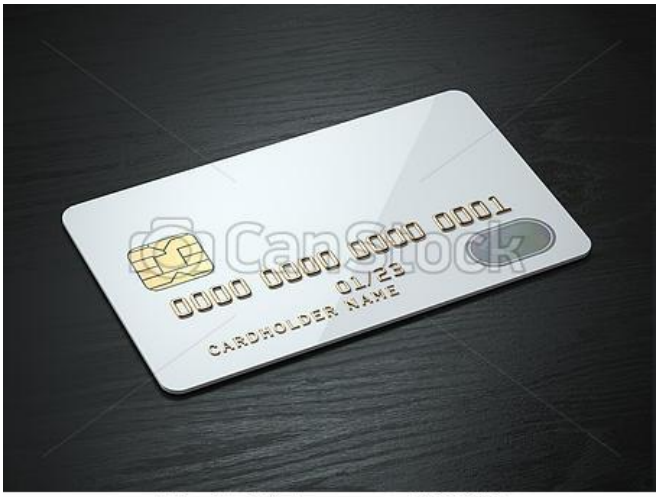
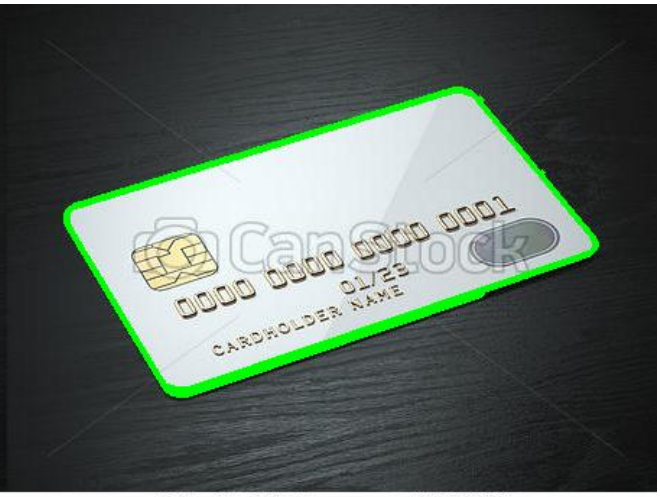
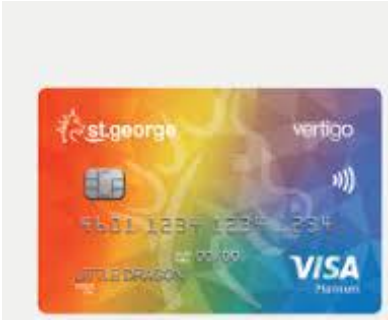
Project: Credit card detection

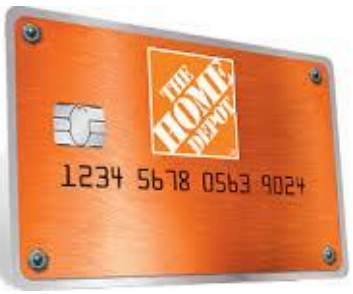
Method

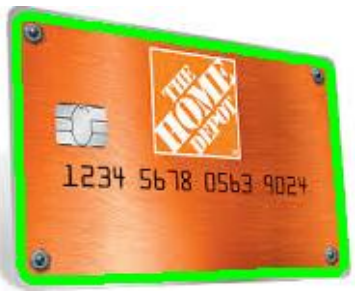
1. Edge detection for the input image is performed. Detected edges will be helpful in extracting structural objects in the image. Edge detection is done using cv2.canny function.
2. Contours are obtained using cv2.findContours function. Detected edge map is passed as input to the function.
3. The contours are sorted in decreasing order of area. This is done to avoid selection of minute details in the next step.
4. The contours are processed to check if the contour approximates a quadrilateral.
5. The contour approximating a polygon with 4 corners is selected and drawn on the input image to explicitly show the detected contour.

Results and Evaluation

Positive Examples

INPUT IMAGE	DETECTED CONTOUR
	
	


