

## Lab 2: Image Reading, Displaying, Writing, and Extracting Information

### Experiment No.1 Reading an Image

To import an image from any supported graphics image file format, in any of the supported bit depths, use the `imread` function.

Syntax

```
A = imread("filename.fmt")
```

Description

`A = imread("filename.fmt")` reads a greyscale or color image from the file specified by the string `filename`, where the string `fmt` specifies the format of the file. If the file is not in the current directory or in a directory in the MATLAB path, specify the full pathname of the location on your system.

### Experiment No.2 Display an Image

To display an image, use the `imshow` function.

Syntax

```
imshow(A)
```

Description

`imshow(A)` displays the image stored in array `A`.

### Experiment No.3 Writing Image Data

Imwrite

Writes the indexed image in `A` and its associated colormap map to the file specified by `filename`.

Syntax

```
imwrite(A, map, "filename.fmt")
```

Example:

```
a=imread("pout.tif");
```

```
imwrite(a, gray(256), "b.bmp");
```

```
imshow("b.bmp") % imshow is used to display image
```

#### **Experiment No.4 How to get no. of rows and columns of image**

Function size gives the rows and columns dimension of image

```
[r,c]=size(a)
```

```
r =
```

```
291
```

```
c =
```

```
240
```

#### **Experiment No.5 Accessing the Pixel data**

There is a one-to-one correspondence between pixel coordinates and the coordinates MATLAB uses for matrix subscripting. This correspondence makes the relationship between an image's data matrix and the way the image is displayed easy to understand. For example, the data for the pixel in the fifth row, second column is stored in the matrix element (5,2). You use normal MATLAB matrix subscripting to access values of individual pixels. For example, the MATLAB code

```
A(2,15)
```

returns the value of the pixel at row 2, column 15 of the image A.