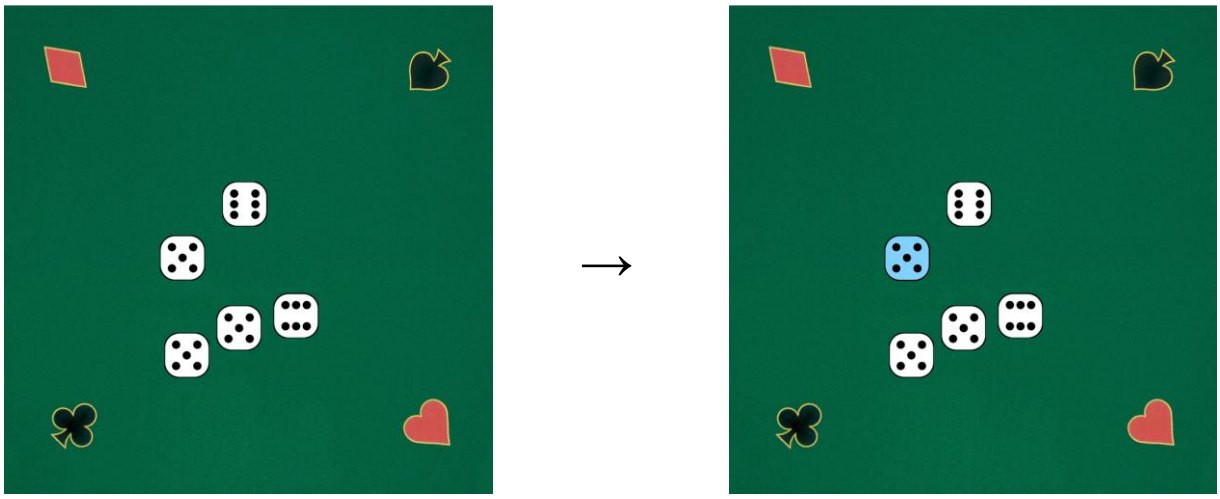
In-class Assignment

You will develop a program to recognize and locate dice on a game table. Start with the given code and develop your code in the same m file.You may use all code you have developed in this course and refer to any of the COM322 course notes and MATLAB documentation.

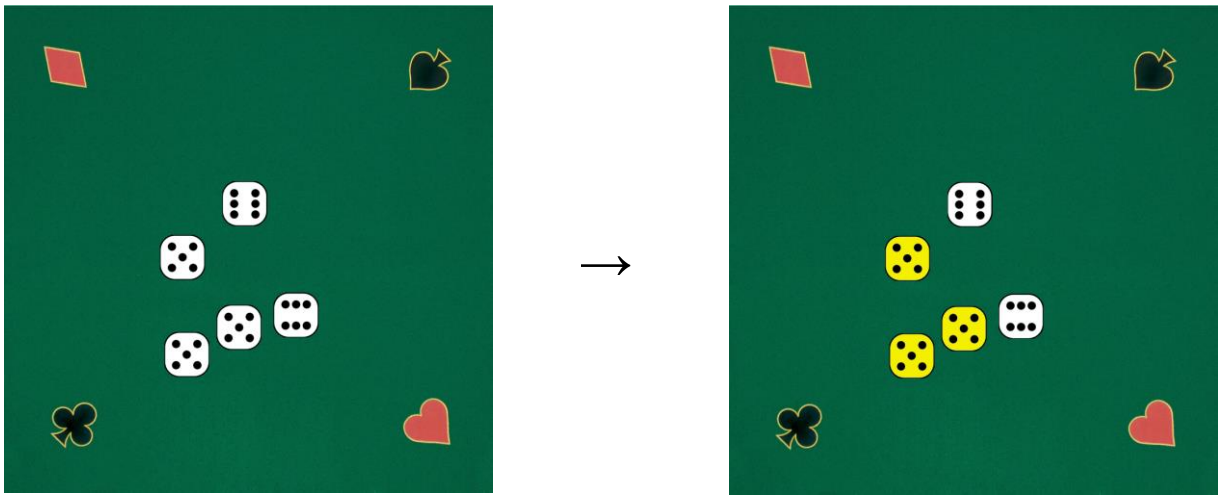
Make sure you unzip the start code and all images into the same folder before beginning to code. Display the results of the following tasks in the figures with the same numbers (e.g. the output of task 1 shown on the right will be displayed in MATLAB Figure 1). You do not need to show the source images given on the left.

