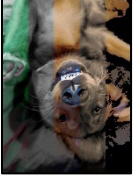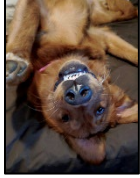# Gabbi Fox

Completed   Originals


```python
#Gabbi Fox - October 11th, 2023

#funtion used to scale picture down small enough to fit on canvas
def scaleDown(picture_in,picture_out):
  sourceX = 0
  for targetX in range(0,getWidth(picture_out)-2):
    sourceY = 0
    for targetY in range(0,getHeight(picture_out)-2):
      color = getColor(getPixel(picture_in,sourceX,sourceY))
      setColor(getPixel(picture_out,targetX,targetY),color)
      sourceY = sourceY + 2
    sourceX = sourceX + 2

#crops first section and pastes into canvas
def crop1(src,canvas):
    targetX = 0
    for sourceX in range(0,getWidth(src)/5):
     targetY = 0
     for sourceY in range(0,getHeight(src)):
       color=getColor(getPixel(src,sourceX,sourceY))
       setColor(getPixel(canvas,targetX,targetY),color)
       targetY = targetY + 1
     targetX = targetX + 1

#crops second section and pastes into canvas
def crop2(canvas,pic):
    targetBeginX = getWidth(pic)/5
    targetEndX = getWidth(pic)/5 * 2
    x = getWidth(pic)/5
    for x in range(targetBeginX,targetEndX):
      for y in range(0,getHeight(pic)):
        pixelsToCopy = getPixel(pic,x,y)
        copyColor = getColor(pixelsToCopy)
        setColor(getPixel(canvas,x,y),copyColor)
        y = y + 1
      x = x + 1

#crops third section and pastes into canvas
def crop3(canvas,pic):
    targetBeginX = getWidth(pic)/5 * 2
    targetEndX = getWidth(pic)/5 * 3
    x = getWidth(pic)/5 * 2
    for x in range(targetBeginX,targetEndX):
      for y in range(0,getHeight(pic)):
        pixelsToCopy = getPixel(pic,x,y)
        copyColor = getColor(pixelsToCopy)
        setColor(getPixel(canvas,x,y),copyColor)
        y = y + 1
```

```
      x = x + 1

#crops fourth section and pastes into canvas
def crop4(canvas,pic):
    targetBeginX = getWidth(pic)/5 * 3
    targetEndX = getWidth(pic)/5 * 4
    x = getWidth(pic)/5 * 3
    for x in range(targetBeginX,targetEndX):
      for y in range(0,getHeight(pic)):
        pixelsToCopy = getPixel(pic,x,y)
        copyColor = getColor(pixelsToCopy)
        setColor(getPixel(canvas,x,y),copyColor)
        y = y + 1
      x = x + 1

#crops fifth section and pastes into canvas
def crop5(canvas,pic):
    targetBeginX = getWidth(pic)/5 * 4
    targetEndX = getWidth(pic)
    x = getWidth(pic)/5 * 4
    for x in range(targetBeginX,targetEndX):
      for y in range(0,getHeight(pic)):
        pixelsToCopy = getPixel(pic,x,y)
        copyColor = getColor(pixelsToCopy)
        setColor(getPixel(canvas,x,y),copyColor)
        y = y + 1
      x = x + 1

#swaps colors in photo
def swap(picture):
  for p in getPixels(picture):
    r = getRed(p)
    b = getBlue(p)
    g = getGreen(p)
    setRed (p,b)
    setBlue (p,g)
    setGreen(p,r)

#removes color from photo
def grayScale(picture):
  for p in getPixels(picture):
    intensity = (getRed(p)+getGreen(p)+getBlue(p))/3
    setColor (p,makeColor(intensity,intensity,intensity))

#removes color from photo, then adds a sepia tone
def sepiaTone(picture):
  grayScale(picture)
  for p in getPixels(picture):
    red = getRed(p)
    blue = getBlue(p)
    if(red < 63):
      red = red * 1.1
      blue = blue * 0.9
    if(red > 62 and red < 192):
      red = red * 1.15
      blue = blue * 0.85
    if(red >191):
      red = red * 1.08
    if(red > 255):
      red = 255
```

```
      blue = blue * 0.93
    setBlue(p,blue)
    setRed(p,red)

#posterizes photo with 3 colors
def posterize3(source):
  for p in getPixels(source):
    r = getRed(p)
    g = getGreen(p)
    b = getBlue(p)
    luminance = (r+g+b)/3
    if luminance < 75:
      setColor(p,black)
    if luminance > 75 > 200:
      setColor(p,gray)
    if luminance > 200:
      setColor(p,white)

#main funtion that commands all of the rest of the functions
def collage():
  pic = makePicture(getMediaPath('charlie3.jpg'))
  small_pic = makeEmptyPicture(736,1000)
  small_pic2 = makeEmptyPicture(736,1000)
  small_pic3 = makeEmptyPicture(736,1000)
  small_pic4 = makeEmptyPicture(736,1000)
  small_pic5 = makeEmptyPicture(736,1000)
  canvas =  makeEmptyPicture(736,1000)
  test = makeEmptyPicture(736,1000)
  scaleDown(pic,small_pic)
  scaleDown(pic,small_pic2)
  scaleDown(pic,small_pic3)
  scaleDown(pic,small_pic4)
  scaleDown(pic,small_pic5)
  swap(small_pic)
  crop1(small_pic,canvas)
  grayScale(small_pic2)
  crop2(canvas,small_pic2)
  crop3(canvas,small_pic3)
  sepiaTone(small_pic4)
  crop4(canvas,small_pic4)
  posterize3(small_pic5)
  crop5(canvas,small_pic5)
  explore(canvas)
```