CSE3018

LAB 1

30 NOVEMBER 2017 / 2:00 PM / ROOM 404

Abhishek Singh - 15BCE1009

QUESTION 1) **Read a Grayscale image and show its dimension.**

```
% Load a GrayScale image
>> Loadimage = 'E:\pendrive\testimage.jpg';
>> Image = imread(Loadimage,'jpg');
>> figure(1),imshow(Image);
% Size of GrayScale image
>> sizeGray = size(Image)
```

SCREENSHOT:

```
>> sizeGray = size(ConvertedImage)

sizeGray =

   300   300
```

QUESTION 2) **Read a RGB Color image and show its dimension.**

```
% Load a RGB image
>> Loadimage = 'E:\pendrive\Lenna.png';
>> Image = imread(Loadimage,'png');
>> figure(2),imshow(Image);
% Size of RBG image
>> sizeRBG = size(Image)
```

SCREENSHOT:

```
>> sizeRGB = size(Loadimage)

sizeRGB =

     1    16
```

QUESTION 3) **Perform RGB Color plane separation.**

```
% Splitting into RP,GP and BP
>> RP = Image(:,:,1);
>> GP = Image(:,:,2);
>> BP = Image(:,:,3);


>> figure(1),imshow(RP);
```

```
>> figure(2),imshow(GP);
>> figure(3),imshow(BP);
```

SCREENSHOT:

QUESTION 4) **Show all the images in a single Figure Window, using Subplot command.**

```
>> figure;
%  Load a GrayScale image
>> Loadimage1 = 'E:\testimage.jpg';
>> Image1 = imread(Loadimage1,'jpg')
>> subplot(3,2,1),imshow(Image1);title('GrayScale Image');

%  Load a RGB image
>> Loadimage2 = 'E:\Lenna.png';
>> Image2 = imread(Loadimage2,'png');
>> subplot(3,2,2),imshow(Image2);title('RGB Image');

% Splitting into RP,GP and BP
>> RP = Image2(:,:,1);
>> GP = Image2(:,:,2);
>> BP = Image2(:,:,3);

% Plot the Channels
>> subplot(3,2,3),imshow(RP);title('Red Channel');
>> subplot(3,2,4),imshow(GP);title('Green Channel');
>> subplot(3,2,5),imshow(BP);title('Blue Channel');
```

SCREENSHOT:

GrayScale Image

RGB Image

Red Channel

Green Channel

Blue Channel

QUESTION 5) **Convert an image into binary image.**

```
%  Converting Image to Binary
>> figure(5)
>> BW = imbinarize(Image)
>> imshow(BW)
```

SCREENSHOT:

QUESTION 6) **Perform Bit Plane Separation.**

```
% Subplotting Bit Place Separation
>> figure;
>> B=bitget(ConvertedImage,1); subplot(4,2,1), imshow(logical(B));title('Bit plane 1');
>> B=bitget(ConvertedImage,2); subplot(4,2,2), imshow(logical(B));title('Bit plane 2');
>> B=bitget(ConvertedImage,3); subplot(4,2,3), imshow(logical(B));title('Bit plane 3');
>> B=bitget(ConvertedImage,4); subplot(4,2,4), imshow(logical(B));title('Bit plane 4');
>> B=bitget(ConvertedImage,5); subplot(4,2,5), imshow(logical(B));title('Bit plane 5');
>> B=bitget(ConvertedImage,6); subplot(4,2,6), imshow(logical(B));title('Bit plane 6');
>> B=bitget(ConvertedImage,7); subplot(4,2,7), imshow(logical(B));title('Bit plane 7');
>> B=bitget(ConvertedImage,8); subplot(4,2,8), imshow(logical(B));title('Bit plane 8');
```

SCREENSHOT:

Bit plane 1

Bit plane 2

Bit plane 3

Bit plane 4

Bit plane 5

Bit plane 6

Bit plane 7

Bit plane 8