PRACTICAL No. 10

AIM:- Binary Image Processing and Colour Image processing.

Install Image Processing and Signal Processing packages and restart scilab.

Run this command on console: atomsRemove('scicv')

Restart scilab

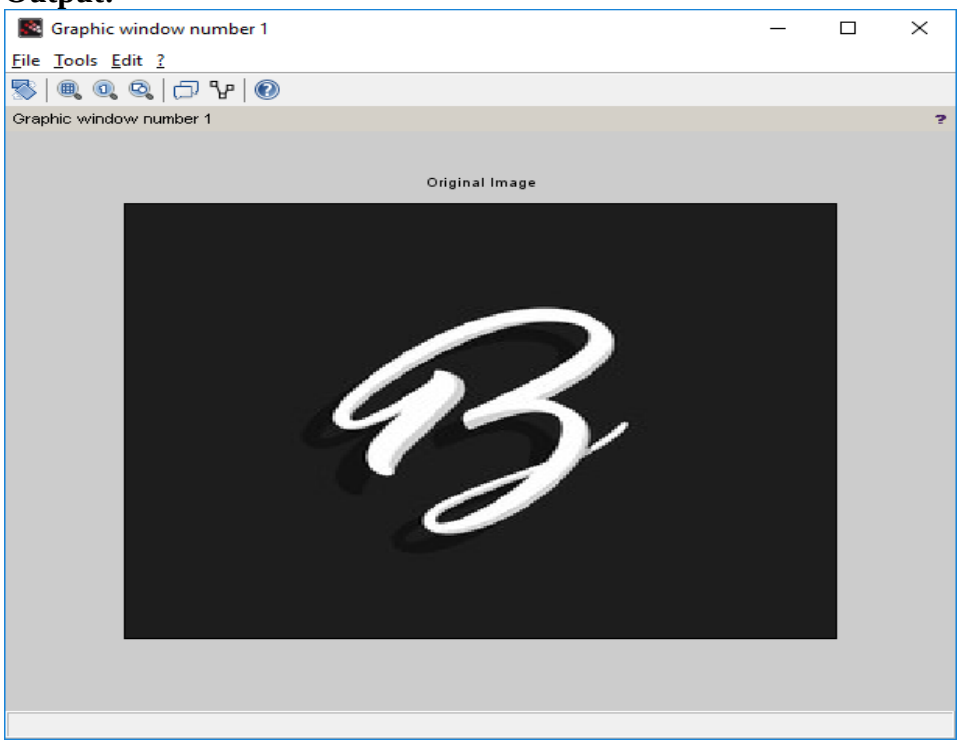
And run code

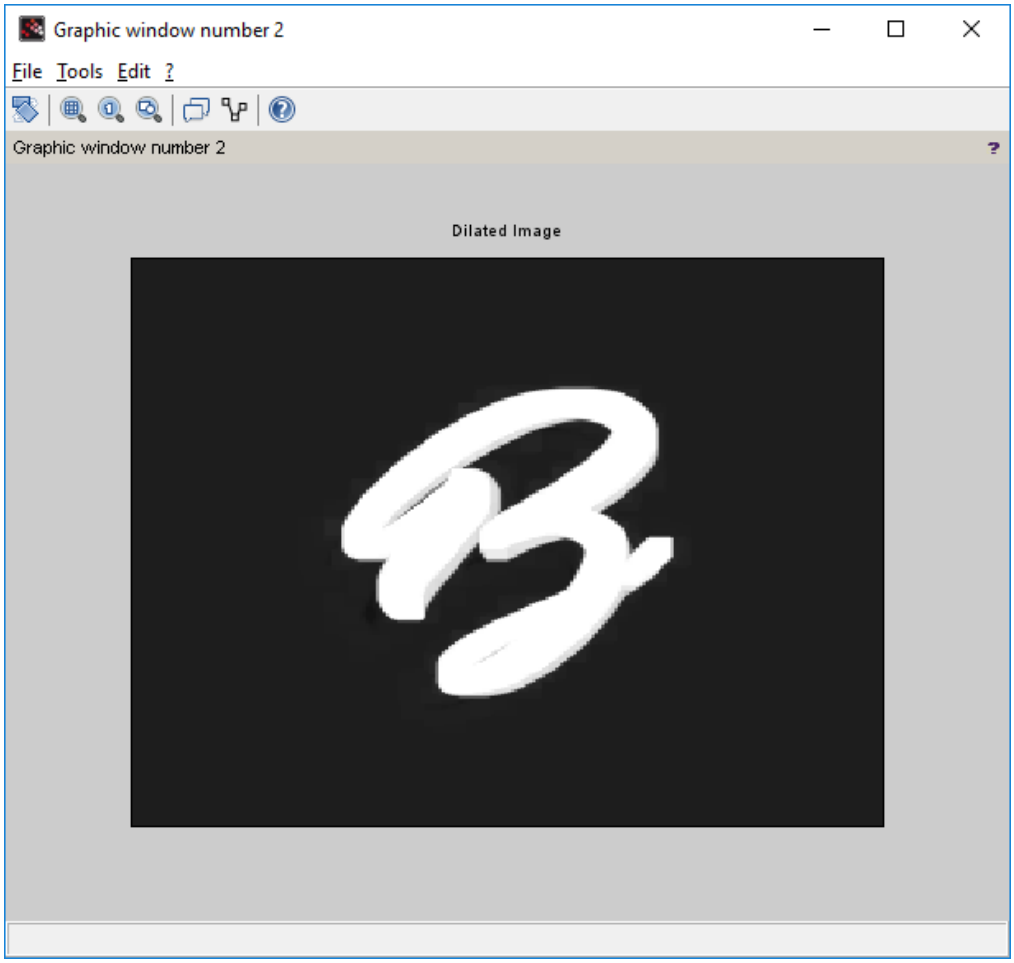
(a) Dilation and erosion process.

