First of all, I am sorry that I don't have time to polish the program because it still changes according to the feedback of user and the result of inter-operability test of web-api of computer center.

def ocr(mydraw): is the function to be adjusted after assembling.
1. Adjust the capture area.
Image is stored in /home/pi/images
Original setting like this
    x1=230
    y1=80
    x2=420
    y2=300
captured image

It is better to put the lcd at the center.
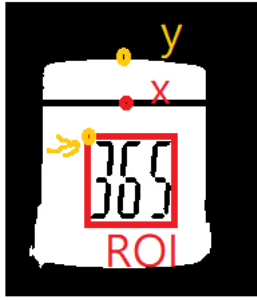New setting:
    x1=210
    y1=100
    x2=400
    y2=320

2. Adjust offset of ROI.

We need to determine the left-upper corner of the ROI. Find y value first by search from the top until a line with value 255 exists.

th3 is the binary image.

```
for i in range(th3.shape[0]):
    if (255 in th3[i,:]):
        y=i
        break;
```

x is determined by the line 15 pixel below y (because it is not a rectangle).

```
x = np.where(th3[y+15,:]==255)
x=(x[0][0]+x[0][len(x[0])-1])//2
```

Then, the left-upper corner of ROI is calculated by

```
x=x-28
y=y+62
```

if the location to be checked does not cover the segments well, we need to adjust the offset.

If we adjust y's offset.

```
x=x-28
y=y+60
```

We have a great result.

In my experiment, it works very well.