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#Lab 3
#Warm Up
def halfRed():
 filename = pickAFile()
 pic = makePicture(filename)
 pixels = getPixels(pic)
 for p in pixels:
   r = getRed(p)
    setRed(p, r * 0.5)
    repaint(pic)
#Warm Up
def noBlue():
  filename = pickAFile()
 pic = makePicture(filename)
 pixels = getPixels(pic)
 for p in pixels:
   b = getBlue(p)
    setBlue(p, b * 0.0)
    repaint(pic)
#Problem 1
def lessRed(n):
 filename = pickAFile()
 pic = makePicture(filename)
 pixels = getPixels(pic)
 for p in pixels:
   r = getRed(p)
    setRed(p, r * n / 100)
    repaint(pic)
#Problem 2
def moreRed(n):
 filename = pickAFile()
 pic = makePicture(filename)
 pixels = getPixels(pic)
 for p in pixels:
    r = getRed(p)
    setRed(p, r + r * n / 100)
    repaint(pic)
#Problem 3
def roseColoredGlasses():
 filename = pickAFile()
 pic = makePicture(filename)
 pixels = getPixels(pic)
 for p in pixels:
   r = qetRed(p)
   b = getBlue(p)
    q = qetGreen(p)
    setRed(p, r + 255)
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setBlue(p, b +180)
    setGreen(p, g + 105)
    repaint(pic)
# Problem 4
# Citing a URL that helped us understand how "color" is handled and
# How to make the image lighter
# http://www.cs.uregina.ca/Links/class-info/325/PythonPictures/
def lightenUp():
 filename = pickAFile()
 pic = makePicture(filename)
 pixels = getPixels(pic)
 for p in getPixels(pic):
    color = qetColor(p)
    color = makeLighter(color)
    setColor(p,color)
    repaint(pic)
# Problem 5
# Citing a URL that helped us understand how "negate" is handled and
# How to turn an image into a negative
# http://www.cs.uregina.ca/Links/class-info/325/PythonPictures/
def makeNegative():
 filename = pickAFile()
 pic = makePicture(filename)
 pixels = getPixels(pic)
 for p in getPixels(pic):
   r = getRed(p)
   b = getBlue(p)
    g = getGreen(p)
    negColor = makeColor(255 - r, 255 - g, 255 - b)
    setColor(p,negColor)
    repaint (pic)
# Problem 6
# Citing a URL that helped us understand how "black and white" is handled
and
# How to turn an image into a grayscale
# http://www.cs.uregina.ca/Links/class-info/325/PythonPictures/
def BnW():
 filename = pickAFile()
 pic = makePicture(filename)
 pixels = getPixels(pic)
 for p in getPixels(pic):
    r = qetRed(p)
    g = getGreen(p)
   b = qetBlue(p)
    lum = (r + g + b) / 3
    setColor(p, makeColor(lum,lum,lum))
    repaint(pic)
def betterBnW():
  filename = pickAFile()
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pic = makePicture(filename)
pixels = getPixels(pic)
for p in getPixels(pic):
    r = getRed(p)*0.299
    g = getGreen(p)*0.587
    b = getBlue(p)* 0.114
    lum = r + g + b
    setColor(p, makeColor(lum,lum,lum))
    repaint(pic)
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