

OCR using GUI

INSTALLATION:

1. First of all make sure that you install the following libraries like OPENCV, numpy, tkinter, PIL. These following libraries are easy to install.
2. But for installation of pytesseract(library mainly used for ocr application) ,you have to download the tesseract library and then during the installation process you have to select the languages for which the above library tesseract should work for(if selected nothing then by default only English language is selected).Then finally go to the command prompt and write 'pip install tesseract' and tesseract is finally installed and you can start your coding.
3. In this application like for accessing photos in the directory of your computer you have to change the directory name as per your need in the code since different system have different locations where images are stored. For example ('Users/Desktop/' can be changed to 'E:\').

WORKING:

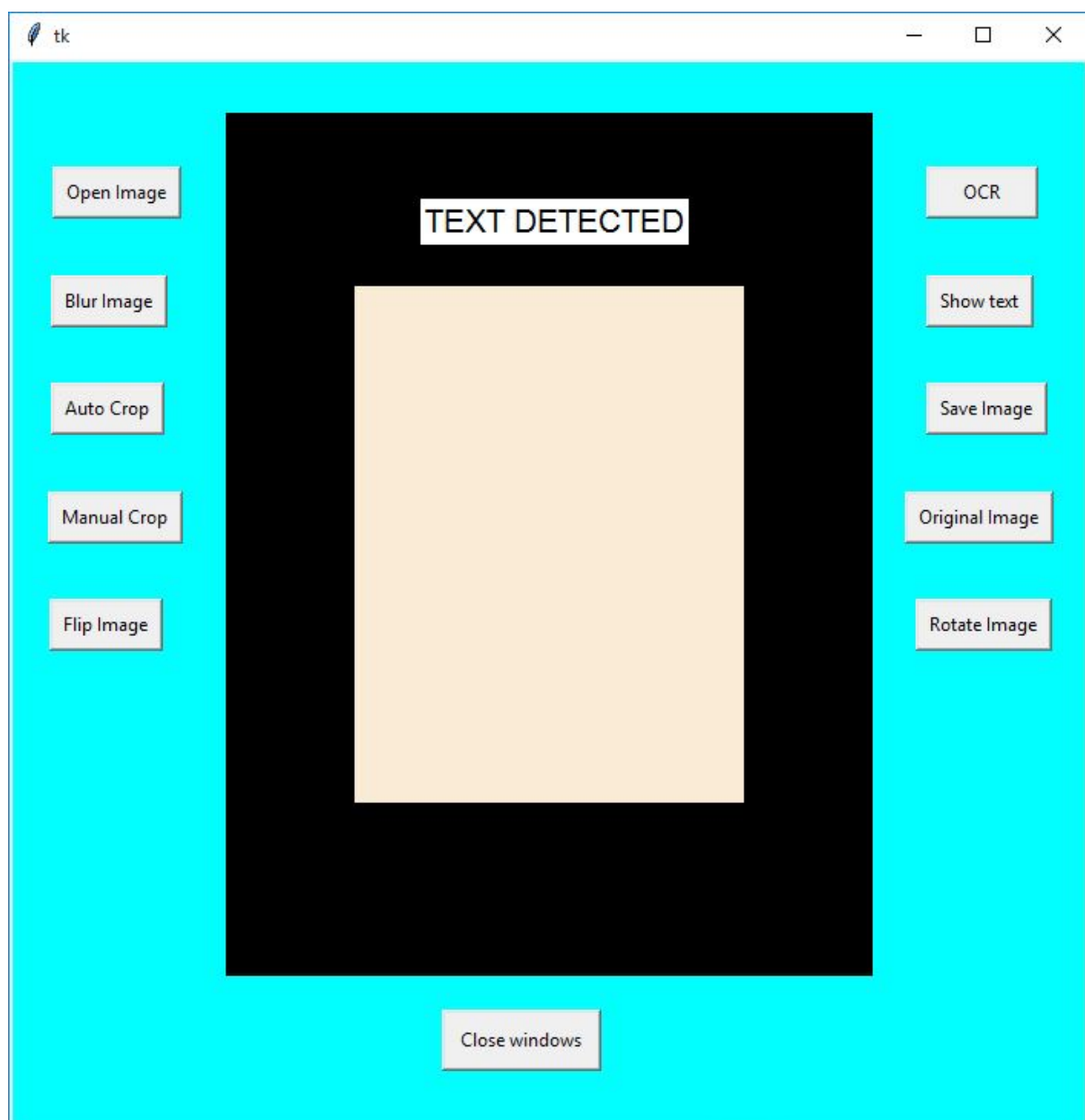
1. Open image – This button helps you to select an image from the directory mentioned in the code.
2. Blur image – This button helps you to perform Gaussian blur on the selected image.
3. Auto Crop – This button crops the image automatically with the concept of contours and filters.
4. Manual Crop – The user can select any 4 different points manually in order to get it cropped.
5. Rotate image – This button helps to rotate the selected image 90 degrees clockwise.
6. OCR – This button helps us to detect characters of a particular language(here English is selected) in the image and accordingly draw boxes over it.
7. Flip image- This button allows you to flip a image horizontally or vertically.
8. Show Text – This button displays the detected text in the text box.
9. Save Image – This button saves the image displayed.

