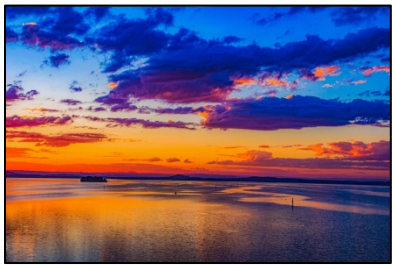
Cameron Bandy

Completed

Original



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#Cameron Bandy, March 15th
def artproject():
  sunset = makePicture("colorful_sunset.jpg")
  bwsunset = makePicture("colorful_sunset.jpg")
  grsunset = makePicture("colorful_sunset.jpg")
  bosunset = makePicture("colorful_sunset.jpg")
  gsunset = makePicture("colorful_sunset.jpg")
  rsunset = makePicture("colorful_sunset.jpg")
  origsunset = makePicture("colorful_sunset.jpg")
  canvas = makeEmptyPicture(getWidth(sunset)*2, getHeight(sunset)*2)
  TopLeft = colorGreenRed(grsunset)
  copyTL(TopLeft, canvas)
  TopRight = colorBlueOrange(bosunset)
  copyTR(TopRight, canvas)
  BottomLeft = colorGreen(gsunset)
  copyBL(BottomLeft, canvas)
  BottomRight = colorRed(rsunset)
  copyBR(BottomRight, canvas)
  BlackandWhite = BlackWhite(bwsunset)
  copyBlackWhite(BlackandWhite, canvas)
  original = scale(1.1)
  copyorig(original, canvas)
  show(canvas)

#Scale the original Picture
def scale(factor):
  orig = makePicture("colorful_sunset.jpg")
  scaled = makeEmptyPicture(int(getWidth(orig)/factor),int(getHeight(orig)/factor))
  picture_big = makeEmptyPicture(getWidth(orig),getHeight(orig))
  scaleup(orig, scaled, 1.0/factor)
  scaleup(scaled, picture_big, factor)
  return scaled

def scaleup(scaled, picture_big, factor):
  sourceX = 0
  for targetX in range(0, int(getWidth(scaled)*factor)):
    sourceY = 0
    for targetY in range(0, int(getHeight(scaled)*factor)):
      srcpx = getPixel(scaled, int(sourceX), int(sourceY))
      color = getColor(srcpx)
      setColor(getPixel(picture_big, targetX, targetY), color)
      sourceY = sourceY + (1.0/factor)
    sourceX = sourceX + (1.0/factor)
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#Copies the original picture onto the canvas
def copyorig(scaled, canvas):
  targetX = 393
  for sourceX in range(0, 654):
    targetY = 262
    for sourceY in range(0, 436):
      color = getColor(getPixel(scaled, sourceX, sourceY))
      setColor(getPixel(canvas,targetX,targetY), color)
      targetY = targetY + 1
    targetX = targetX + 1

#Next 4 functions are the Copy Functions for the outer corners of the whole Picture
  #1
def copyTL(TopLeft, canvas):
  targetX = 0
  for sourceX in range(0, 720):
    targetY = 0
    for sourceY in range(0, 480):
      color = getColor(getPixel(TopLeft, sourceX, sourceY))
      setColor(getPixel(canvas,targetX,targetY), color)
      targetY = targetY + 1
    targetX = targetX + 1
  #2
def copyTR(TopRight, canvas):
  targetX = 720
  for sourceX in range(0, 720):
    targetY = 0
    for sourceY in range(0, 480):
      color = getColor(getPixel(TopRight, sourceX, sourceY))
      setColor(getPixel(canvas,targetX,targetY), color)
      targetY = targetY + 1
    targetX = targetX + 1
  #3
def copyBL(BottomLeft, canvas):
  targetX = 0
  for sourceX in range(0, 720):
    targetY = 480
    for sourceY in range(0, 480):
      color = getColor(getPixel(BottomLeft, sourceX, sourceY))
      setColor(getPixel(canvas,targetX,targetY), color)
      targetY = targetY + 1
    targetX = targetX + 1
  #4
def copyBR(BottomRight, canvas):
  targetX = 720
  for sourceX in range(0, 720):
    targetY= 480
    for sourceY in range(0, 480):
      color = getColor(getPixel(BottomRight, sourceX, sourceY))
      setColor(getPixel(canvas,targetX,targetY), color)
      targetY = targetY + 1
    targetX = targetX + 1