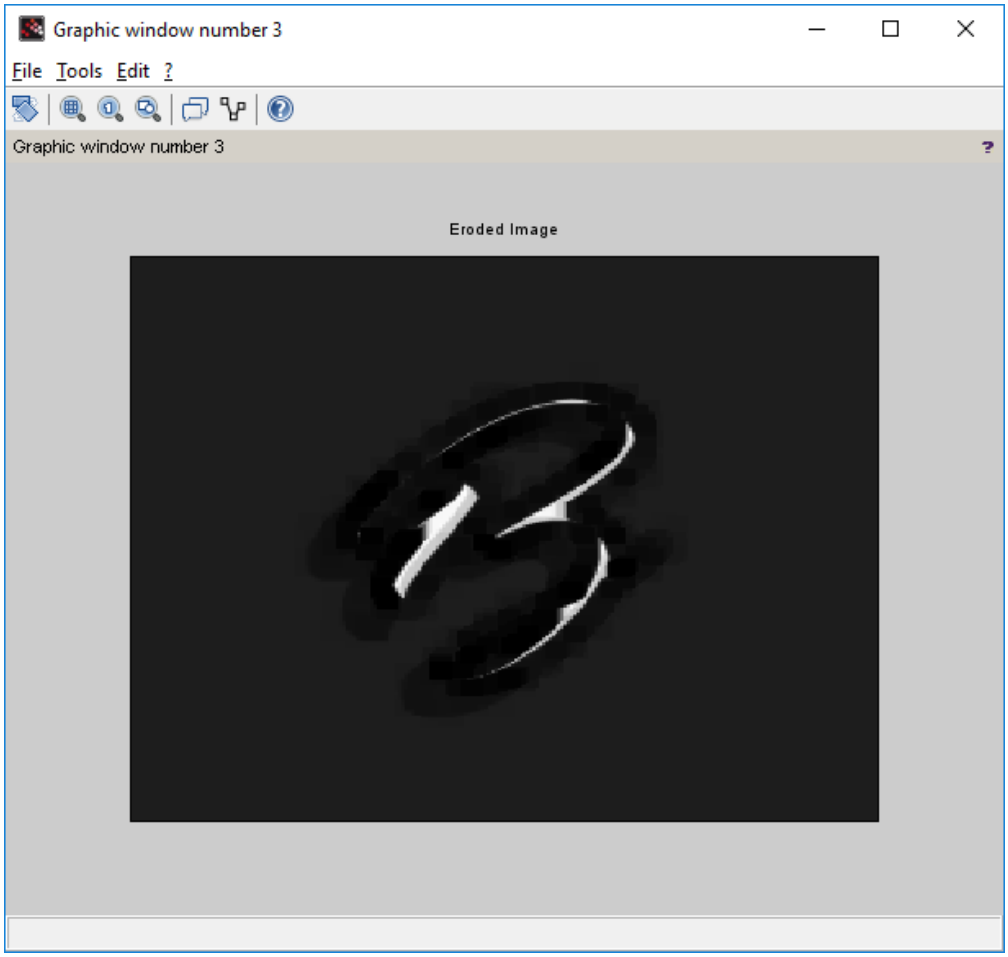
Code:-

```
close ;
clear ;
clc ;
a = imread('C:\Users\ADMIN\Desktop\letter.png');
b = imcreatese('rect',7,7); //Structuring element value can be either rect, ellipse, cross
a1 = imdilate(a,b);
a2 = imerode(a,b);
figure(1)
imshow(a);
title('Original Image')
figure(2)
imshow(a1);
title('Dilated Image')
figure(3)
imshow(a2);
title('Eroded Image')
```

