Image Processing - Classwork 1

Due date - 16 January 2018

1 Find the sum of all elements of matrix M.

$$M = \begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{bmatrix}$$

2 Loop through all the elements of matrix M.

1. **If the element is 1, make it 0.**
2. **If the element is 0, make it 1**
3. **Print the resulting matrix**

$$M = \begin{bmatrix} 1 & 0 & 1 & 0 \\ 0 & 1 & 0 & 1 \\ 1 & 0 & 1 & 0 \\ 0 & 1 & 0 & 1 \end{bmatrix}$$

3 Write a switch case with following cases:

1. **case 1 - calculate A*B**
2. **case 2 - calculate dot product of A and B**
3. **case 3 - calculate dot product of A and B, treating rows as vectors**

$$A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$$

$$B = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$$

4 **Read the image sample-gates.jpg. Get the number of columns and rows in the image. Use this information to get the megapixels of the camera which took this photo. (1 megapixel $= 10^6$ pixels)**

5 **Read the image flower.png. Display R,G,B channels of image. Save them in different files**