#Coppies the Black and White image to the center of the canvas
def copyBlackWhite(BlackandWhite, canvas):
  targetX = 360
  for sourceX in range(0, 720):
    targetY = 240
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    for sourceY in range(0, 480):
      color = getColor(getPixel(BlackandWhite, sourceX, sourceY))
      setColor(getPixel(canvas,targetX,targetY), color)
      targetY = targetY + 1
    targetX = targetX + 1

#Creates a Black Border around each of the outside Pictures
def border(sunset):
  bottom = getHeight(sunset)-6
  right = getWidth(sunset)-6
  for px in getPixels(sunset):
    y = getY(px)
    x = getX(px)
    if y < 6:
      setColor(px,black)
    if y > bottom:
      setColor(px,black)
    if x < 6:
      setColor(px,black)
    if x > right:
      setColor(px,black)

#Next 2 functions both create the Black and White picture used as the border for the
origional sunset image.
def luminance(pixel):
  r = getRed(pixel)
  g = getGreen(pixel)
  b = getBlue(pixel)
  return (r+g+b)/3
#2
def BlackWhite(sunset):
  for px in getPixels(sunset):
    x = getX(px)
    y = getY(px)
    if y < getHeight(sunset)-1 and x < getWidth(sunset)-1:
      botrt = getPixel(sunset, x+1, y+1)
      thislum = luminance(px)
      brlum = luminance(botrt)
      if abs(brlum-thislum) > 10:
        setColor(px, white)
      if abs(brlum-thislum) <= 10:
        setColor(px, black)
  return sunset

#Top Left image
def colorGreenRed(sunset):
  for px in getPixels(sunset):
    valueBlue = getBlue(px)
    setBlue(px, valueBlue*0.3)
    valueGreen = getGreen(px)
    setGreen(px, valueGreen*0.6)
  blur(sunset)
  border(sunset)
  return sunset

#Top Right image
def colorBlueOrange(sunset):
  for px in getPixels(sunset):
    valueRed = getRed(px)
    setRed(px, valueRed*0.6)
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    valueGreen = getGreen(px)
    setGreen(px, valueGreen*0.6)
  blur(sunset)
  border(sunset)
  return sunset

#Bottom Left image
def colorGreen(sunset):
  for px in getPixels(sunset):
    valueBlue = getBlue(px)
    setBlue(px, valueBlue*0.4)
    valueRed = getRed(px)
    setRed(px, valueRed*0.4)
  blur(sunset)
  border(sunset)
  return sunset

#Bottom Right image
def colorRed(sunset):
  for px in getPixels(sunset):
    valueBlue = getBlue(px)
    setBlue(px, valueBlue*0.7)
    valueGreen = getGreen(px)
    setGreen(px, valueGreen*0.3)
  blur(sunset)
  border(sunset)
  return sunset

#Blurs all four corner images
def blur(pic):
  target = duplicatePicture(pic)
  for x in range(6, getWidth(pic)-6):
    for y in range(6, getHeight(pic)-6):

