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Lab-1

```
img = imread('./images/lily.tif');

imshow(img)
title('RGB')
```

RGB


```
imshow(img(:, :, 1))
title('R')
```

R


```
imshow(img(:, :, 2))
title('G')
```

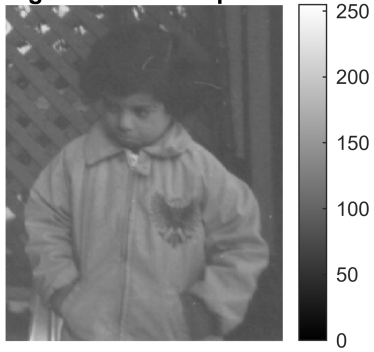**G**

```
imshow(img(:, :, 3))
title('B')
```
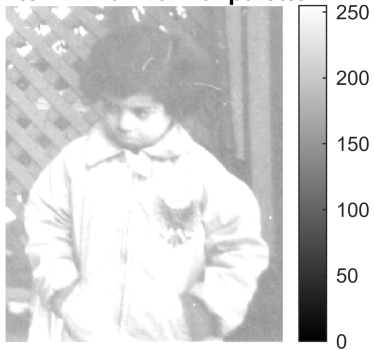

B

Lab-2

```
img_uint_8 = imread('./images/pout.tif');
img_double = double(img_uint_8);

palette = [0 255];

imshow(img_uint_8, palette)
title('Origin with normal palette')
colorbar
```
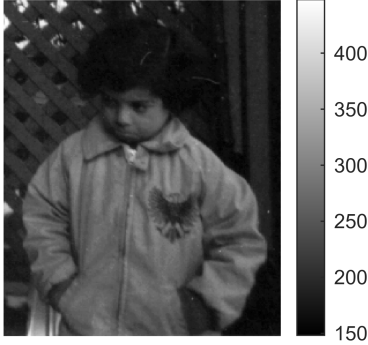
Origin with normal palette


```
imshow(img_uint_8 * 2, palette)
title('uint8 * 2 with normal palette')
colorbar
```

uint8 * 2 with normal palette


```
imshow(img_double * 2, [])
title('double * 2 with min max palette')
colorbar
```

double * 2 with min max palette

Lab-3

```matlab
img = imread('./images/wombats.tif');
imwrite(img, './output/wombats.bmp', 'bmp');
imwrite(img, './output/wombats.jpg', 'jpg');

dumphex('./output/wombats.bmp', 2);
```

```
ans = 2×66 char array
    '42 4D 36 04 01 00 00 00 00 00 36 04 00 00 28 00   BM6.......6...(.'
    '00 00 00 01 00 00 00 01 00 00 01 00 08 00 00 00   ................'
```

```matlab
% width = height = 00 01 00 00

dumphex('./output/wombats.jpg', 1);
```

```
ans =
'FF D8 FF E0 00 10 4A 46 49 46 00 01 01 00 00 01   ......JFIF......'
```

```matlab
% JFIF version = 10 4A 46 49 46 00
```

Lab-4

```matlab
img = imread('./images/FigP1127(bubbles).tif');
imwrite(img, './output/bubbles_origin.jpg');
imwrite(img, './output/bubbles50.jpg', 'Quality', 50);
imwrite(img, './output/bubbles25.jpg', 'Quality', 25);
imwrite(img, './output/bubbles15.jpg', 'Quality', 15);
imwrite(img, './output/bubbles5.jpg', 'Quality', 5);
imwrite(img, './output/bubbles0.jpg', 'Quality', 0);
```

```matlab
bubble_origin = imread('./output/bubbles_origin.jpg');
bubble50 = imread('./output/bubbles50.jpg');
bubble25 = imread('./output/bubbles25.jpg');
bubble15 = imread('./output/bubbles15.jpg');
bubble5 = imread('./output/bubbles5.jpg');
bubble0 = imread('./output/bubbles0.jpg');

subplot(2, 3, 1), imshow(bubble_origin);
title('origin')

K = imfinfo('./output/bubbles50.jpg');
ratio=(K.Width*K.Height*K.BitDepth/8)/K.FileSize;
subplot(2, 3, 2), imshow(bubble50)
title(sprintf('q=50, ratio=%0.1f', ratio))

K = imfinfo('./output/bubbles25.jpg');
ratio=(K.Width*K.Height*K.BitDepth/8)/K.FileSize;
subplot(2, 3, 3), imshow(bubble25);
title(sprintf('q=25, ratio=%0.1f', ratio))

K = imfinfo('./output/bubbles15.jpg');
ratio=(K.Width*K.Height*K.BitDepth/8)/K.FileSize;
subplot(2, 3, 4), imshow(bubble15);
title(sprintf('q=15, ratio=%0.1f', ratio))

K = imfinfo('./output/bubbles5.jpg');
ratio=(K.Width*K.Height*K.BitDepth/8)/K.FileSize;
subplot(2, 3, 5), imshow(bubble5);
title(sprintf('q=5, ratio=%0.1f', ratio))


K = imfinfo('./output/bubbles0.jpg');
ratio=(K.Width*K.Height*K.BitDepth/8)/K.FileSize;
subplot(2, 3, 6), imshow(bubble0);
title(sprintf('q=0, ratio=%0.1f', ratio))
```
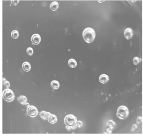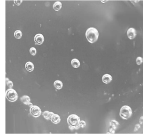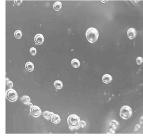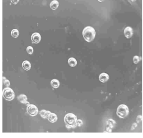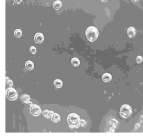
origin | q=50, ratio=22.3 | q=25, ratio=35.2

q=15, ratio=43.4 | q=5, ratio=60.9 | q=0, ratio=70.7