Matlab Code Depth sensor

```matlab
1  %processing the image using the depthsensor
2
3
4  %treshold values
5  min_tresh = 30;
6  max_tresh = 500;
7
8  % get image from depth sensor
9  depth = getsnapshot(depthVid);
10
11 %run the sobel operator
12 shapes = sobel_operator(depth);
13
14 %run the treshold filter
15 shapes = treshold(shapes, min_tresh, max_tresh);
16
17 %look at the result
18 image(depth);
19
20 function shapes = sobel_operator(img)
21
22      X = img;
23      Gx = [1 +2 +1; 0 0 0; -1 -2 -1]; Gy = Gx';
24      temp_x = conv2(X, Gx, 'same');
25      temp_y = conv2(X, Gy, 'same');
26      shapes = sqrt(temp_x.^2 + temp_y.^2);
27 end
28
29 function tresholded = treshold(img, min_tresh, max_tresh)
30
31      matrix_size = size(img);
32
33      MAX_ROW = matrix_size(1);
34
35      MAX_COLUMN = matrix_size(2);
36
37      for row = 1 : MAX_ROW
38          for col = 1: MAX_COLUMN
39              if (img(row, col) > min_tresh) && (img(row,
                    col)< max_tresh)
40                  img(row, col) = 1;
41              else
42                  img(row, col) = 0;
```

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43                end
44            end
45        end
46        tresholded = img;
47    end
```