      #Axis Points Pixels
      C = getPixel(pic,x,y)
      T = getPixel(pic,x,y-1)
      T2 = getPixel(pic,x,y-2)
      T3 = getPixel(pic,x,y-3)
      T4 = getPixel(pic,x,y-4)
      T5 = getPixel(pic,x,y-5)
      T6 = getPixel(pic,x,y-6)
      R = getPixel(pic,x+1,y)
      R2 = getPixel(pic,x+2,y)
      R3 = getPixel(pic,x+3,y)
      R4 = getPixel(pic,x+4,y)
      R5 = getPixel(pic,x+5,y)
      R6 = getPixel(pic,x+6,y)
      B =  getPixel(pic,x,y+1)
      B2 = getPixel(pic,x,y+2)
      B3 = getPixel(pic,x,y+3)
      B4 = getPixel(pic,x,y+4)
      B5 = getPixel(pic,x,y+5)
      B6 = getPixel(pic,x,y+6)
      L = getPixel(pic,x-1,y)
      L2 = getPixel(pic,x-2,y)
      L3 = getPixel(pic,x-3,y)
      L4 = getPixel(pic,x-4,y)
      L5 = getPixel(pic,x-5,y)
      L6 = getPixel(pic,x-6,y)
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#1st Quadrant Pixels
RT = getPixel(pic,x+1,y-1)
RT2 = getPixel(pic,x+1,y-2)
RT3 = getPixel(pic,x+1,y-3)
RT4 = getPixel(pic,x+1,y-4)
RT5 = getPixel(pic,x+1,y-5)
RT6 = getPixel(pic,x+1,y-6)
R2T = getPixel(pic,x+2,y-1)
R2T2 = getPixel(pic,x+2,y-2)
R2T3 = getPixel(pic,x+2,y-3)
R2T4 = getPixel(pic,x+2,y-4)
R2T5 = getPixel(pic,x+2,y-5)
R3T = getPixel(pic,x+3,y-1)
R3T2 = getPixel(pic,x+3,y-2)
R3T3 = getPixel(pic,x+3,y-3)
R3T4 = getPixel(pic,x+3,y-4)
R3T5 = getPixel(pic,x+3,y-5)
R4T = getPixel(pic,x+4,y-1)
R4T2 = getPixel(pic,x+4,y-2)
R4T3 = getPixel(pic,x+4,y-3)
R4T4 = getPixel(pic,x+4,y-4)
R5T = getPixel(pic,x+5,y-1)
R5T2 = getPixel(pic,x+5,y-2)
R5T3 = getPixel(pic,x+5,y-3)
R6T = getPixel(pic,x+6,y-1)

#2nd Quadrant Pixels
LT = getPixel(pic,x-1,y-1)
LT2 = getPixel(pic,x-1,y-2)
LT3 = getPixel(pic,x-1,y-3)
LT4 = getPixel(pic,x-1,y-4)
LT5 = getPixel(pic,x-1,y-5)
LT6 = getPixel(pic,x-1,y-6)
L2T = getPixel(pic,x-2,y-1)
L2T2 = getPixel(pic,x-2,y-2)
L2T3 = getPixel(pic,x-2,y-3)
L2T4 = getPixel(pic,x-2,y-4)
L2T5 = getPixel(pic,x-2,y-5)
L3T = getPixel(pic,x-3,y-1)
L3T2 = getPixel(pic,x-3,y-2)
L3T3 = getPixel(pic,x-3,y-3)
L3T4 = getPixel(pic,x-3,y-4)
L3T5 = getPixel(pic,x-3,y-5)
L4T = getPixel(pic,x-4,y-1)
L4T2 = getPixel(pic,x-4,y-2)
L4T3 = getPixel(pic,x-4,y-3)
L4T4 = getPixel(pic,x-4,y-4)
L5T = getPixel(pic,x-5,y-1)
L5T2 = getPixel(pic,x-5,y-2)
L5T3 = getPixel(pic,x-5,y-3)
L6T = getPixel(pic,x-6,y-1)

