# Tierra Williams
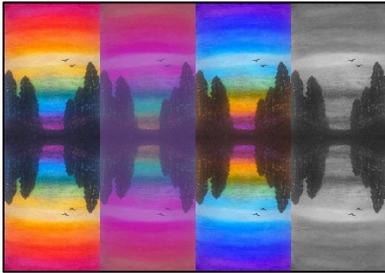
Completed   Originals
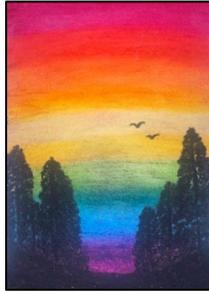

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#Project 2!!! Tierra Williams - October 17, 2022

def collage():
  rainbow = makePicture(getMediaPath("rainbowpic.JPG"))
  height = getHeight(rainbow)
  width = getWidth(rainbow)

  canvas = makeEmptyPicture(width*4,height*2,black)
  height2 = getHeight(canvas)
  width2 = getWidth(canvas)

  colAveRainbow = makePicture(getMediaPath("rainbowpic.JPG"))
  colorAverage(colAveRainbow)
  repaint(colAveRainbow)

  colSwapRainbow = makePicture(getMediaPath("rainbowpic.JPG"))
  colorSwap(colSwapRainbow)
  repaint(colSwapRainbow)

  grayRainbow = makePicture(getMediaPath("rainbowpic.JPG"))
  grayScale(grayRainbow)
  repaint(grayRainbow)

  copy(rainbow,canvas,0,0)
  copy(colAveRainbow,canvas,width,0)
  copy(colSwapRainbow,canvas,width*2,0)
  copy(grayRainbow,canvas,width*3,0)

  mirrorHorizontal(canvas)
  explore(canvas)

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

def colorAverage(picture):
  for p in getPixels(picture):
    redPixel = getRed(p)
    bluePixel = getBlue(p)
    greenPixel = getGreen(p)
    redAvg = (redPixel + 127) / 2
    blueAvg = (bluePixel + 60) / 2
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    greenAvg = (greenPixel + 180) / 2
    setColor(p, makeColor(redAvg, blueAvg, greenAvg))

def colorSwap(picture):
  for p in getPixels(picture):
    redPixel = getRed(p)
    bluePixel = getBlue(p)
    greenPixel = getGreen(p)
    setColor(p, makeColor(bluePixel, greenPixel, redPixel))

def mirrorHorizontal(source):
  mirrorPoint=getHeight(source)/2
  height=getHeight(source)
  for y in range(0,mirrorPoint):
    for x in range(0,getWidth(source)):
      topPixel=getPixel(source,x,y)
      bottomPixel=getPixel(source,x,height-y-1)
      color = getColor(topPixel)
      setColor(bottomPixel,color)

def copy(srcpic,destpic,targx,targy):
  targetX=targx
  for sourceX in range(0,getWidth(srcpic)):
    targetY=targy
    for sourceY in range(0,getHeight(srcpic)):
      px = getPixel(srcpic,sourceX,sourceY)
      tx = getPixel(destpic,targetX,targetY)
      setColor(tx,getColor(px))
      targetY=targetY+1
    targetX=targetX+1
```