Output:-




Graphic window number 2
File Tools Edit ?
Graphic window number 2
Dilated Image

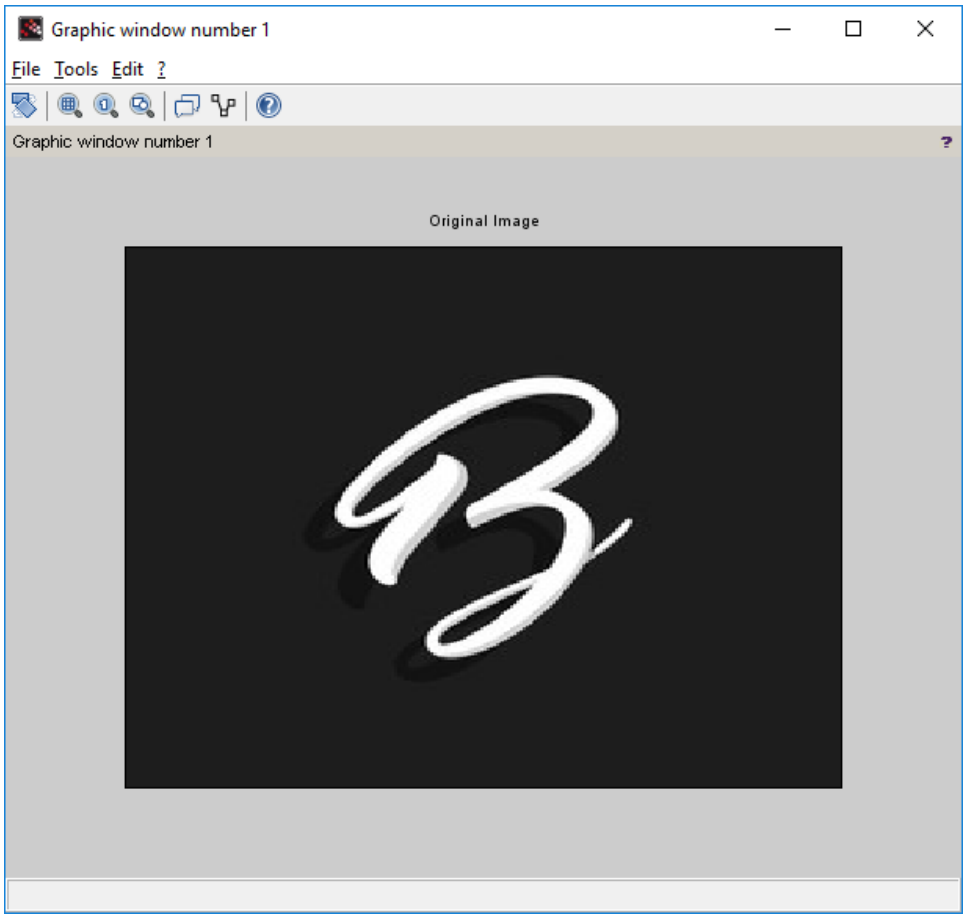

Graphic window number 3
File Tools Edit ?
Graphic window number 3
Eroded Image

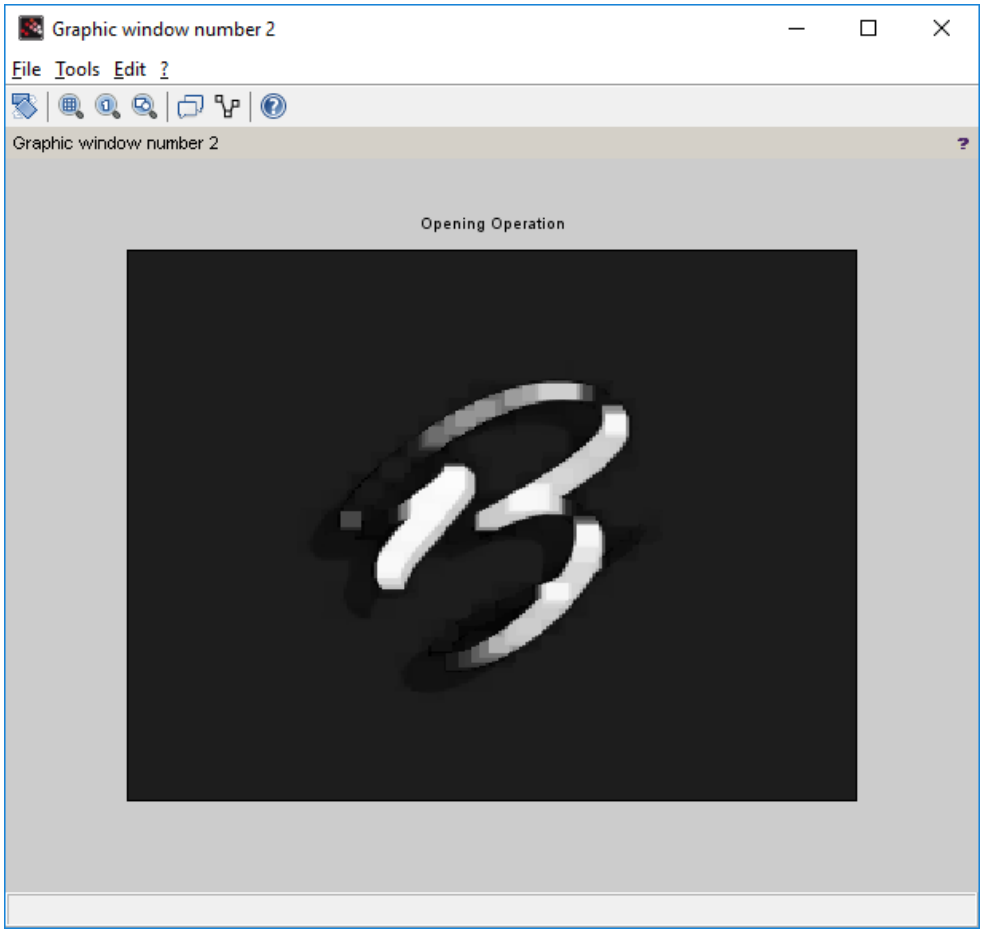
(b) opening and closing operation on the image.