#3rd Quadrant Pixels
LB = getPixel(pic,x-1,y+1)
LB2 = getPixel(pic,x-1,y+2)
LB3 = getPixel(pic,x-1,y+3)
LB4 = getPixel(pic,x-1,y+4)
LB5 = getPixel(pic,x-1,y+5)
LB6 = getPixel(pic,x-1,y+6)
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      L2B = getPixel(pic,x-2,y+1)
      L2B2 = getPixel(pic,x-2,y+2)
      L2B3 = getPixel(pic,x-2,y+3)
      L2B4 = getPixel(pic,x-2,y+4)
      L2B5 = getPixel(pic,x-2,y+5)
      L3B = getPixel(pic,x-3,y+1)
      L3B2 = getPixel(pic,x-3,y+2)
      L3B3 = getPixel(pic,x-3,y+3)
      L3B4 = getPixel(pic,x-3,y+4)
      L3B5 = getPixel(pic,x-3,y+5)
      L4B = getPixel(pic,x-4,y+1)
      L4B2 = getPixel(pic,x-4,y+2)
      L4B3 = getPixel(pic,x-4,y+3)
      L4B4 = getPixel(pic,x-4,y+4)
      L5B = getPixel(pic,x-5,y+1)
      L5B2 = getPixel(pic,x-5,y+2)
      L5B3 = getPixel(pic,x-5,y+3)
      L6B = getPixel(pic,x-6,y+1)

      #4th Quadrant Pixels
      RB = getPixel(pic,x+1,y+1)
      RB2 = getPixel(pic,x+1,y+2)
      RB3 = getPixel(pic,x+1,y+3)
      RB4 = getPixel(pic,x+1,y+4)
      RB5 = getPixel(pic,x+1,y+5)
      RB6 = getPixel(pic,x+1,y+6)
      R2B = getPixel(pic,x+2,y+1)
      R2B2 = getPixel(pic,x+2,y+2)
      R2B3 = getPixel(pic,x+2,y+3)
      R2B4 = getPixel(pic,x+2,y+4)
      R2B5 = getPixel(pic,x+2,y+5)
      R3B = getPixel(pic,x+3,y+1)
      R3B2 = getPixel(pic,x+3,y+2)
      R3B3 = getPixel(pic,x+3,y+3)
      R3B4 = getPixel(pic,x+3,y+4)
      R3B5 = getPixel(pic,x+3,y+5)
      R4B = getPixel(pic,x+4,y+1)
      R4B2 = getPixel(pic,x+4,y+2)
      R4B3 = getPixel(pic,x+4,y+3)
      R4B4 = getPixel(pic,x+4,y+4)
      R5B = getPixel(pic,x+5,y+1)
      R5B2 = getPixel(pic,x+5,y+2)
      R5B3 = getPixel(pic,x+5,y+3)
      R6B = getPixel(pic,x+6,y+1)