At the end of class, leave your final code in a folder called **inclass** in your NAS folder.

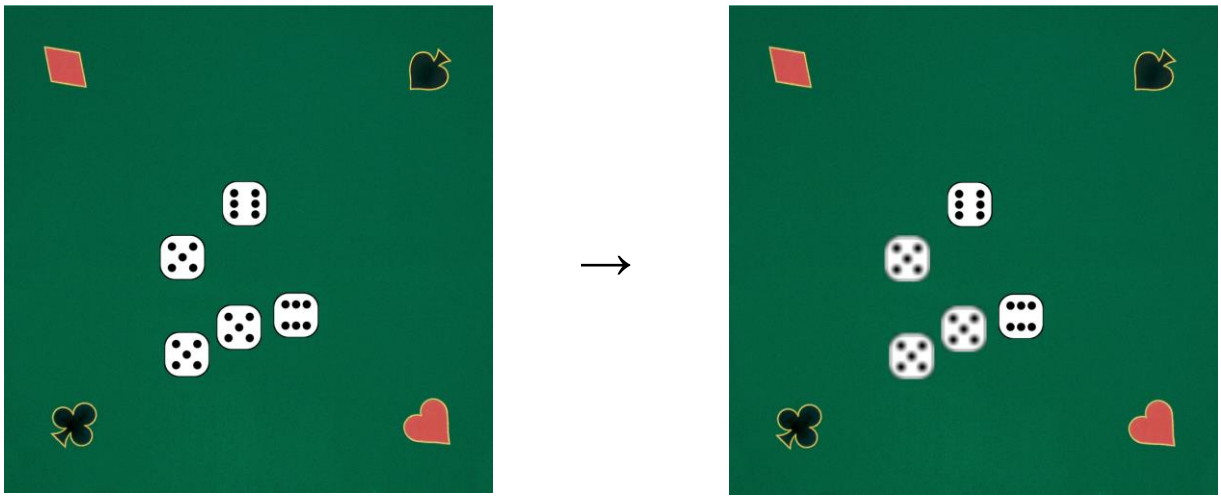
1) Cut out a template for the die that has a (face) value of five. Using this template find an instance of it and change its color to light blue (use image **table_color_fives.png**). Use your own template for parts 1 through 3 and do not yet use the given templates.



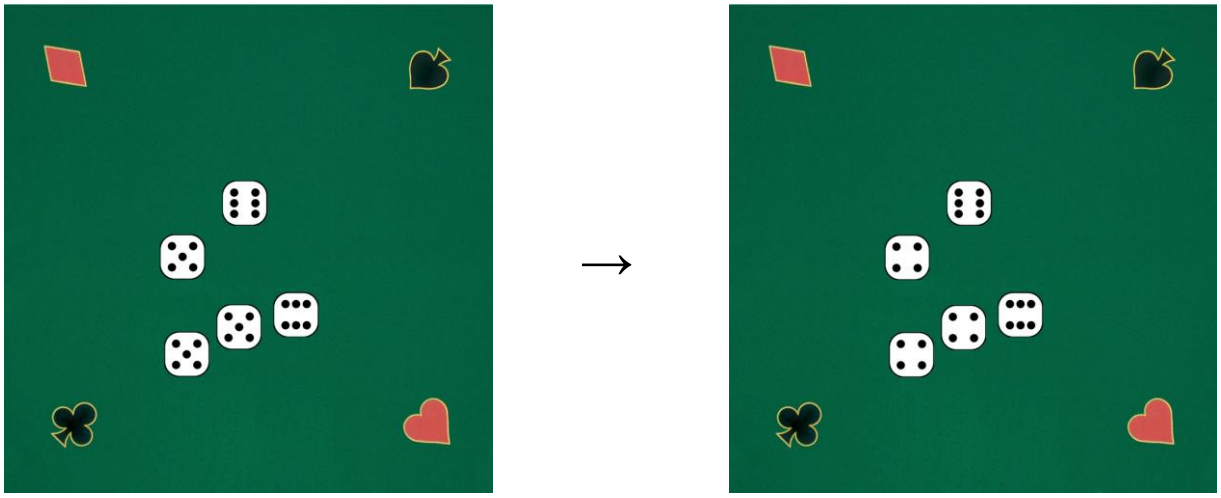
2) Repeat the above to change the color of all fives to yellow (**table_color_fives.png**).



