Image Character Extraction

```
from tkinter import *
from tkinter import filedialog
from PIL import ImageTk, Image
import cv2
import pytesseract
import matplotlib.pyplot as plt
pytesseract.pytesseract.tesseract_cmd = 'C:\\Program Files\\Tesseract-OCR\\tesseract.exe'
root = Tk()
root.title('Text Extraction from Images')
scrollbar = Scrollbar(root)
scrollbar.pack( side = RIGHT, fill = Y )
newline= Label(root)
uploaded_img=Label(root)
def imgextract(path):
 img = cv2.imread(path)
 Sample_img = cv2.resize(img,(400,350))
 img2char = pytesseract.image_to_string(img)
 imgH, imgW, _ = img.shape
 imgbox = pytesseract.image_to_boxes(img)
 for boxes in imgbox.splitlines():
 boxes = boxes.split(' ')
 x,y,w,h = int(boxes[1]),int(boxes[2]),int(boxes[3]),int(boxes[4])
 cv2.rectangle(img,(x,imgH-y),(w,imgH-h),(255,50,0),1)
 print("RESULT\n\n\n", img2char)
 #plt.imshow(img)
 #print("\n\n\n\n\nBounding Box\n\n",imgbox, "\n\n\n\nBounding Box Output")
 return img2char, img, imgbox



def show_extract_button(path):
 extractBtn= Button(root,text="Extract text",command=lambda:
imgextract(path),bg="#2f2f77",fg="white",pady=15,padx=15,font=('Times',15,'bold'
))
 extractBtn.pack()
def upload():
 try:
 path=filedialog.askopenfilename()
 image=Image.open(path)
 img=ImageTk.PhotoImage(image)
 uploaded_img.configure(image=img)
 uploaded_img.image=img
 show_extract_button(path)
 except:
 pass
uploadbtn = Button(root,text="Upload an
image",command=upload,bg="#2f2f77",fg="white",height=2,width=20,font=('Times
',15,'bold')).pack()
newline.configure(text='\n')
newline.pack()
uploaded_img.pack()
root.mainloop()
```

Video Character Extraction

```
import pytesseract
import cv2
import matplotlib.pyplot as plt
pytesseract.pytesseract.tesseract_cmd = r'C:\Program Files\Tesseract�OCR\tesseract.exe'
font_scale = 1.5
font = cv2.FONT_HERSHEY_PLAIN
cap = cv2.VideoCapture("test.mp4")

if not cap.isOpened():
 cap = cv2.VideoCapture(0)
if not cap.isOpened():
 raise IOError("Cannot open Video")



cntr = 0;
while True:
 ret,frame = cap.read()
 cntr =cntr+1;
 if((cntr%8)==0):

 imgH,imgW,_ = frame.shape

 x1,y1,w1,h1 = 0,0,imgH,imgW

 imgchar = pytesseract.image_to_string(frame)

 imgboxes = pytesseract.image_to_boxes(frame)
 for boxes in imgboxes.splitlines():
 boxes = boxes.split(' ')
 x,y,w,h = int(boxes[1]),int(boxes[2]),int(boxes[3]),int(boxes[4])
 cv2.rectangle(frame,(x,imgH-y),(w,imgH-h),(0,0,255),3)
 cv2.putText(frame, imgchar, (x1 + int(w1/50),y1
 int(h1/50)),cv2.FONT_HERSHEY_SIMPLEX, 0.7, (0,0,255), 1)



 font = cv2.FONT_HERSHEY_SIMPLEX

 cv2.imshow('Character Extraction form video - Batch 11', frame)

 if cv2.waitKey(2) == ord('e'):
```

```
 print(imgchar)
 if cv2.waitKey(1) == ord('q'):
 break
cap.release()
cv2.destroyAllWindows()
```

Visuals Character Extraction

```
import pytesseract
import cv2
import matplotlib.pyplot as plt
pytesseract.pytesseract.tesseract_cmd = r'C:\Program Files\Tesseract-OCR\tesseract.exe'
font_scale = 1.5
font = cv2.FONT_HERSHEY_PLAIN
cap = cv2.VideoCapture(1)
if not cap.isOpened():
 cap = cv2.VideoCapture(0)
if not cap.isOpened():
 raise IOError("Cannot open Camera")



cntr = 0;
while True:
 ret,frame = cap.read()
 if((cntr%2)==0):

 imgH,imgW,_ = frame.shape

 x1,y1,w1,h1 = 0,0,imgH,imgW

 imgchar = pytesseract.image_to_string(frame)
 imgboxes = pytesseract.image_to_boxes(frame)
 for boxes in imgboxes.splitlines():
 boxes = boxes.split(' ')
 x,y,w,h = int(boxes[1]),int(boxes[2]),int(boxes[3]),int(boxes[4])
 cv2.rectangle(frame,(x,imgH-y),(w,imgH-h),(0,0,255),1)

 cv2.putText(frame, imgchar, (x1 + int(w1/50),y1 + int(h1/50)),
cv2.FONT_HERSHEY_SIMPLEX, 0.7, (255,0,0), 2)

 font = cv2.FONT_HERSHEY_SIMPLEX




 cv2.imshow('Character Extraction form Visuals - Batch 7', frame)
 if cv2.waitKey(1) == ord('q'):
 cv2.destroyAllWindows()
 break

cap.release()
cv2.destroyAllWindows()
```