      #Average of all surrounding pixels to make the blur more... blurrier
      newRed =
(getRed(C)+getRed(T)+getRed(T2)+getRed(T3)+getRed(T4)+getRed(T5)+getRed(T6)+getRed(R)
+getRed(R2)+getRed(R3)+getRed(R4)+getRed(R5)+getRed(R6)+getRed(B)+getRed(B2)+getRed(B
3)+getRed(B4)+getRed(B5)+getRed(B6)+getRed(L2)+getRed(L3)+getRed(L4)+getRed(L5)+getRe
d(L6)+getRed(RT)+getRed(RT2)+getRed(RT3)+getRed(RT4)+getRed(RT5)+getRed(RT6)+getRed(R
2T)+getRed(R2T2)+getRed(R2T3)+getRed(R2T4)+getRed(R2T5)+getRed(R3T)+getRed(R3T2)+getR
ed(R3T3)+getRed(R3T4)+getRed(R3T5)+getRed(R4T)+getRed(R4T2)+getRed(R4T3)+getRed(R4T4)
+getRed(R5T)+getRed(R5T2)+getRed(R5T3)+getRed(R6T)+getRed(RB)+getRed(RB2)+getRed(RB3)
+getRed(RB4)+getRed(RB5)+getRed(RB6)+getRed(R2B)+getRed(R2B2)+getRed(R2B3)+getRed(R2B
4)+getRed(R2B5)+getRed(R3B)+getRed(R3B2)+getRed(R3B3)+getRed(R3B4)+getRed(R3B5)+getRe
d(R4B)+getRed(R4B2)+getRed(R4B3)+getRed(R4B4)+getRed(R5B)+getRed(R5B2)+getRed(R5B3)+g
etRed(RB6)+getRed(LB)+getRed(LB2)+getRed(LB3)+getRed(LB4)+getRed(LB5)+getRed(LB6)+get
Red(L2B)+getRed(L2B2)+getRed(L2B3)+getRed(L2B4)+getRed(L2B5)+getRed(L3B)+getRed(L3B2)
+getRed(L3B3)+getRed(L3B4)+getRed(L3B5)+getRed(L4B)+getRed(L4B2)+getRed(L4B3)+getRed(
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L4B4)+getRed(L5B)+getRed(L5B2)+getRed(L5B3)+getRed(L6B)+getRed(LT)+getRed(LT2)+getRed
(LT3)+getRed(LT4)+getRed(LT5)+getRed(LT6)+getRed(L2T)+getRed(L2T2)+getRed(L2T3)+getRe
d(L2T4)+getRed(L2T5)+getRed(L3T)+getRed(L3T2)+getRed(L3T3)+getRed(L3T4)+getRed(L3T5)+
getRed(L4T)+getRed(L4T2)+getRed(L4T3)+getRed(L4T4)+getRed(L5T)+getRed(L5T2)+getRed(L5
T3)+getRed(L6T))/121
      newGreen =
(getGreen(C)+getGreen(T)+getGreen(T2)+getGreen(T3)+getGreen(T4)+getGreen(T5)+getGreen
(T6)+getGreen(R)+getGreen(R2)+getGreen(R3)+getGreen(R4)+getGreen(R5)+getGreen(R6)+get
Green(B)+getGreen(B2)+getGreen(B3)+getGreen(B4)+getGreen(B5)+getGreen(B6)+getGreen(L2
)+getGreen(L3)+getGreen(L4)+getGreen(L5)+getGreen(L6)+getGreen(RT)+getGreen(RT2)+getG
reen(RT3)+getGreen(RT4)+getGreen(RT5)+getGreen(RT6)+getGreen(R2T)+getGreen(R2T2)+getG
reen(R2T3)+getGreen(R2T4)+getGreen(R2T5)+getGreen(R3T)+getGreen(R3T2)+getGreen(R3T3)+
getGreen(R3T4)+getGreen(R3T5)+getGreen(R4T)+getGreen(R4T2)+getGreen(R4T3)+getGreen(R4
T4)+getGreen(R5T)+getGreen(R5T2)+getGreen(R5T3)+getGreen(R6T)+getGreen(RB)+getGreen(R
B2)+getGreen(RB3)+getGreen(RB4)+getGreen(RB5)+getGreen(RB6)+getGreen(R2B)+getGreen(R2
B2)+getGreen(R2B3)+getGreen(R2B4)+getGreen(R2B5)+getGreen(R3B)+getGreen(R3B2)+getGree