10. Original Image – This button helps you get back the original image.

11. Destroy windows – This button closes all the open image windows.

SCREENSHOTS

Overview of App



Original Image

9.2. INTEGRAL CYCLE CONTROL

It is stated above that ac voltage controllers are phase-controlled devices. The principle of phase control is illustrated in Figs. 9.1 and 9.2. In these figures, the *phase* relationship between the start of load current and the supply voltage is *controlled* by varying the firing angle. As the controlled output is ac, these are called phase-controlled ac voltage controllers or ac voltage controllers.

In industry, there are several applications in which mechanical time constant or thermal time constant is of the order of several seconds. For example, mechanical time constant for many of the speed-control drives, or thermal time constant for most of the heating loads is usually quite high. For such applications, almost no variation in speed or temperature will be noticed if control is achieved by connecting the load to source for some on-cycles and then disconnecting the load for some off-cycles. This form of power control is called integral cycle control. So *integral cycle control* consists of switching on the supply to load for an integral number of cycles and then switching off the supply for a further number of integral cycles, Fig. 9.3.

The principle of integral cycle control can be explained by referring to Fig. 9.2 for a single-phase voltage controller with resistive load. Gate pulses i_{g1} , i_{g2} turn on the thyristors T1, T2 respectively at zero-voltage crossing of the supply voltage. The source energises the load for n ($= 3$) cycles. When gate pulses are withdrawn, load remains off for m ($= 2$) cycles. In this manner, process of turn-on and turn-off is repeated for the control of load power. By varying the number of n and m cycles, power delivered to load can be regulated as desired. The waveforms for source voltage v_s , gate pulses and output voltage v_o are shown in Fig. 9.3