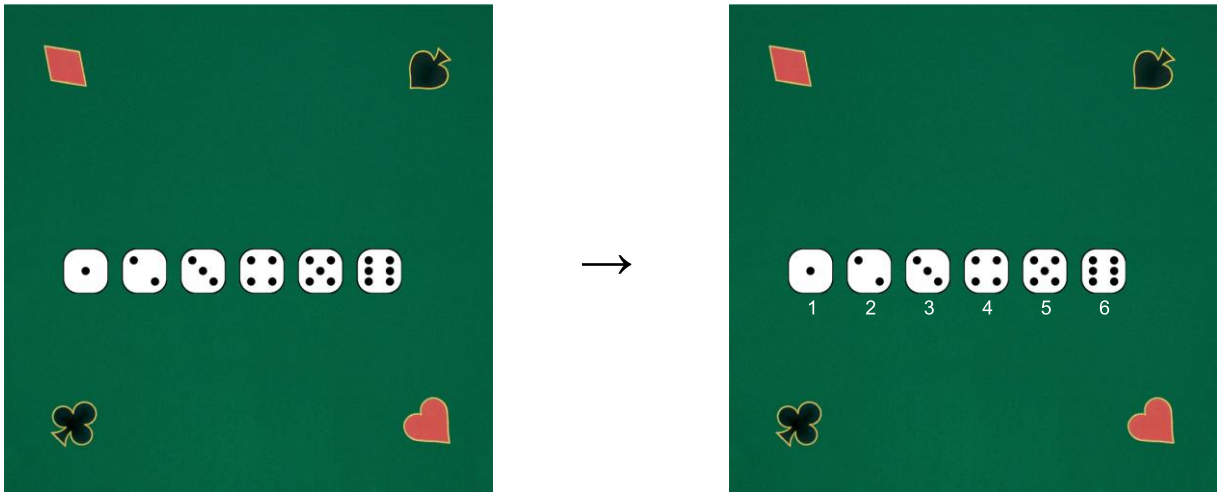
3) Again using the same template, blur all the fives in the figure (and nothing else; **table_color_fives.png**).



