clc;

clear all;

a=imread('tot.jpg');

figure,imshow(a);

i=rgb2gray(a);

l=graythresh(i);

se=strel('disk',20);

%io=imopen(i,se);

ie=imerode(i,se);

iobr=imreconstruct(ie,i);

%ioc=imclose(io,se);

iobrd=imdilate(iobr,se);

iobrcbr=imreconstruct(imcomplement(iobrd),imcomplement(iobr));

iobrcbr=imcomplement(iobrcbr);

figure,imshow(iobrcbr);title('test');

bw=im2bw(iobrcbr,l);

figure, imshow(bw);title('figure4');

bw1=imcomplement(bw);

bw1=imfill(bw1,'holes');

figure,imshow(bw1);title('figure5');

s=regionprops(bw1,'BoundingBox');

numel(s)

figure,imshow(a);title('figure7');

%subplot(1,2,2);imshow(a);

hold on

for idx=1:numel(s)

obj=imcrop(a,s(idx).BoundingBox);

%figure,imshow(obj);

obj=imresize(obj,1/200); %resize the input image

r1=obj(:,:,1); %determines the red colour in the image

g1=obj(:,:,2); %determines the green colour in the image

b1=obj(:,:,3);

l1=r1(1,2,1); %rgb to gray convesion

m1=g1(1,2,1); %rgb to gray convesion

n1=b1(1,2,1); %rgb to gray convesion

r=l1 %move information l1 to r

g=m1 %move information m1 to g

b=n1

A=[ r g b];

M=max(A) % detemine max value from matrix A

R=(r==M) % r value is compare with max value

G=(g==M) % g value is compare with max value

B=(b==M) % b value is compare with max value

choice=menu('Select the choice','TOMATO','APPLE','CAPSICUM','BANANA','LADYS FINGER','ORANGE','LEMON', 'GUAVA','PEARS','CARROT');

switch(choice)

case 1

if ((R==1)&&(b<200))

h=rectangle('Position',s(idx).BoundingBox);

set(h,'EdgeColor',[.75 0 0]);

fprintf('good','fontsize',20)

else

fprintf('bad','fontsize',20)

end

case 2

ch=menu('Select the choice','RED','GREEN');

switch(ch)

case 1

if ((R==1)&&(g<100))

h=rectangle('Position',s(idx).BoundingBox);

set(h,'EdgeColor',[.75 0 0]);

fprintf('good','fontsize',20)

else

fprintf('bad','fontsize',20)

end

case 2

if(G==1)

h=rectangle('Position',s(idx).BoundingBox);

set(h,'EdgeColor',[.75 0 0]);

fprintf('good','fontsize',20)

else

fprintf('bad','fontsize',20)

end

end

case 3

ch=menu('Select the choice','RED','GREEN');

switch(ch)

case 1

if ((R==1)&&(g<200))

h=rectangle('Position',s(idx).BoundingBox);

set(h,'EdgeColor',[.75 0 0]);

fprintf('good','fontsize',20)

else

fprintf('bad','fontsize',20)

end

case 2

if(G==1)

h=rectangle('Position',s(idx).BoundingBox);

set(h,'EdgeColor',[.75 0 0]);

fprintf('good','fontsize',20)

else

fprintf('bad','fontsize',20)

end

case 3

if(G==1)

h=rectangle('Position',s(idx).BoundingBox);

set(h,'EdgeColor',[.75 0 0]);

fprintf('good','fontsize',20)

else

fprintf('bad','fontsize',20)

end

end

case 4

if((R==1)&&(r>220))

h=rectangle('Position',s(idx).BoundingBox);

set(h,'EdgeColor',[.75 0 0]);

fprintf('good','fontsize',20)

else

fprintf('bad','fontsize',20)

end

case 5

if(G==1)

h=rectangle('Position',s(idx).BoundingBox);

set(h,'EdgeColor',[.75 0 0]);

fprintf('good','fontsize',20)

else

fprintf('bad','fontsize',20)

end

case 6

if((R==1)&&(b<70))

h=rectangle('Position',s(idx).BoundingBox);

set(h,'EdgeColor',[.75 0 0]);

fprintf('good','fontsize',20)

else

fprintf('bad','fontsize',20)

end

case 7

if(G~=1);

h=rectangle('Position',s(idx).BoundingBox);

set(h,'EdgeColor',[.75 0 0]);

fprintf('good','fontsize',20)

else

fprintf('bad','fontsize',20)

end

case 8

if(G==1);

h=rectangle('Position',s(idx).BoundingBox);

set(h,'EdgeColor',[.75 0 0]);

fprintf('good','fontsize',20)

else

fprintf('bad','fontsize',20)

end

case 9

if(G==1);

h=rectangle('Position',s(idx).BoundingBox);

set(h,'EdgeColor',[.75 0 0]);

fprintf('good','fontsize',20)

else

fprintf('bad','fontsize',20)

end

end

hold off;