1) Charger une image et récupérer ses composantes couleurs

```
I = imread('https://www.hds.utc.fr/~xuphilip/dokuwiki/_media/en/citroen.jpg');
I = im2double(I);
IR = I(:,:,1); % Composante rouge
IG = I(:,:,2); % Composante verte
IB = I(:,:,3); % Composante bleu
```

2) Afficher les canaux RGB

```
figure(1);
subplot(2,2,1); imshow(I);
subplot(2,2,2); imshow(IR); title('Rouge');
subplot(2,2,3); imshow(IG); title('Vert');
subplot(2,2,4); imshow(IB); title('Bleu');
```

3) Filtrage sur les composantes couleurs

```
maskR = IR > 0.0 & IR < 0.5;
maskG = IG > 0.0 & IG < 1.0;
maskB = IB > 0.0 & IB > 0.2;
mask = maskR&maskG&maskB;
figure(2);
subplot(2,2,1); imshow(I);
subplot(2,2,2); imshow(I.*repmat(maskR,[1,1,3]));
subplot(2,2,3); imshow(I.*repmat(maskB,[1,1,3]));
subplot(2,2,4); imshow(I.*repmat(mask ,[1,1,3]));
```

4) Changement de la couleur de la voiture

```
coeff = [1, 0, 0]; % Coefficients de couleur
IGr = rgb2gray(I);
IR2 = IR; IG2 = IG; IB2 = IB;
IR2(mask)=coeff(1)*IGr(mask)/max(1,coeff(1)*max(IGr(mask)));
IG2(mask)=coeff(2)*IGr(mask)/max(1,coeff(2)*max(IGr(mask)));
IB2(mask)=coeff(3)*IGr(mask)/max(1,coeff(3)*max(IGr(mask)));
figure(3);
subplot(2,1,1); imshow(I);
subplot(2,1,2); imshow(cat(3,IR2,IG2,IB2));
```