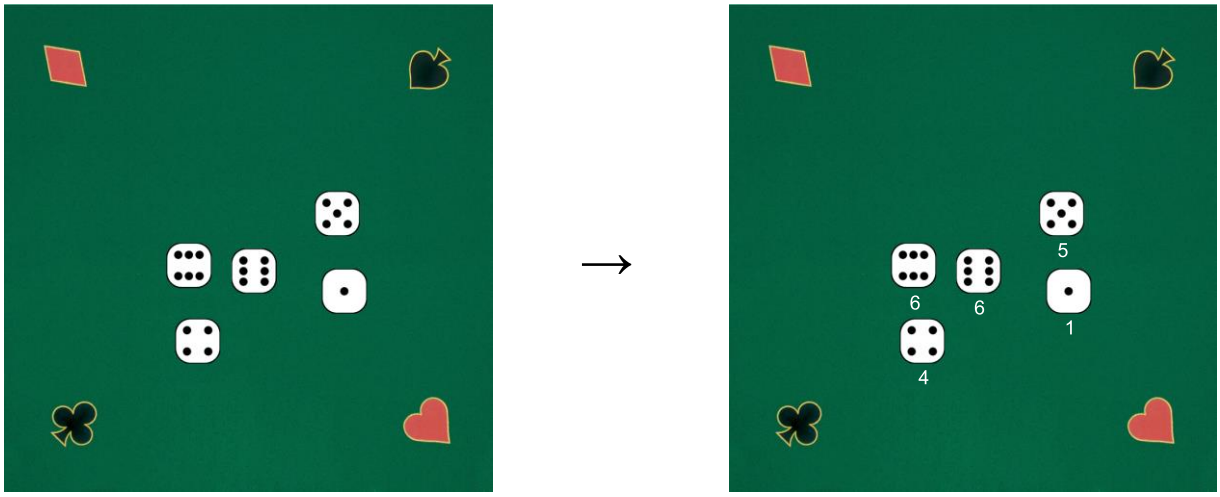
4) Replace all fives with fours (**table_color_fives.png**). You may use the function call **get_template** for this and remaining parts of this assignment. For example, get_template(3) will return the color template of the die with face value of three – all six templates (1 – 6) are available.



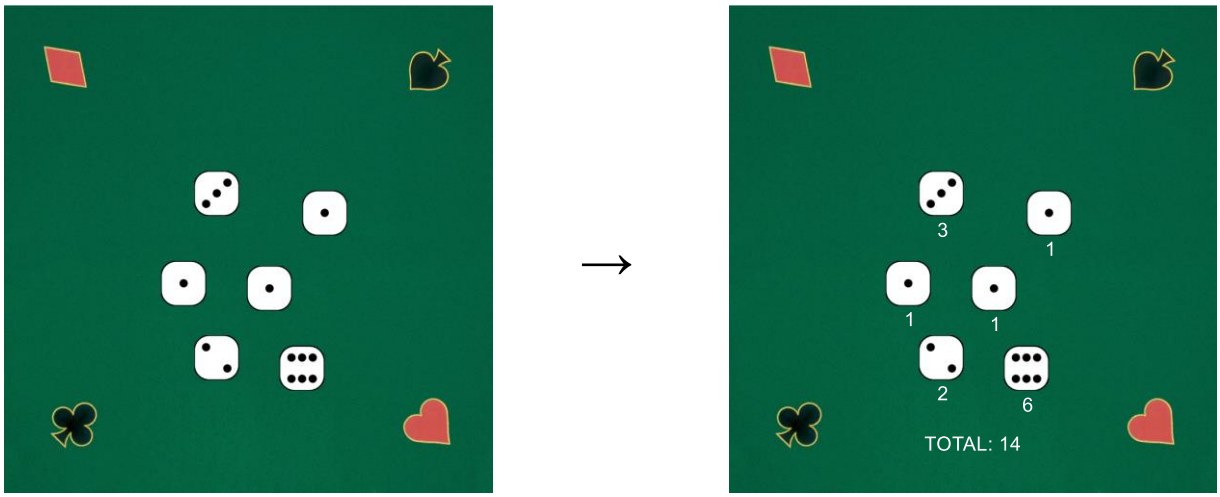
5) Find and label the face value of each die in the given image assuming there are no rotations with respect to the templates (**table_six_dice.png**).



6) Find and label the value of each die assuming only rotations with 90-degree increments (**table_rand_dice_3.png, table_rand_dice_5.png**, and **table_rand_dice_6.png**).



7) Add text that will report the sum of the face values of the dice (**table_rand_dice_3.png, table_rand_dice_5.png**, and **table_rand_dice_6.png**).



8) To check if your code is sensitive to noise, run it on the four noisy images and report its sensitivity to noise as comments in your program (**table_rand_dice_noisy_1.png**, **table_rand_dice_noisy_2.png**, **table_rand_dice_noisy_3.png**, **table_rand_dice_noisy_4.png**).