1st tutorial in IVP

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```
% input image
i = imread('https://i.stack.imgur.com/Ips0H.jpg');
imshow(i);
```

To grayscale the image.

```
g = rgb2gray(i); imshow(g);
```

```
max(g, [], 'all')
```

```
ans = uint8

    235
```

```
size(g)
```

```
ans = 1×2
   512   512
```

Rotate the image by 45° clockwise.

```
r = imrotate(g,-45); imshow(r);
```

```
% Shrink Image By Factor of Two Using Default
% Interpolation Method
re = imresize( g , .5 ); imshow(re);
```

```
max(re, [], 'all')
```

```
ans = uint8

    232
```

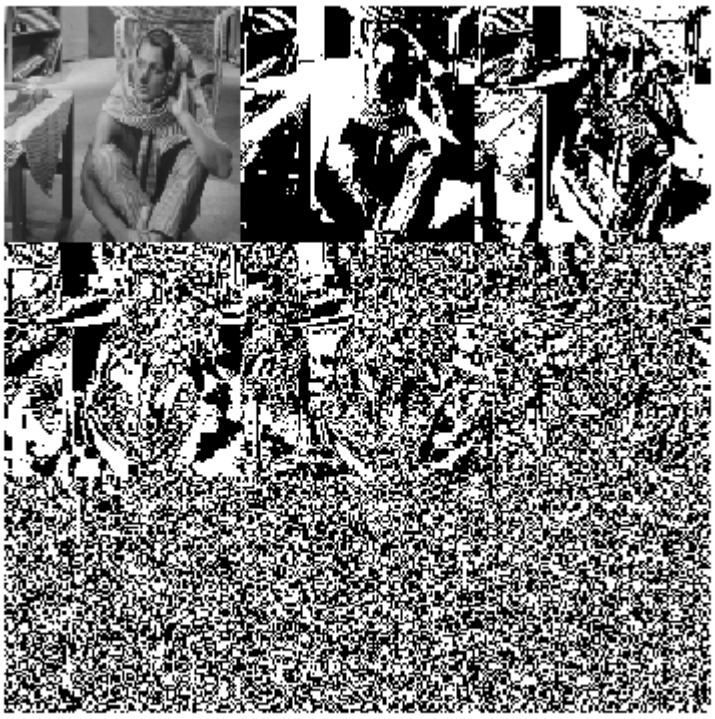
```
size(re)
```

```
ans = 1×2
   256   256
```

Bit-plane slicing.

```
c = cell(1,9); c{1} = g;
for r = 7:-1:0
    c{9-r} = bitand(g, 2^r)&1;
end
```

```
montage(c); % MSB to LSB
```



Bit-wise AND of matrix elements with 2^r to extract r^{th} bit.

& with 1 to convert image to binary.