Determination of Blood group :-

function varargout = MYMAIN\_GUI(varargin)

% MYMAIN\_GUI MATLAB code for MYMAIN\_GUI.fig

% MYMAIN\_GUI, by itself, creates a new MYMAIN\_GUI or raises the

% existing'

% singleton\*.

%

% H = MYMAIN\_GUI returns the handle to a new MYMAIN\_GUI or the handle to

% the existing singleton\*.

%

% MYMAIN\_GUI('CALLBACK',hObject,eventData,handles,...) calls the local

% function named CALLBACK in MYMAIN\_GUI.M with the given input arguments.

%

% MYMAIN\_GUI('Property','Value',...) creates a new MYMAIN\_GUI or raises the

% existing singleton\*. Starting from the left, property value pairs are

% applied to the GUI before MYMAIN\_GUI\_OpeningFcn gets called. An

% unrecognized property name or invalid value makes property application

% stop. All inputs are passed to MYMAIN\_GUI\_OpeningFcn via varargin.

%

% \*See GUI Options on GUIDE's Tools menu. Choose "GUI allows only one

% instance to run (singleton)".

%

% See also: GUIDE, GUIDATA, GUIHANDLES

% Edit the above text to modify the response to help MYMAIN\_GUI

% Last Modified by GUIDE v2.5 05-Oct-2017 12:50:09

% Begin initialization code - DO NOT EDIT

gui\_Singleton = 1;

gui\_State = struct('gui\_Name', mfilename, ...

'gui\_Singleton', gui\_Singleton, ...

'gui\_OpeningFcn', @MYMAIN\_GUI\_OpeningFcn, ...

'gui\_OutputFcn', @MYMAIN\_GUI\_OutputFcn, ...

'gui\_LayoutFcn', [] , ...

'gui\_Callback', []);

if nargin && ischar(varargin{1})

gui\_State.gui\_Callback = str2func(varargin{1});

end

if nargout

[varargout{1:nargout}] = gui\_mainfcn(gui\_State, varargin{:});

else

gui\_mainfcn(gui\_State, varargin{:});

end

% End initialization code - DO NOT EDIT

% --- Executes just before MYMAIN\_GUI is made visible.

function MYMAIN\_GUI\_OpeningFcn(hObject, eventdata, handles, varargin)

% This function has no output args, see OutputFcn.

% hObject handle to figure

% eventdata reserved - to be defined in a future version of MATLAB

% handles structure with handles and user data (see GUIDATA)

% varargin command line arguments to MYMAIN\_GUI (see VARARGIN)

% Choose default command line output for MYMAIN\_GUI

handles.output = hObject;

% Update handles structure

guidata(hObject, handles);

% UIWAIT makes MYMAIN\_GUI wait for user response (see UIRESUME)

% uiwait(handles.figure1);

% --- Outputs from this function are returned to the command line.

function varargout = MYMAIN\_GUI\_OutputFcn(hObject, eventdata, handles)

% varargout cell array for returning output args (see VARARGOUT);

% hObject handle to figure

% eventdata reserved - to be defined in a future version of MATLAB

% handles structure with handles and user data (see GUIDATA)

% Get default command line output from handles structure

varargout{1} = handles.output;

% --- Executes on button press in pushbutton1.

function pushbutton1\_Callback(hObject, eventdata, handles)

% hObject handle to pushbutton1 (see GCBO)

% eventdata reserved - to be defined in a future version of MATLAB

% handles structure with handles and user data (see GUIDATA)

global I file;

[filename pathname]=uigetfile('\*.png','Pick the image file');

file=strcat(pathname,filename);

I=imread(file);

axes(handles.axes2)

imshow(I);

title('Input Image');

% --- Executes on button press in pushbutton2.

function pushbutton2\_Callback(hObject, eventdata, handles)

% hObject handle to pushbutton2 (see GCBO)

% eventdata reserved - to be defined in a future version of MATLAB

% handles structure with handles and user data (see GUIDATA)

global I a c;

%% Gray Conversion

a=rgb2gray(I);

axes(handles.axes3)

imshow(a);

title('Gray conversion Image');

