

```

1 import cv2
2 import numpy as np # write numpy arrays as images
3
4
5 # Create a matrix
6 X = np.matrix('1 2; 3 4') # 2x2 matrix. semicolon separates rows
7 print("X=", X)
8
9 y = np.matrix('1;2'); print("y=", y) # 2x1 matrix
10
11
12 # Matrix can also be created from a 1D array by reshaping it
13 w = np.array([1,2,3,4,5,6]); print("w=", w)
14 W = w.reshape(3, 2); print("W=", W)
15
16 # Equivalently:
17 W = np.array([1,2,3,4,5,6]).reshape(3, 2); print("W=", W)
18
19 # color img stores as 3-d tensor [height, width, BGR]
20 color1 = np.zeros((30, 100, 3), dtype='uint8')
21 color1[:10, :, 0] = 255 # first 10 rows are set to blue
22 color1[10:20, :, 1] = 255
23 color1[20:30, :, 2] = 255
24
25 cv2.namedWindow('write_window', cv2.WINDOW_AUTOSIZE)
26 cv2.imshow('write_window', color1)
27 cv2.imwrite('RGB_eg.jpg', color1) # don't write image as jpg
28 cv2.imwrite('RGB_eg.png', color1)
29
30 # wait for key to exit
31
32 cv2.waitKey(0)
33 cv2.destroyAllWindows()

```