n(R3B3)+getGreen(R3B4)+getGreen(R3B5)+getGreen(R4B)+getGreen(R4B2)+getGreen(R4B3)+get
Green(R4B4)+getGreen(R5B)+getGreen(R5B2)+getGreen(R5B3)+getGreen(RB6)+getGreen(LB)+ge
tGreen(LB2)+getGreen(LB3)+getGreen(LB4)+getGreen(LB5)+getGreen(LB6)+getGreen(L2B)+get
Green(L2B2)+getGreen(L2B3)+getGreen(L2B4)+getGreen(L2B5)+getGreen(L3B)+getGreen(L3B2)
+getGreen(L3B3)+getGreen(L3B4)+getGreen(L3B5)+getGreen(L4B)+getGreen(L4B2)+getGreen(L
4B3)+getGreen(L4B4)+getGreen(L5B)+getGreen(L5B2)+getGreen(L5B3)+getGreen(L6B)+getGree
n(LT)+getGreen(LT2)+getGreen(LT3)+getGreen(LT4)+getGreen(LT5)+getGreen(LT6)+getGreen(
L2T)+getGreen(L2T2)+getGreen(L2T3)+getGreen(L2T4)+getGreen(L2T5)+getGreen(L3T)+getGre
en(L3T2)+getGreen(L3T3)+getGreen(L3T4)+getGreen(L3T5)+getGreen(L4T)+getGreen(L4T2)+ge
tGreen(L4T3)+getGreen(L4T4)+getGreen(L5T)+getGreen(L5T2)+getGreen(L5T3)+getGreen(L6T)
)/121
      newBlue =
(getBlue(C)+getBlue(T)+getBlue(T2)+getBlue(T3)+getBlue(T4)+getBlue(T5)+getBlue(T6)+ge
tBlue(R)+getBlue(R2)+getBlue(R3)+getBlue(R4)+getBlue(R5)+getBlue(R6)+getBlue(B)+getBl
ue(B2)+getBlue(B3)+getBlue(B4)+getBlue(B5)+getBlue(B6)+getBlue(L2)+getBlue(L3)+getBlu
e(L4)+getBlue(L5)+getBlue(L6)+getBlue(RT)+getBlue(RT2)+getBlue(RT3)+getBlue(RT4)+getB
lue(RT5)+getBlue(RT6)+getBlue(R2T)+getBlue(R2T2)+getBlue(R2T3)+getBlue(R2T4)+getBlue(
R2T5)+getBlue(R3T)+getBlue(R3T2)+getBlue(R3T3)+getBlue(R3T4)+getBlue(R3T5)+getBlue(R4
T)+getBlue(R4T2)+getBlue(R4T3)+getBlue(R4T4)+getBlue(R5T)+getBlue(R5T2)+getBlue(R5T3)
+getBlue(R6T)+getBlue(RB)+getBlue(RB2)+getBlue(RB3)+getBlue(RB4)+getBlue(RB5)+getBlue
(RB6)+getBlue(R2B)+getBlue(R2B2)+getBlue(R2B3)+getBlue(R2B4)+getBlue(R2B5)+getBlue(R3
B)+getBlue(R3B2)+getBlue(R3B3)+getBlue(R3B4)+getBlue(R3B5)+getBlue(R4B)+getBlue(R4B2)
+getBlue(R4B3)+getBlue(R4B4)+getBlue(R5B)+getBlue(R5B2)+getBlue(R5B3)+getBlue(RB6)+ge
tBlue(LB)+getBlue(LB2)+getBlue(LB3)+getBlue(LB4)+getBlue(LB5)+getBlue(LB6)+getBlue(L2
B)+getBlue(L2B2)+getBlue(L2B3)+getBlue(L2B4)+getBlue(L2B5)+getBlue(L3B)+getBlue(L3B2)
+getBlue(L3B3)+getBlue(L3B4)+getBlue(L3B5)+getBlue(L4B)+getBlue(L4B2)+getBlue(L4B3)+g
etBlue(L4B4)+getBlue(L5B)+getBlue(L5B2)+getBlue(L5B3)+getBlue(L6B)+getBlue(LT)+getBlu
e(LT2)+getBlue(LT3)+getBlue(LT4)+getBlue(LT5)+getBlue(LT6)+getBlue(L2T)+getBlue(L2T2)
+getBlue(L2T3)+getBlue(L2T4)+getBlue(L2T5)+getBlue(L3T)+getBlue(L3T2)+getBlue(L3T3)+g
etBlue(L3T4)+getBlue(L3T5)+getBlue(L4T)+getBlue(L4T2)+getBlue(L4T3)+getBlue(L4T4)+get
Blue(L5T)+getBlue(L5T2)+getBlue(L5T3)+getBlue(L6T))/121
      setColor(C, makeColor(newRed, newGreen, newBlue))
```