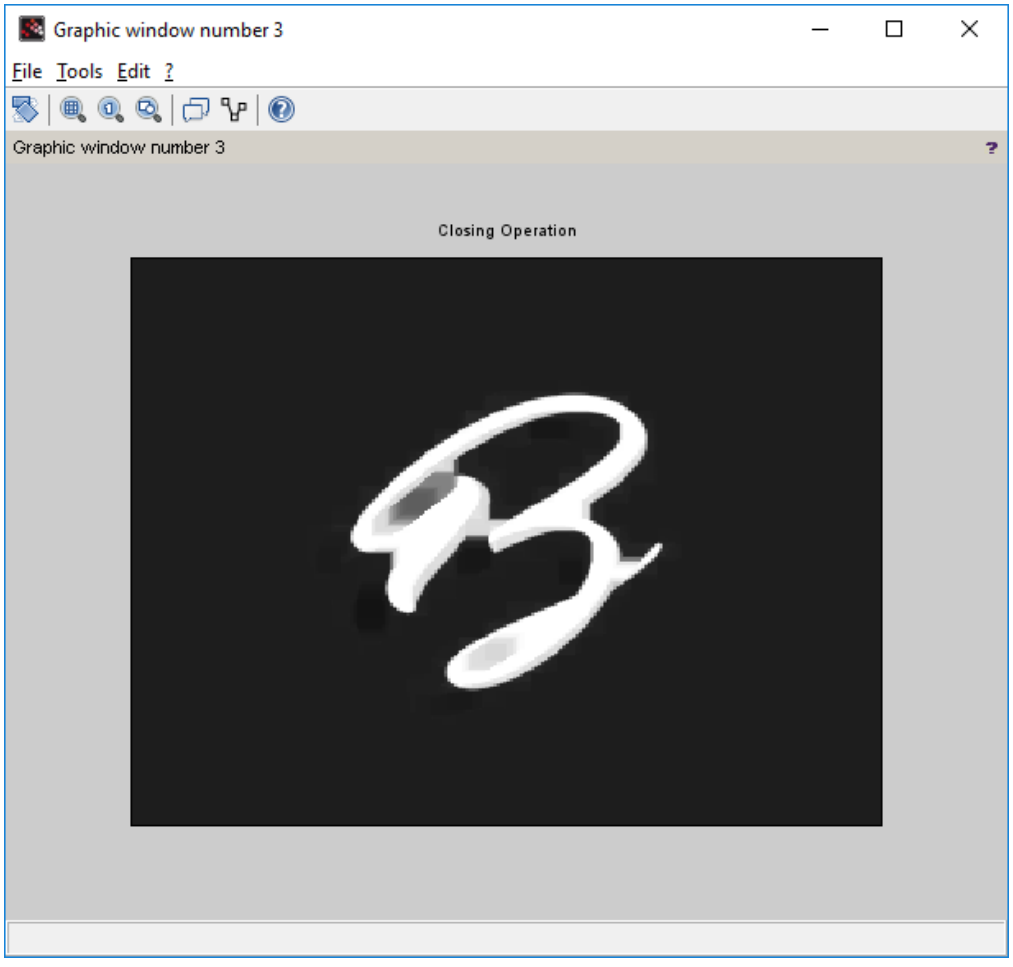
Code:-

```
close ;
clear ;
clc ;
a = imread('C:\Users\ADMIN\Desktop\letter.png');
b = imcreatese('rect',7,7); //Structuring element value can be either rect, ellipse, cross
a1 = imopen(a,b);
a2 = imclose(a,b);
figure(1)
imshow(a);
title('Original Image')
figure(2)
imshow(a1);
title('Opening Operation')
figure(3)
imshow(a2);
title('Closing Operation')
```

Output:-




Graphic window number 2
File Tools Edit ?
Graphic window number 2
Opening Operation

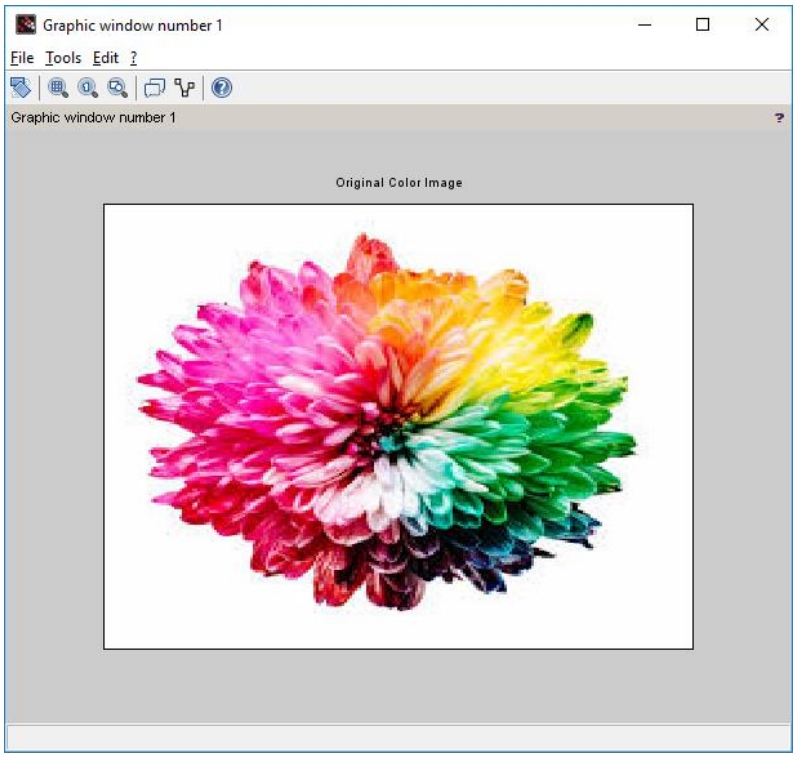

Graphic window number 3
File Tools Edit ?
Graphic window number 3
Closing Operation