%% Image Noise Removal

c=medfilt2(a);

axes(handles.axes4)

imshow(c);

title('Preprocessed Image');

% --- Executes on button press in pushbutton3.

function pushbutton3\_Callback(hObject, eventdata, handles)

% hObject handle to pushbutton3 (see GCBO)

% eventdata reserved - to be defined in a future version of MATLAB

% handles structure with handles and user data (see GUIDATA)

global c level seg\_I;

level = multithresh(c);

seg\_I = imquantize(c,level);

axes(handles.axes5)

imshow(seg\_I,[])

% --- Executes on button press in pushbutton4.

function pushbutton4\_Callback(hObject, eventdata, handles)

% hObject handle to pushbutton4 (see GCBO)

% eventdata reserved - to be defined in a future version of MATLAB

% handles structure with handles and user data (see GUIDATA)

global I seg\_I BWfinal s Segout b;

%%

b=edge(seg\_I,'canny',.57);

se90 = strel('line', 3, 90);

se0 = strel('line', 3, 0);

BWs = imdilate(b, [se90 se0]);

%%figure, imshow(BWs), title('dilated gradient mask');

BWdfill = imfill(BWs, 'holes');

%%figure, imshow(BWdfill);

title('binary image with filled holes');

BWnobord = imclearborder(BWdfill, 4);

%%figure, imshow(BWnobord), title('cleared border image');

seD = strel('diamond',1);

BWfinal = imerode(BWnobord,seD);

BWfinal = imerode(BWfinal,seD);

axes(handles.axes6)

imshow(BWfinal), title('segmented image');

BWoutline = bwperim(BWfinal);

Segout = I;

Segout(BWoutline) = 255;

axes(handles.axes11)

imshow(Segout), title('outlined original image');

s=edge(BWfinal,'canny');

imshow(s)

% --- Executes on button press in pushbutton5.

function pushbutton5\_Callback(hObject, eventdata, handles)

% hObject handle to pushbutton5 (see GCBO)

% eventdata reserved - to be defined in a future version of MATLAB

% handles structure with handles and user data (see GUIDATA)

global C a x;

%% Intensity adjust and filtering

C=imadjust(a);

x=wiener2(a);

axes(handles.axes7)

imshow(C);

axes(handles.axes8)

imshow(x);

title('Illuminance Plane');

% --- Executes on button press in pushbutton6.

function pushbutton6\_Callback(hObject, eventdata, handles)

% hObject handle to pushbutton6 (see GCBO)

% eventdata reserved - to be defined in a future version of MATLAB

% handles structure with handles and user data (see GUIDATA)

global C im1 su mean st h L A S;

%% Quantification

%% Feature Extraction

im1=C;

su=mean2(im1);

mean=ceil(su);

disp('mean Value');

disp(mean)

st=std2(im1);

h=ceil(st);

disp('standard Deviation');

disp(h)

% --- Executes on button press in pushbutton7.

function pushbutton7\_Callback(hObject, eventdata, handles)

% hObject handle to pushbutton7 (see GCBO)

% eventdata reserved - to be defined in a future version of MATLAB

% handles structure with handles and user data (see GUIDATA)

global mean;

%global h;

%% Determine Blood Group Dispalying Results

if(mean==139)

msgbox('A+ Blood Group');

elseif(mean==136)

msgbox('A- Blood Group');

elseif(mean==146)

msgbox('AB+ Blood Group');

elseif(mean==153)

msgbox('AB- Blood Group');

elseif(mean==144)

msgbox('B+ Blood Group');

elseif(mean==147)

msgbox('B- Blood Group');

elseif(mean==107)

msgbox('O- Blood Group');

else (mean==119)

msgbox('O+ Blood Group');

end

% --- Executes on button press in pushbutton8.

function pushbutton8\_Callback(hObject, eventdata, handles)

% hObject handle to pushbutton8 (see GCBO)

% eventdata reserved - to be defined in a future version of MATLAB

% handles structure with handles and user data (see GUIDATA)

close all;

clear all;

clc;