

In []:

In []:

```
In [5]: import os  
os.sys.path
```

```
Out[5]: ['C:\\Users\\navee',  
        'C:\\Users\\navee\\anaconda3\\python39.zip',  
        'C:\\Users\\navee\\anaconda3\\DLLs',  
        'C:\\Users\\navee\\anaconda3\\lib',  
        'C:\\Users\\navee\\anaconda3',  
        '',  
        'C:\\Users\\navee\\anaconda3\\lib\\site-packages',  
        'C:\\Users\\navee\\anaconda3\\lib\\site-packages\\win32',  
        'C:\\Users\\navee\\anaconda3\\lib\\site-packages\\win32\\lib',  
        'C:\\Users\\navee\\anaconda3\\lib\\site-packages\\Pythonwin']
```

```
In [6]: pip install opencv-python
```

```
Collecting opencv-python  
  Downloading opencv_python-4.6.0.66-cp36-abi3-win_amd64.whl (35.6 MB)  
Requirement already satisfied: numpy>=1.14.5 in c:\users\navee\anaconda3\lib\site-packages (from opencv-python) (1.21.5)  
Installing collected packages: opencv-python  
Successfully installed opencv-python-4.6.0.66  
Note: you may need to restart the kernel to use updated packages.
```

```
In [7]: from matplotlib import pyplot as plt  
import cv2  
from PIL import Image  
from IPython.display import display
```

```
In [8]: img="vardhaman.jpg"  
ri=cv2.imread(img)  
display(Image.fromarray(ri))
```



```
In [9]: img_gray=cv2.cvtColor(ri,cv2.COLOR_BGR2GRAY)  
display(Image.fromarray(img_gray))
```



```
In [12]: img_invert=cv2.bitwise_not(img_gray)
display(Image.fromarray(img_invert))
```



```
In [13]: img_smoothing=cv2.GaussianBlur(img_invert,(21,21),sigmaX=0,sigmaY=0)
display(Image.fromarray(img_smoothing))
```



```
In [15]: def vce(x,y):
return cv2.divide(x,255-y,scale=256)
final_img=vce(img_gray,img_smoothing)
display(Image.fromarray(final_img))
```



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