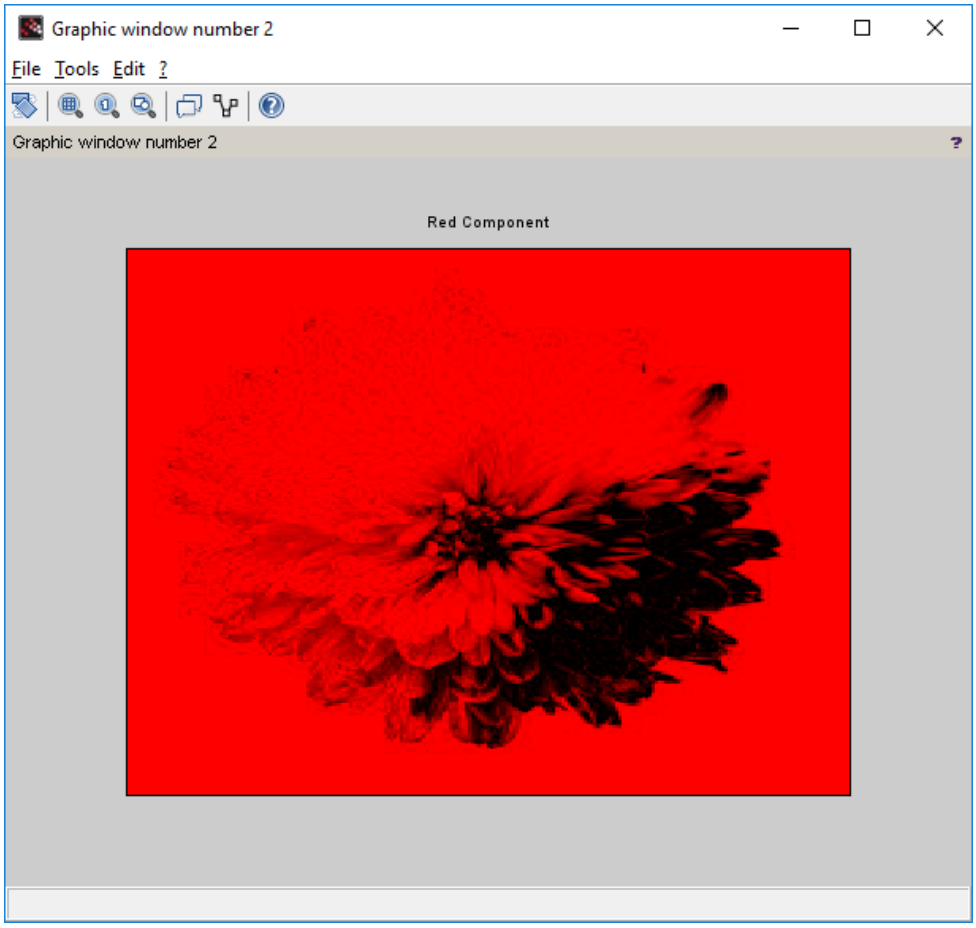
(c) Read an RGB image and extract the three colour components red, green and blue.

