% HAMZA HAFEEZ(2K18/ELE/37)

% MUHAMMAD WASEEM HAYAT(2K18/ELE/75)

clear all

clc

%Detect objects using Viola-Jones Algorithm

%To detect Face

FDetect = vision.CascadeObjectDetector;

%Read the input image

I = imread('Hamza37.jpg');

%Returns Bounding Box values based on number of objects

BB = step(FDetect,I);

figure,

imshow(I); hold on

for i = 1:size(BB,1)

rectangle('Position',BB(i,:),'LineWidth',5,'LineStyle','-','EdgeColor','y');

end

title('Face Detection');

hold off;

%To detect Nose

NoseDetect = vision.CascadeObjectDetector('Nose','MergeThreshold',16);

BB=step(NoseDetect,I);

figure,

imshow(I); hold on

for i = 1:size(BB,1)

rectangle('Position',BB(i,:),'LineWidth',4,'LineStyle','-','EdgeColor','b');

end

title('Nose Detection');

hold off;

%To detect Mouth

MouthDetect = vision.CascadeObjectDetector('Mouth','MergeThreshold',128);

BB=step(MouthDetect,I);

figure,

imshow(I); hold on

for i = 1:size(BB,1)

rectangle('Position',BB(i,:),'LineWidth',4,'LineStyle','-','EdgeColor','g');

end

title('Mouth Detection');

hold off;

%To detect Eyes

EyeDetect = vision.CascadeObjectDetector('EyePairBig');

BB=step(EyeDetect,I);

figure,imshow(I);

rectangle('Position',BB,'LineWidth',4,'LineStyle','-','EdgeColor','r');

title('Eyes Detection');

Eyes=imcrop(I,BB);

figure,imshow(Eyes);

hold off;