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Detected Text



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Blurred Image

frame

— □ ×

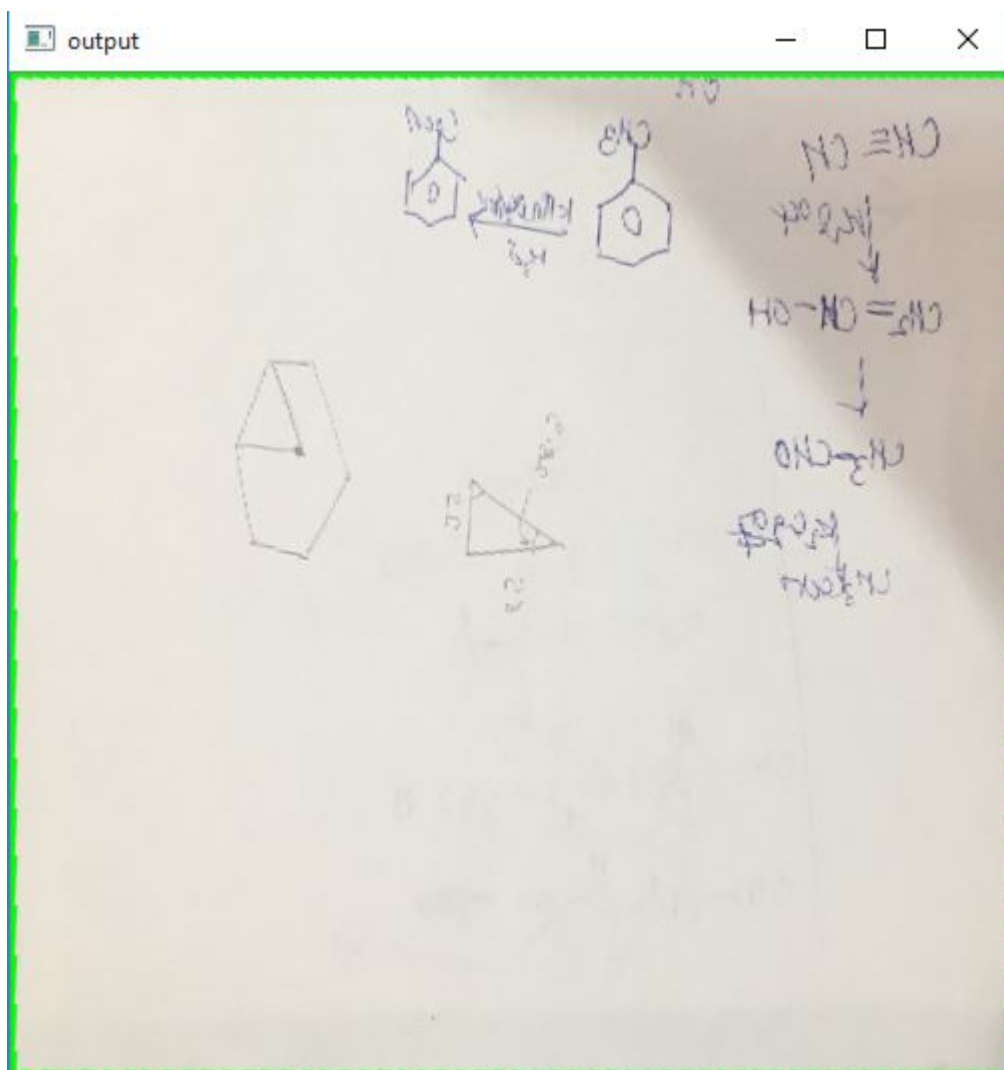
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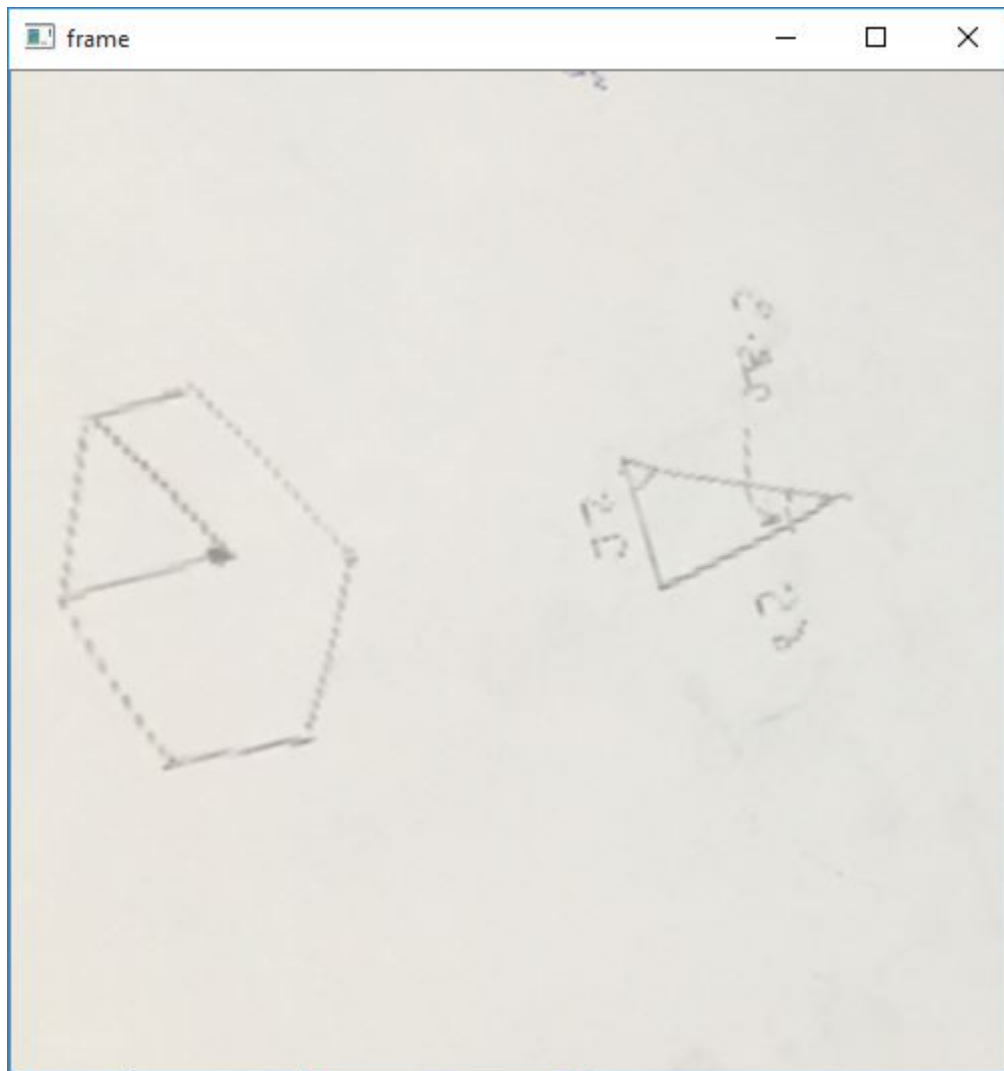
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Auto Crop Image



Manual Crop



Flipped Image

