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BE IT

Batch: D

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Uploading the image from local directory

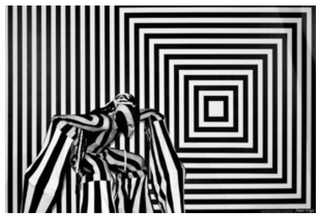
```
from google.colab import files
uploaded = files.upload()
```

Choose Files DIP_Lab2_image.jpg
- **DIP_Lab2_image.jpg**(image/jpeg) - 121646 bytes, last modified: 8/30/2021 - 100% done
Saving DIP_Lab2_image.jpg to DIP_Lab2_image.jpg

```
path = "/content/DIP_Lab2_image.jpg"
```

Input Image

```
from PIL import Image
from PIL import ImageFilter
image = Image.open(path)
image.resize((300,200))
```



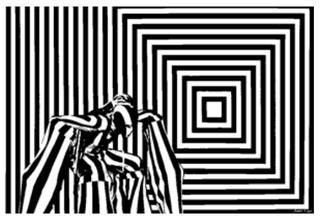
Digital Negative

```
from PIL import Image
from PIL import ImageFilter
image = Image.open(path)
for i in range(0, image.size[0]-1):
  for j in range(0, image.size[1]-1):
    pixelColorVals = image.getpixel((i,j))
    redPixel = 255 - pixelColorVals[0]
    greenPixel = 255 - pixelColorVals[1]
    bluePixel = 255 - pixelColorVals[2]
    image.putpixel((i,j),(redPixel, greenPixel, bluePixel))
image.resize((300,200))
```

Threshold

```
image = Image.open(path);
t = 120
for i in range(image.size[0]):
  for j in range(image.size[1]):
    pix=image.getpixel((i, j))
    pix0=pix[0]
    pix1=pix[1]
    pix2=pix[2]
```

```
    if pix[0]<t:
      pix0=0
    else:
      pix0=256-1
    if pix[1]<t:
      pix1=0
    else:
      pix1=256-1
    if pix[2]<t:
      pix2=0
    else:
      pix2=256-1
    image.putpixel((i, j), (pix0,pix1,pix2))
image.resize((300,200))
```



Grey level slicing without background

```
image = Image.open(path)
a = 120
b = 190
for i in range(image.size[0]):
  for j in range(image.size[1]):
    pix=image.getpixel((i, j))
    pix0=pix[0]
    pix1=pix[1]
    pix2=pix[2]
    if a<=pix[0] and pix[0]<=b:
      pix0=256-1
    else:
      pix0=0
    if a<=pix[1] and pix[1]<=b:
      pix1=256-1
    else:
      pix1=0
    if a<=pix[2] and pix[2]<=b:
      pix2=256-1
    else:
      pix2=0
    image.putpixel((i, j), (pix0,pix1,pix2))
image.resize((300,200))
```

Grey level slicing with background

```
image = Image.open(path)
image.show()
a = 120
b = 190
for i in range(image.size[0]):
  for j in range(image.size[1]):
    pix=image.getpixel((i, j))
#print(pix[0],pix[1],pix[2])
    pix0=pix[0]
    pix1=pix[1]
    pix2=pix[2]
    if a<=pix[0] and pix[0]<=b:
      pix0=256-1
    if a<=pix[1] and pix[1]<=b:
      pix1=256-1
    if a<=pix[2] and pix[2]<=b:
      pix2=256-1
```

```
        image.putpixel((i, j), (pix0,pix1,pix2))
    image.resize((300,200))
```

Applications

1. Digital Negative

- Raw format of images

2. Threshold

- Extraction object from complex background

3. Grey level slicing

- Fingerprints, X-Ray

✓ 2s completed at 11:52 AM