THE HOME DEPOT
1234 5678 0563 9024


THE HOME DEPOT
1234 5678 0563 9024

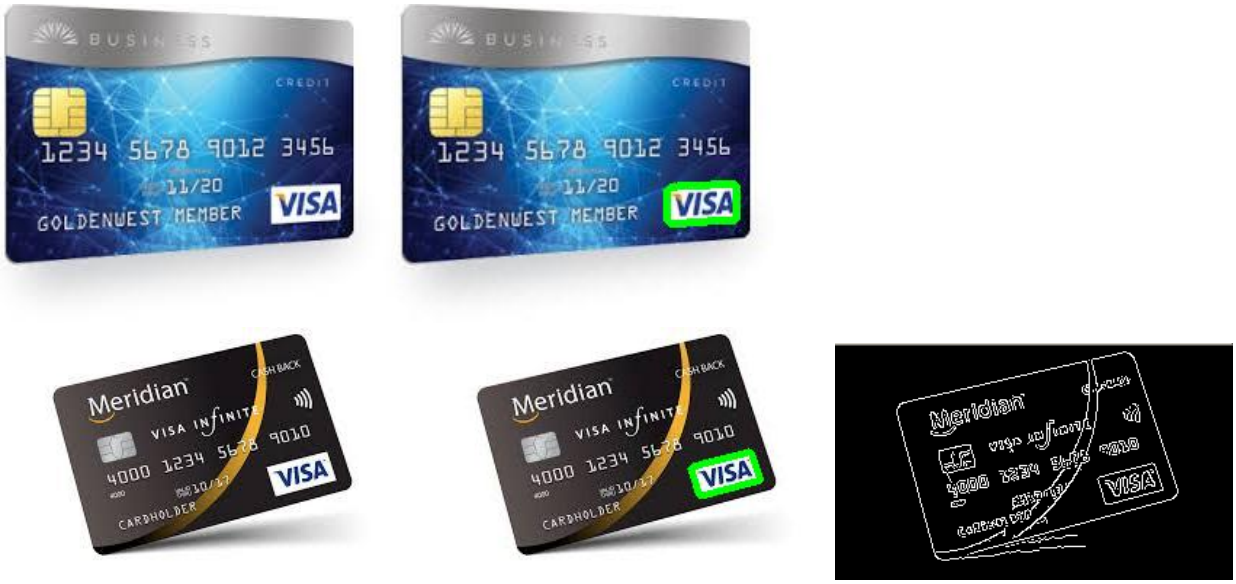

4564 7170 0000 0000
MR A H CITIZEN
VISA


4564 7170 0000 0000
MR A H CITIZEN
VISA


MasterCard
MasterCard

Failure cases

Wrong contour detected



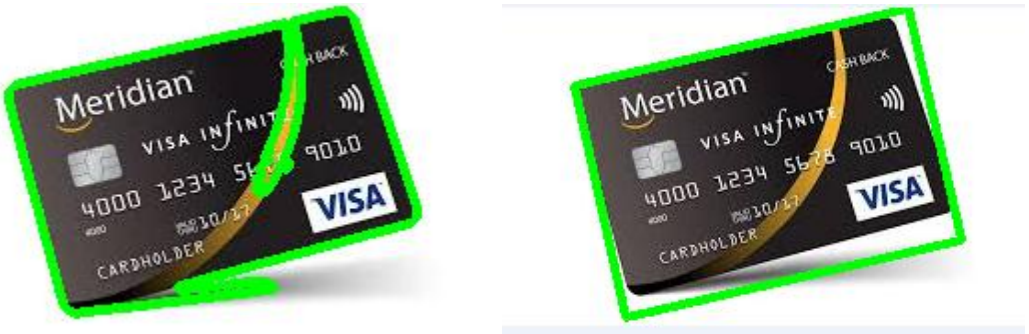
The pattern in card causes prediction of incomplete contour of the card and the quadrilateral check fails. This causes detection of smaller polygon.

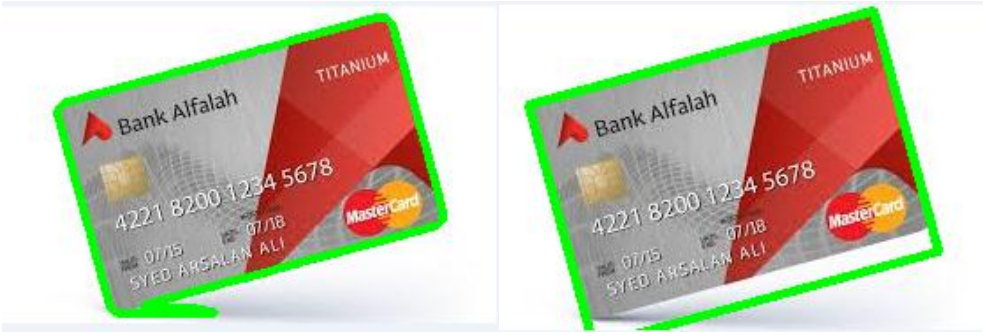
Update on failure cases

I evaluated for below design choices

1. Choosing contour of largest perimeter
2. Approximating bounding rectangle based on largest contour

Method 1 **Method 2**




Bank Alfalah
TITANIUM
4221 8200 1234 5678
07/15
07/18
SYED ARSALAN ALI
MasterCard
Bank Alfalah
TITANIUM
4221 8200 1234 5678
07/15
07/18
SYED ARSALAN ALI
MasterCard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11/20
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VISA
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