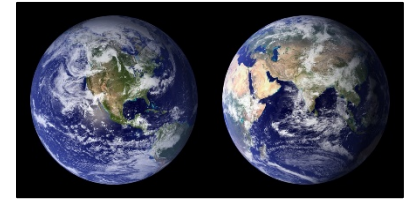# Jalen Hart

Completed   Originals


```
def mainFunction():
  wingPic=makePicture(getMediaPath("butterfly.jpeg"))
  spacePic=makePicture(getMediaPath("Space.jpeg"))
  earthPic=makePicture(getMediaPath("Earth.jpg"))
  signature=makePicture(getMediaPath("Signature.jpg"))
  sigSized=makeEmptyPicture(getWidth(signature)/6,getHeight(signature)/6)
  scalePic(signature,sigSized,1.0/6.0)
  oneWing=makeEmptyPicture(int(getWidth(wingPic)*(1.0/5.0)),int(getHeight(wingPic)*(1.0/5.0)))
  spaceNormal=makeEmptyPicture(int(getWidth(spacePic)*(1.0/4.8)),int(getHeight(spacePic)*(1.0/4.8)))
  earthNormal=makeEmptyPicture(getWidth(earthPic)/2,getHeight(earthPic)/2)
  earthFit2=makeEmptyPicture(getWidth(earthPic)/4,getHeight(earthPic)/2)
  earthFit=makeEmptyPicture(getWidth(earthNormal)/2,getHeight(earthNormal))
  scalePic(earthPic,earthNormal,1.0/2.0)
  copy(earthNormal,earthFit,0,0,getWidth(earthNormal)/2,getHeight(earthNormal),0,0)
  copy(earthNormal,earthFit2,getWidth(earthNormal)/2,0,getWidth(earthNormal),getHeight(earthNormal),0,0)
  finalPic=makeEmptyPicture(1000,736)
  twoWings=makeEmptyPicture(733,320)
  fullWings=makeEmptyPicture(1000,736,black)
  scalePic(wingPic,oneWing,1.0/5.0)
  scalePic(spacePic,spaceNormal,1.0/4.8)
  copy(oneWing,twoWings,41,120,408,440,0,0)
  mirror(twoWings,twoWings,0,0,366,320)
  copy(twoWings,fullWings,0,0,733,320,134,208)
  chromakey(fullWings,spaceNormal)
  chromakey2(fullWings,spaceNormal)
  chromaEarth(earthFit,fullWings)
  edgedetect(earthFit2,45)
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    chromaEarth2(earthFit2,fullWings)
    chromaSig(sigSized,fullWings)
    copy(earthFit,fullWings,0,0,getWidth(earthFit),getHeight(earthFit),741,450)
    copy(earthFit2,fullWings,0,0,getWidth(earthFit2),getHeight(earthFit2),0,0)
    copy(sigSized,fullWings,0,0,getWidth(sigSized),getHeight(sigSized),0,588)
    explore(fullWings)

def scalePic(picture_in,picture_out,scale):
    sourceX=0
    for targetX in range(0,int(getWidth(picture_in)*scale)):
        sourceY=0
        for targetY in range(0,int(getHeight(picture_in)*scale)):
            pixel = getPixel(picture_in,int(sourceX),int(sourceY))
            color = getColor(pixel)
            setColor(getPixel(picture_out,targetX,targetY),color)
            sourceY=sourceY+(1.0/scale)
        sourceX=sourceX+(1.0/scale)
def copy(picture_in,picture_out,startx,starty,stopx,stopy,targetx,targety):
    newX=0
    for x in range(startx,stopx):
        for y in range(starty,stopy):
            newPixel=getPixel(picture_in,x,y)
            changeColor=getColor(newPixel)
            pixel=getPixel(picture_out,newX+targetx,y-int(starty)+targety)
            setColor(pixel,changeColor)
        newX=newX+1
def mirror(picture_in,picture_out,startx,starty,stopx,stopy):
    newX=0
    for x in range(startx,stopx):
        for y in range(starty,stopy):
            newPixel=getPixel(picture_in,x,y)
            changeColor=getColor(newPixel)
            pixel=getPixel(picture_out,732-newX,y-int(starty))
            setColor(pixel,changeColor)
        newX=newX+1
def chromakey(source,bg):
    for px in getPixels(source):
        x= getX(px)
        y= getY(px)
        if ((100<getRed(px)<=175) and (120<getGreen(px)<=200) and (120<getBlue(px)<=185)):
            bgpx = getPixel(bg,x,y)
            bgcol = getColor(bgpx)
            setColor(px,bgcol)
```

```python
def chromakey2(source,bg):
  for px in getPixels(source):
    x= getX(px)
    y= getY(px)
    if ((getRed(px)<=0) and (getGreen(px)<=0) and (getBlue(px)<=0)):
      bgpx = getPixel(bg,x,y)
      bgcol = getColor(bgpx)
      setColor(px,bgcol)
def chromaEarth(source,bg):
  for px in getPixels(source):
    x=getX(px)
    y=getY(px)
    if ((getRed(px)<=5) and (getGreen(px)<=5) and (getBlue(px)<=5)):
      bgpx=getPixel(bg,x+741,y+450)
      bgcol=getColor(bgpx)
      setColor(px,bgcol)
def chromaEarth2(source,bg):
  for px in getPixels(source):
    x=getX(px)
    y=getY(px)
    if ((getRed(px)<=5) and (getGreen(px)<=5) and (getBlue(px)<=5)):
      bgpx=getPixel(bg,x,y)
      bgcol=getColor(bgpx)
      setColor(px,bgcol)
def luminance(pixel):
  r = getRed(pixel)
  g = getGreen(pixel)
  b = getBlue(pixel)
  return (r+g+b)/3
def edgedetect(source, threshold):
  for px in getPixels(source):
    x = getX(px)
    y = getY(px)
    if y < getHeight(source)-1 and x < getWidth(source)-1:
      botrt = getPixel(source,x+1,y+1)
      thislum = luminance(px)
      brlum = luminance(botrt)
      if abs(brlum-thislum) > threshold:
        setColor(px,white)
      if abs(brlum-thislum) <= threshold:
        setColor(px,black)
def chromaSig(source,bg):
  for px in getPixels(source):
    x=getX(px)
    y=getY(px)
```

```
if ((getRed(px)>=100) and (getGreen(px)>=100) and (getBlue(px)>=100)):
  bgpx=getPixel(bg,x,y+588)
  bgcol=getColor(bgpx)
  setColor(px,bgcol)
elif((getRed(px)<100) and (getGreen(px)<100) and (getBlue(px)<100)):
  setColor(px,yellow)
```