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Computer Vision Assignment 2

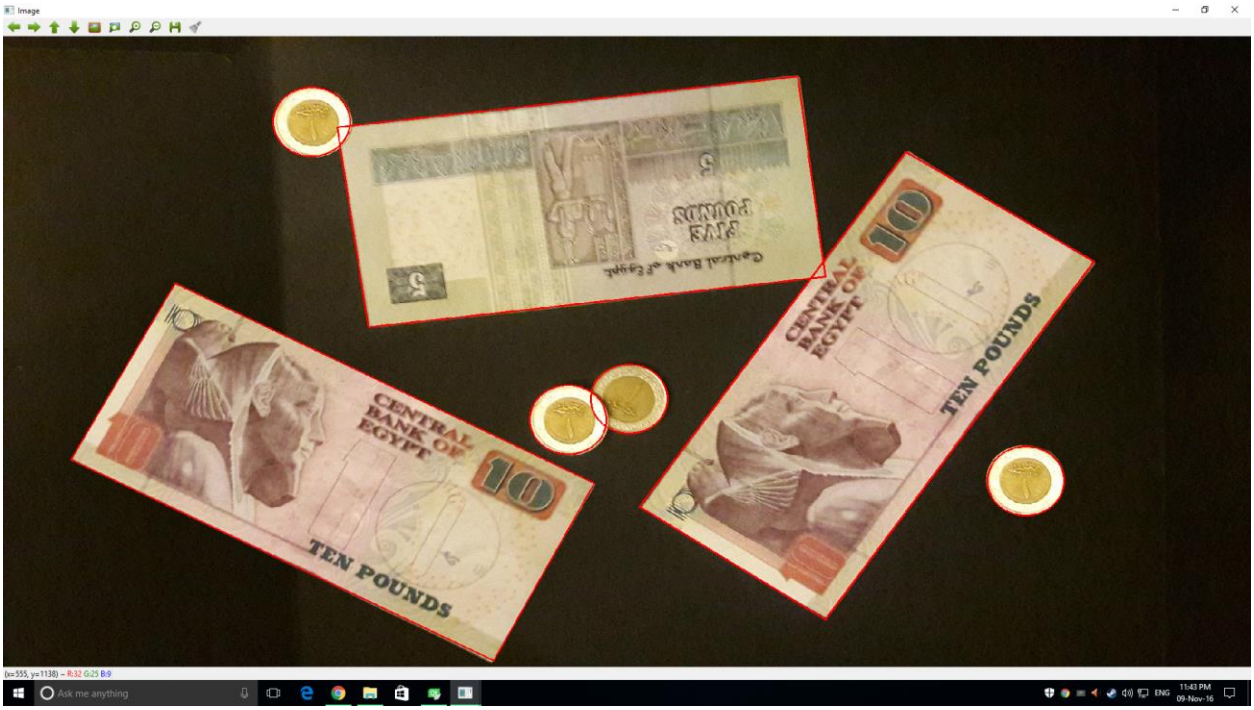
This is a Qt widgets application. It requires Qt and OpenCV library.

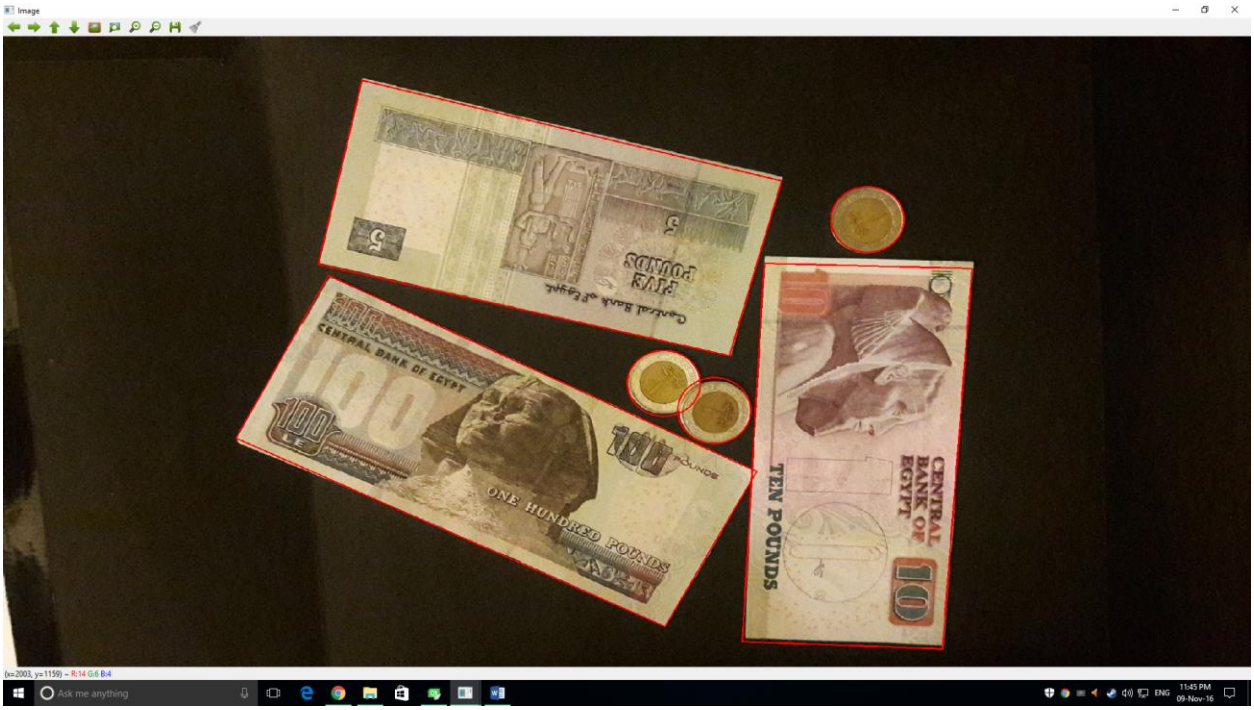
Note that the following algorithm is mentioned without the thresholds because different images require different thresholds. Attached with this submission are a group of images which work well with the hard-coded thresholds in the code.

Algorithm:

1. Blur the grayscale image
2. Use Canny Edge Detector
3. For each edge point from Canny, loop from [0 to 179] and add to the accumulator lineAccumulator[theta][ro]
4. Loop on lineAccumulator and for each point larger than lineThreshold, add the corresponding line the the vector allLines
5. Loop on the vector allLines and choose the most important lines
6. Draw the rectangles using these lines
7. For each edge point from Canny, add to circleAccumulator using the Midpoint Circle Algorithm https://en.wikipedia.org/wiki/Midpoint_circle_algorithm
8. Loop on circleAccumulator and for each point larger the circleThreshold, add the corresponding circle to the vector allCircles
9. Loop on the vector allCircles and choose the most important circles
10. Draw these circles

Snapshots:


CENTRAL BANK OF EGYPT
10
TEN POUNDS
FIVE POUNDS


CENTRAL BANK OF EGYPT
100
ONE HUNDRED POUNDS
CENTRAL BANK OF EGYPT
10
TEN POUNDS
FIVE POUNDS