



<b>COURSE NAME</b>	DIGITAL IMAGE PROCESSING
<b>COURSE CODE</b>	DBP 30203
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<b>TITLE</b>	<b>LAB SESSION 1: IMAGE PROCESSING TOOLBOX AND INTRODUCTION TO IMAGE ACQUISITION</b>
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## LAB SESSION 1 - IMAGE PROCESSING TOOLBOX AND INTRODUCTION TO IMAGE ACQUISITION

### LABWORK 1.1 - Binary image

Command Window

```
>> RGB_image = imread("japanese-cherry.jpg");  
>> BW_image = im2bw(RGB_image);  
>> figure, imshow(BW_image);  
>>
```



ORIGINAL IMAGE



OUTPUT BINARY IMAGE

### LABWORK 1.2 – Grayscale image

Command Window

```
>> RGB_image = imread("japanese-cherry.jpg");  
>> gray_image = rgb2gray(RGB_image);  
>> imshow(gray_image);  
>> |
```



ORIGINAL IMAGE



OUTPUT GRAYSCALE IMAGE

## LABWORK 1.3 – Indexed image

Command Window

```
>> RGB = imread("japanese-cherry.jpg");  
>> [OUTPUT1, map] = rgb2ind(RGB,8);  
>> [OUTPUT2, map] = rgb2ind(RGB,16);  
>> [OUTPUT3, map] = rgb2ind(RGB,24);  
>> imshow(OUTPUT1, map);  
>> imshow(OUTPUT2, map);  
>> imshow(OUTPUT3, map);  
>>
```



ORIGINAL IMAGE



INDEXED IMAGE WITH 8 COLORS



INDEXED IMAGE WITH 16 COLORS



INDEXED IMAGE WITH 24 COLORS

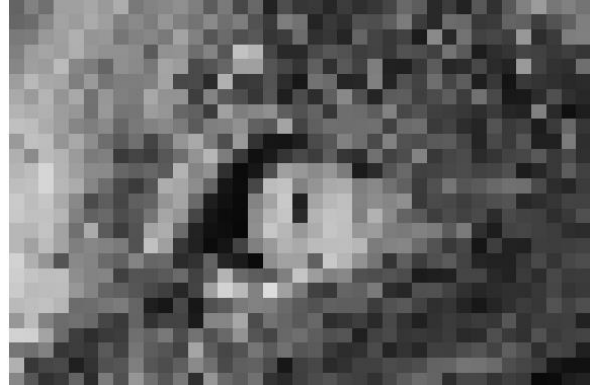
## **LABWORK 1.4 – Undersampled grayscale image**

Command Window

```
>> I = imread("Cat.jpg");  
>> s = 24;  
>> [row,col,dim] = size(I);  
>> if (dim == 1)  
undersampled_I = I([1:s:row],[1:s:col]);  
>> else  
>> undersampled_I = I([1:s:row],[1:s:col],[1:1:dim]);  
end  
>> imshow(undersampled_I);  
>>
```



ORIGINAL IMAGE



UNDERSAMPLED GRAYSCALE IMAGE  
WITH UNDERSAMPLING FACTOR OF 24