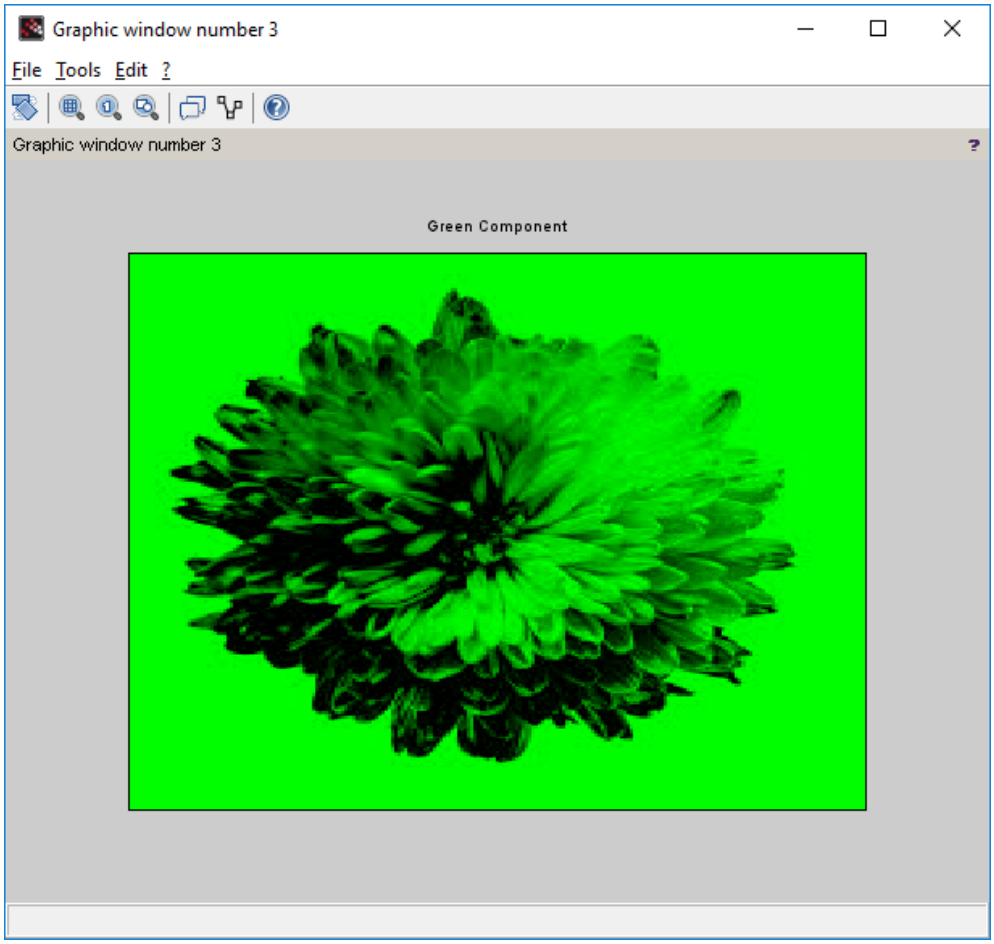
Code:-

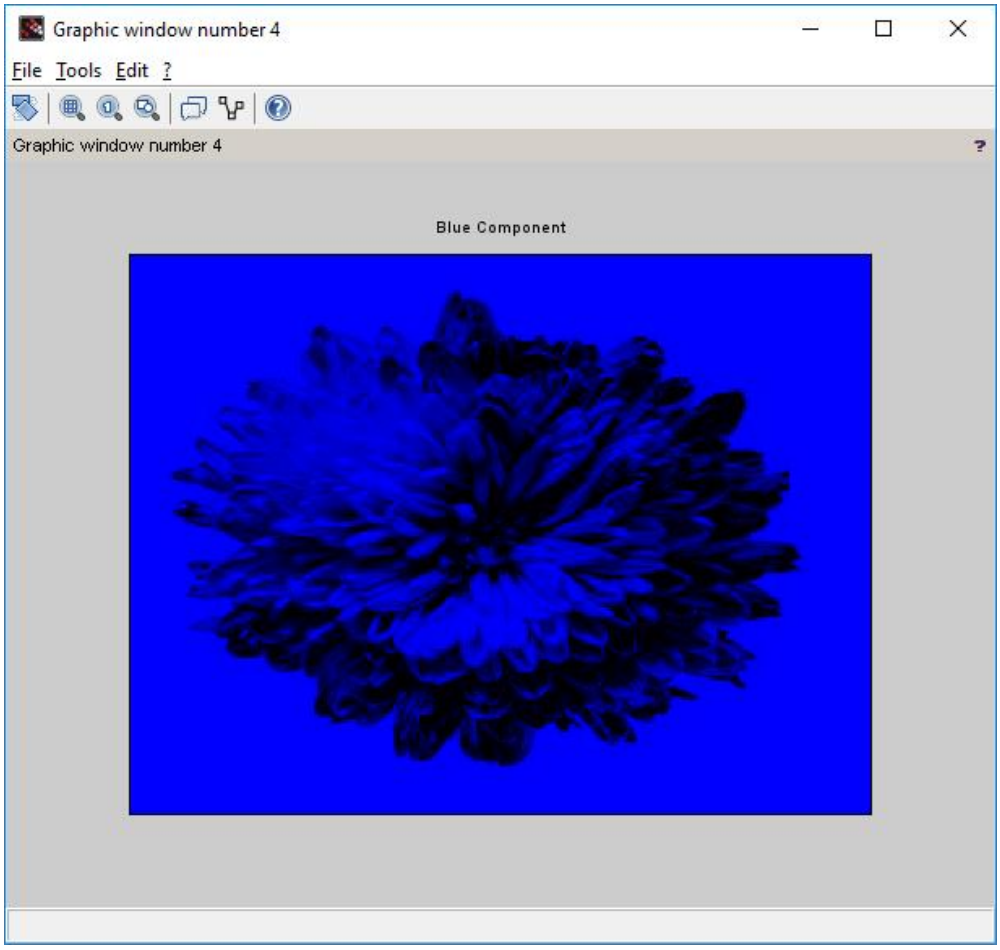
```
clc;
close ;
RGB = imread('C:\Users\ADMIN\Desktop\flower.jpg');
R = RGB;
G = RGB;
B = RGB;
R(: ,: ,2) =0;
R(: ,: ,3) =0;
G(: ,: ,1) =0;
G(: ,: ,3) =0;
B(: ,: ,1) =0;
B(: ,: ,2) =0;
figure(1)
imshow(RGB);
title('Original Color Image');
figure(2)
imshow(R);
title('Red Component');
figure(3)
imshow(G);
title('Green Component');
figure(4)
imshow(B);
title('Blue Component')
```

Output:-




Graphic window number 2
File Tools Edit ?
Graphic window number 2
Red Component


Graphic window number 3
File Tools Edit ?
Graphic window number 3
Green Component

