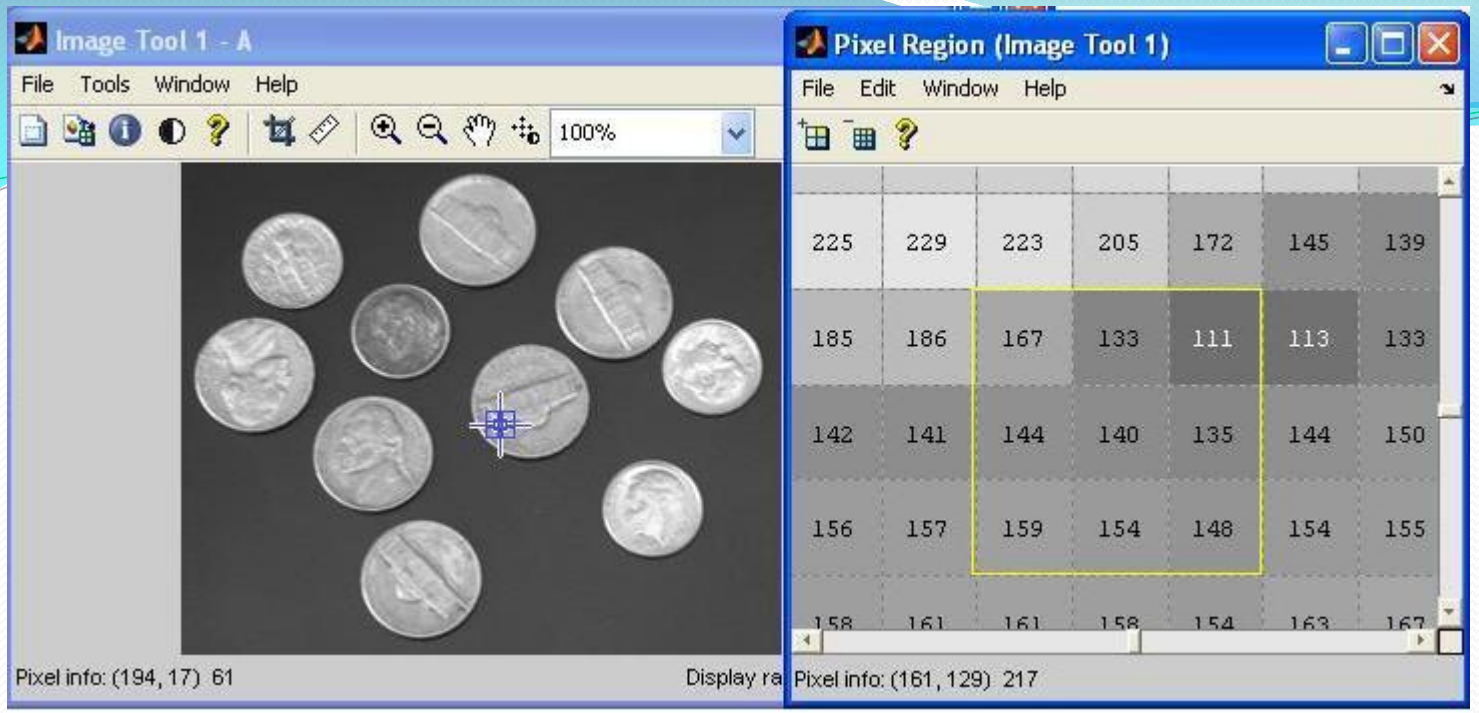
BIT PLANE SLICING

Bit-Plane Slicing

- Digitally, an image is represented in terms of pixels.
- These pixels can be expressed further in terms of bits.
- Consider the image ‘coins.png’ and the pixel representation of the image.



Consider the pixels that are bounded within the yellow line.
The binary formats for those values are (8-bit representation)

10100111	10000101	01101111
10010000	10001100	10000111
10011111	10011010	10010100

- The binary format for the pixel value 167 is 10100111
- Similarly, for 144 it is 10010000
- This 8-bit image is composed of eight 1-bit planes.
- Plane 1 contains the lowest order bit of all the pixels in the image.

10100111	10000101	01101111
10010000	10001100	10000111
10011111	10011010	10010100

- And plane 8 contains the highest order bit of all the pixels in the image

10100111	10000101	01101111
10010000	10001100	10000111
10011111	10011010	10010100

A=[167 133 111
144 140 135
159 154 148]

B=bitget(A,1); %Lowest order bit of all pixels

'bitget' is a MATLAB function used to fetch a bit from the specified position from all the pixels.

B=[1 1 1
0 0 1
1 0 0]

B=bitget(A,8);%Highest order bit of all pixels

B=[1 1 0
1 1 1
1 1 1]