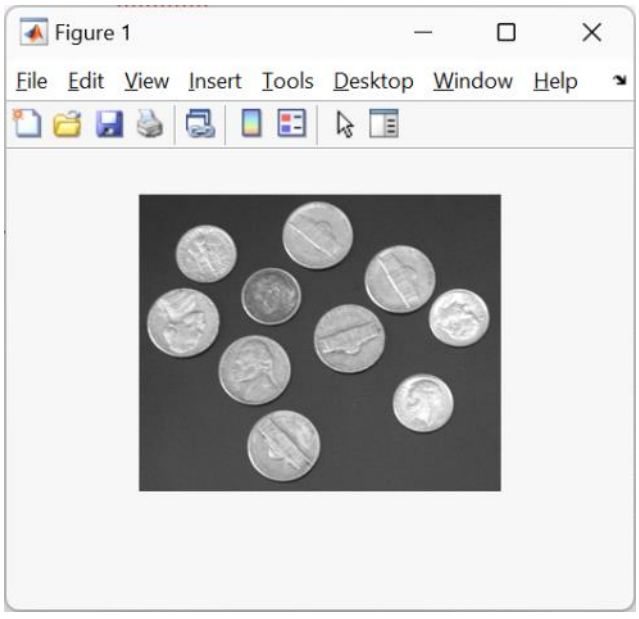
Lecture 1

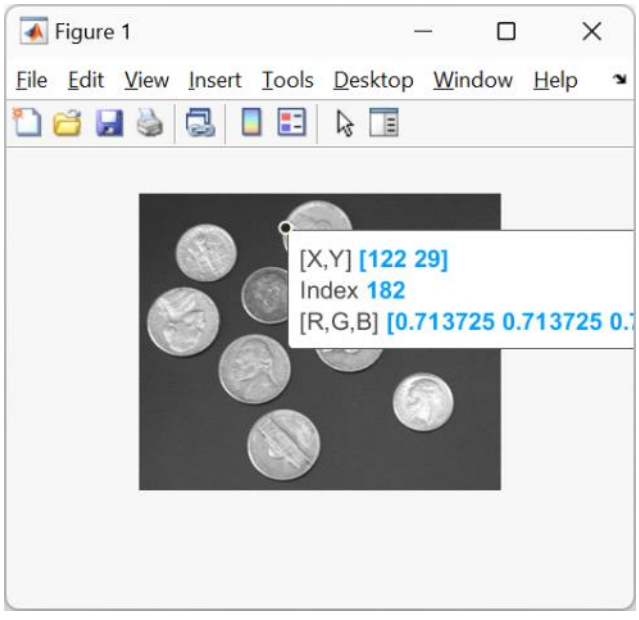
http://www.ece.uah.edu/~dwpan/course/ee604/

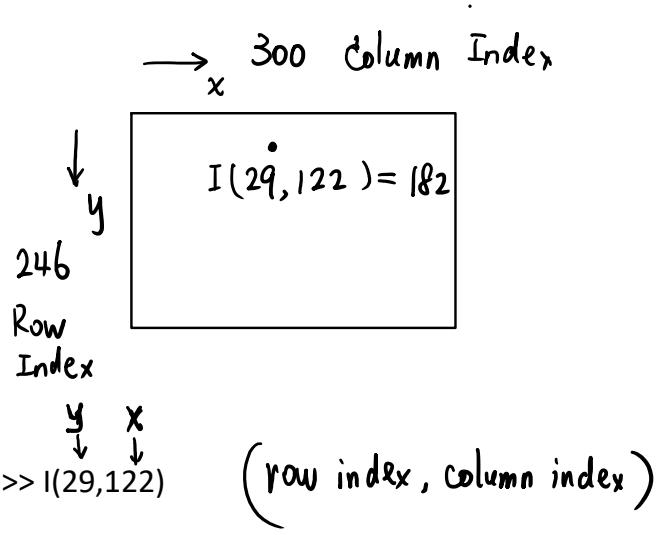


Introduction: Read and Display Digital Images in Matlab

Grey-level images:

```
>> I = imread('coins.png');
>> whos I
  Name        Size              Bytes  Class    Attributes

  I           246x300           73800  uint8

>> imshow(I)
```






```
>> I(29,122)
```

(row index, column index)

```
ans =

  uint8

  182
```

Incorrect

```
>> I(122,29)

ans =

  uint8

  186
```

Pixel value: uint8 (byte, 8 bits)

Range of pixel values: $(0000\ 0000)_2 = (0)_{10}$: darkest pixel

$\vdots$

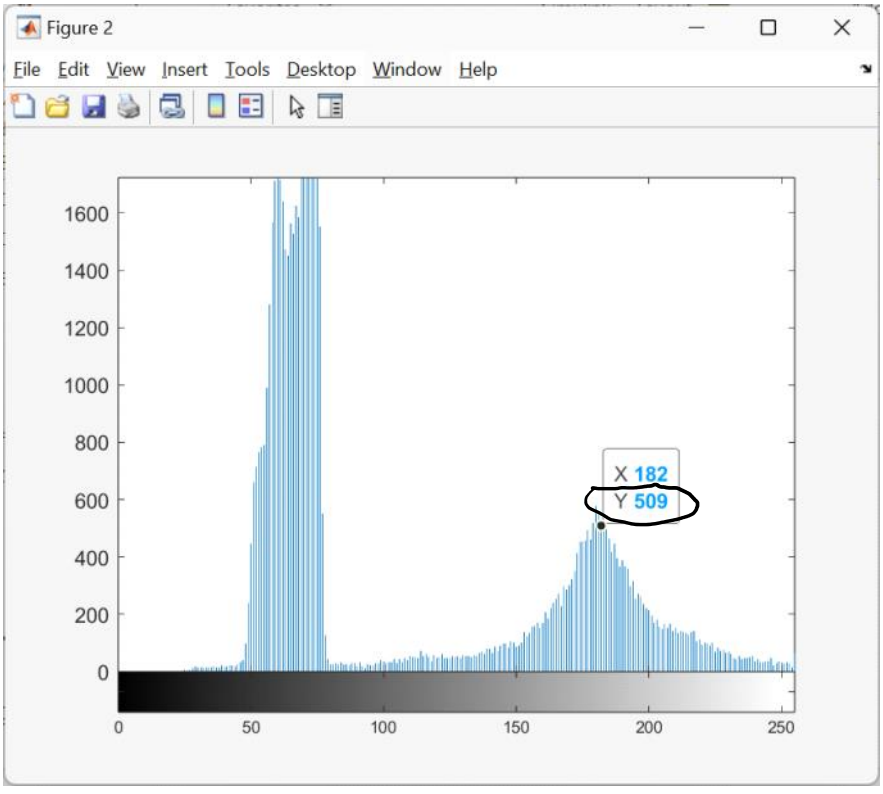
$(1111\ 1111)_2 = (255)_{10}$: brightest pixel

$2^8 - 1 = 256 - 1$

Histogram

```
>> X = find(I1d == 182);
>> length(X)

ans =

   509
```

```
>> length(X)/73800

ans =

    0.0069
```



>> figure; imhist(I)