MATLAB Graphics: Color Computations via RGB

Notes:

In the RGB format, color is encoded in a length-3 vector whose components are in between 0 and 1 and specify the amount of red, green, and blue.

Example Script:

% Script File: ShowRGB
% Draws three color grids that depict combinations
% of the primary colors.
% A gray scale is also displayed.

close all
RGB = {{1 0 0},[0 1 0], [0 0 1]};
Name = {'Red','Green','Blue'};

for p = 1:3
  for q = p+1:3
    C1 = RGB{p};
    C2 = RGB{q};
    % Draw Color Grid with primary colors C1 and C2...
    figure
    axis equal off
    hold on
    for i=0:10
      for j=0:10
        % Draw tile (i,j)
        c = C1*i/10 + C2*j/10;
        fill([i i+1 i+1 i i], [j j j+1 j+1 j], c)
      end
    end
    title([Name{p} ' and ' Name{q}],'FontSize',14)
    hold off
  end
end

% Show Gray Scale ...

figure
axis equal off
hold on
title('Gray Scale','FontSize',14)
for k=0:10
  c = [k k k]/10;
  fill([0 1 1 0 0], [k*0 0 1 1 0], c)
  text(2,k+.5,sprintf('
%3.1f, %3.1f, %3.1f'),c)
end
hold off
shg
Sample Output:

Red and Green

Red and Blue
Green and Blue

[ 0.0 , 0.0 , 0.0 ]
[ 0.1 , 0.1 , 0.1 ]
[ 0.2 , 0.2 , 0.2 ]
[ 0.3 , 0.3 , 0.3 ]
[ 0.4 , 0.4 , 0.4 ]
[ 0.5 , 0.5 , 0.5 ]
[ 0.6 , 0.6 , 0.6 ]
[ 0.7 , 0.7 , 0.7 ]
[ 0.8 , 0.8 , 0.8 ]
[ 0.9 , 0.9 , 0.9 ]
[ 1.0 , 1.0 , 1.0 ]

Gray Scale

[ 1.0 , 1.0 , 1.0 ]
[ 0.9 , 0.9 , 0.9 ]
[ 0.8 , 0.8 , 0.8 ]
[ 0.7 , 0.7 , 0.7 ]
[ 0.6 , 0.6 , 0.6 ]
[ 0.5 , 0.5 , 0.5 ]
[ 0.4 , 0.4 , 0.4 ]
[ 0.3 , 0.3 , 0.3 ]
[ 0.2 , 0.2 , 0.2 ]
[ 0.1 , 0.1 , 0.1 ]
[ 0.0 , 0.0 , 0.0 ]