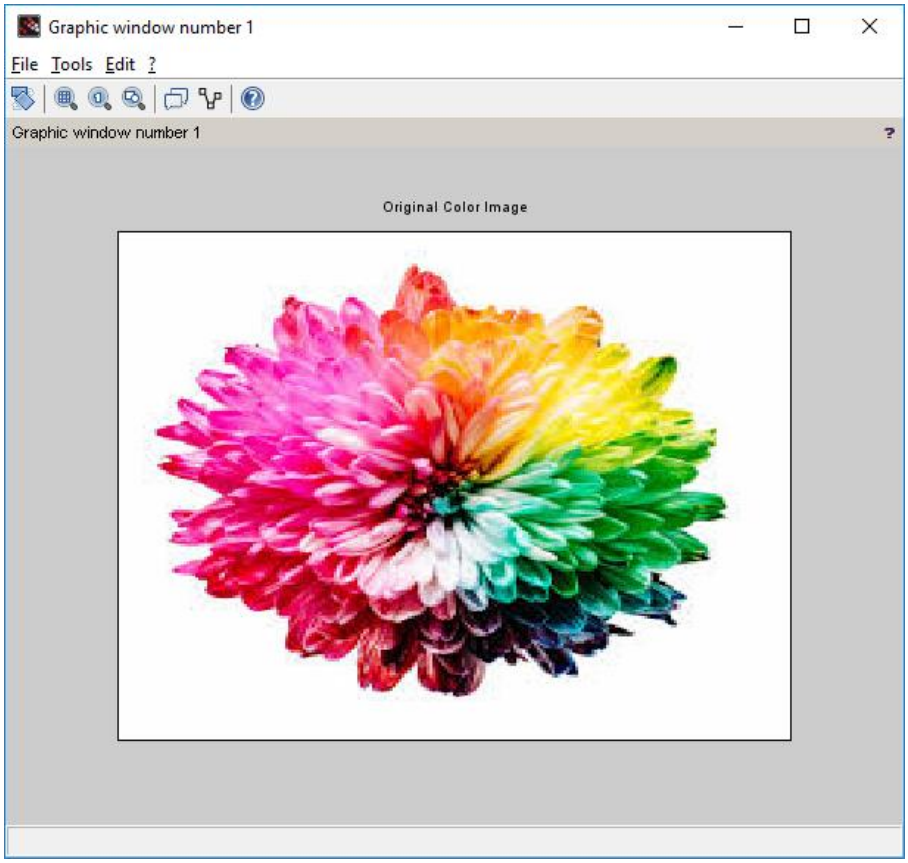


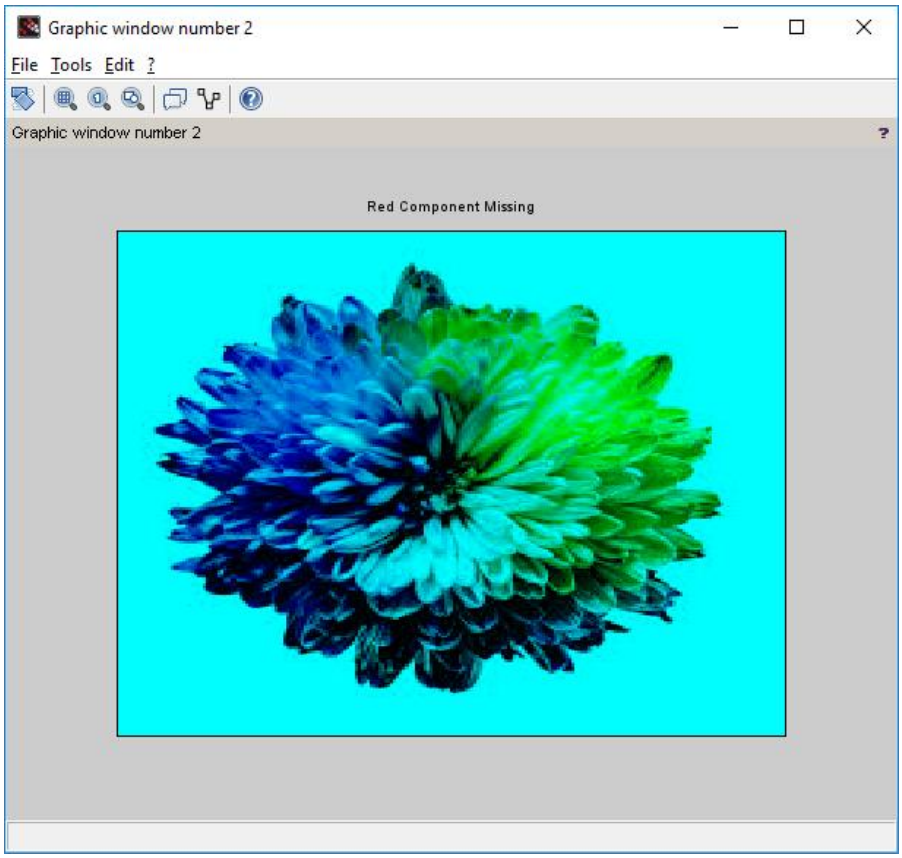
(d) Read a Colour image and separate the colour image into red green and blue planes.

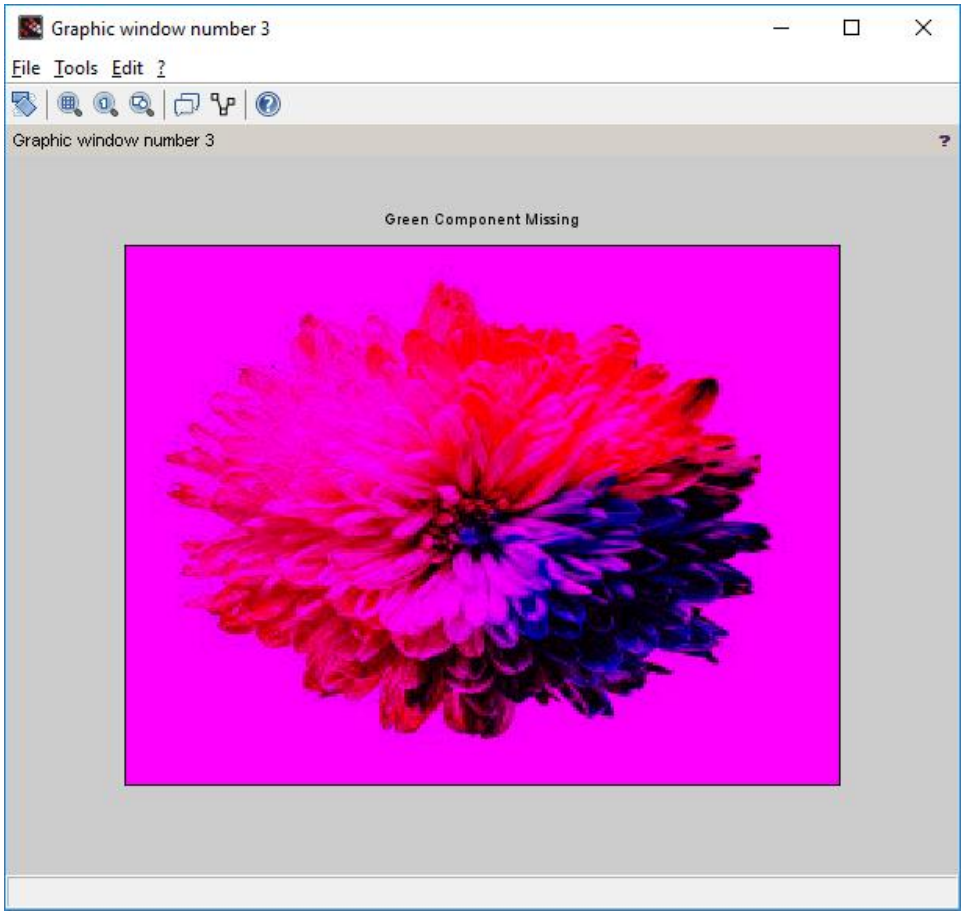
Code:-

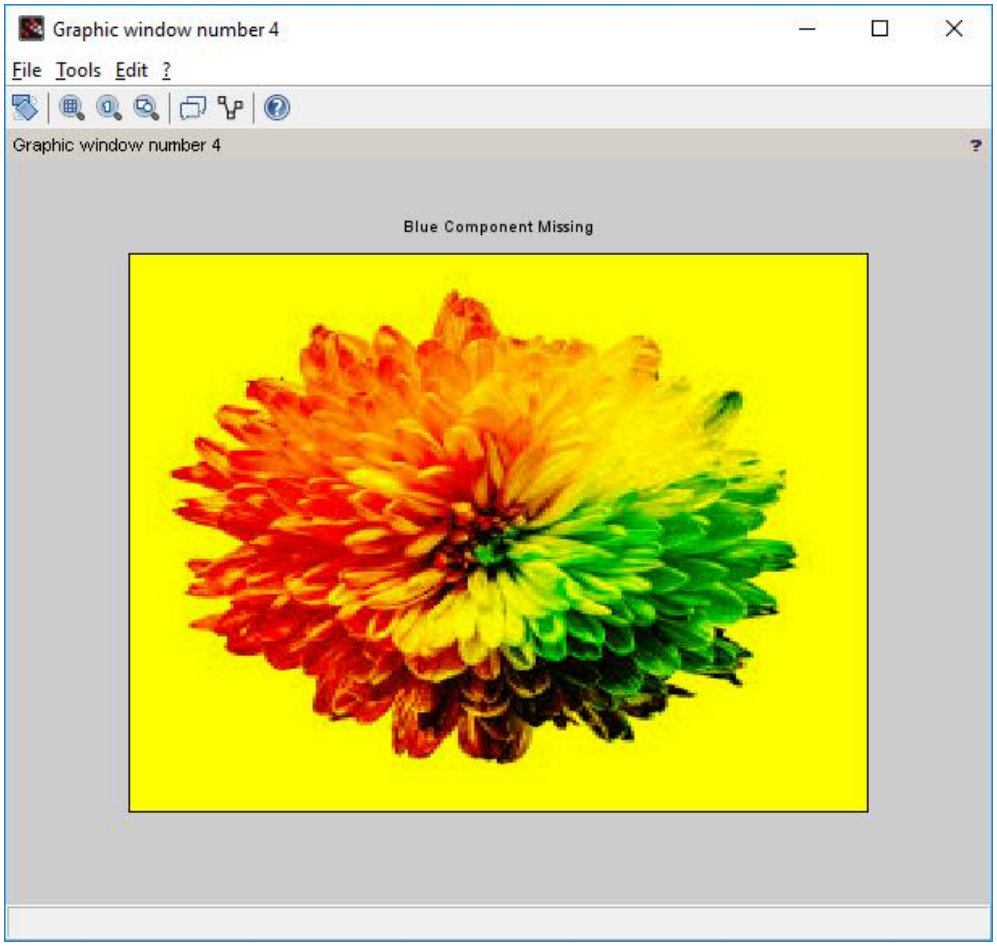
```
clc;
close ;
RGB = imread('C:\Users\ADMIN\Desktop\flower.jpg');
R = RGB;
G = RGB;
B = RGB;
R(: ,: ,1) =0;
G(: ,: ,2) =0;
B(: ,: ,3) =0;
figure(1)
imshow(RGB);
title('Original Color Image');
figure(2)
imshow(R);
title('Red Component Missing');
figure(3)
imshow(G);
title('Green Component Missing');
figure(4)
imshow(B);
title('Blue Component Missing')
```

Output:-


Graphic window number 1
File Tools Edit ?
Graphic window number 1
Original Color Image


Graphic window number 2
File Tools Edit ?
Graphic window number 2
Red Component Missing


Graphic window number 3
File Tools Edit ?
Graphic window number 3
Green Component Missing


Graphic window number 4
File Tools Edit ?
Graphic window number 4
Blue Component Missing