

# ASSIGNMENT

## DIGITAL IMAGE PROCESSING

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### CODE:

```
function varargout = assignment(varargin)
% ASSIGNMENT MATLAB code for assignment.fig
%   ASSIGNMENT, by itself, creates a new ASSIGNMENT or raises the existing
%   singleton*.
%
%   H = ASSIGNMENT returns the handle to a new ASSIGNMENT or the handle to
%   the existing singleton*.
%
%   ASSIGNMENT('CALLBACK',hObject,eventData,handles,...) calls the local
%   function named CALLBACK in ASSIGNMENT.M with the given input arguments.
%
%   ASSIGNMENT('Property','Value',...) creates a new ASSIGNMENT or raises the
%   existing singleton*. Starting from the left, property value pairs are
%   applied to the GUI before assignment_OpeningFcn gets called. An
%   unrecognized property name or invalid value makes property application
%   stop. All inputs are passed to assignment_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 assignment

% Last Modified by GUIDE v2.5 30-Sep-2020 18:39:17

% Begin initialization code - DO NOT EDIT
gui_Singleton = 1;
gui_State = struct('gui_Name',       mfilename, ...
                  'gui_Singleton',   gui_Singleton, ...
                  'gui_OpeningFcn',  @assignment_OpeningFcn, ...
                  'gui_OutputFcn',  @assignment_OutputFcn, ...
                  'gui_LayoutFcn',  [], ...
                  'gui_Callback',    []);
```

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if nargin && ischar(varargin{1})
    gui_State.gui_Callback = str2func(varargin{1});
end

if nargin
    [varargout{1:nargout}] = gui_mainfcn(gui_State, varargin{:});
else
    gui_mainfcn(gui_State, varargin{:});
end
% End initialization code - DO NOT EDIT

% --- Executes just before assignment is made visible.
function assignment_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 assignment (see VARARGIN)

% Choose default command line output for assignment
handles.output = hObject;

% Update handles structure
guidata(hObject, handles);

% UIWAIT makes assignment wait for user response (see UIRESUME)
% uiwait(handles.figure1);

% --- Outputs from this function are returned to the command line.
function varargout = assignment_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;

%load image
% --- 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 in;
in=imread('leena.jpg');
axes(handles.axes1);
imshow(in);
axes(handles.axes3);
hold off;
cla reset;

%colour image conversion to gray image

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% --- 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 b;
global in;
b=rgb2gray(in);
axes(handles.axes3);
imshow(b);

%histogram equalisation of 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 b;
global j;
axes(handles.axes1);
imshow(b);
j=histeq(b);
axes(handles.axes3);
imshow(j);

%histogram equalised graph
% --- 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 b;
j=histeq(b);
axes(handles.axes1);
imshow(j);
title('histogramequalised image');
axes(handles.axes3);
imhist(j);
title('histogram graph after histogram equalization');

%contrast stretching
% --- 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 b;
s=imadjust(b,stretchlim(b,[0.05 0.95]),[]);
axes(handles.axes1);
imshow(b);
axes(handles.axes3);
imshow(s);

% histogram of contrast stretching
% --- Executes on button press in pushbutton8.
function pushbutton8_Callback(hObject, eventdata, handles)

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% 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)
global b;
s=imadjust(b,stretchlim(b,[0.05 0.95]),[]);
axes(handles.axes1);
imshow(s);
axes(handles.axes3);
imhist(s);

%negative the colour image
% --- Executes on button press in pushbutton9.
function pushbutton9_Callback(hObject, eventdata, handles)
% hObject   handle to pushbutton9 (see GCBO)
% eventdata reserved - to be defined in a future version of MATLAB
% handles   structure with handles and user data (see GUIDATA)
global in;
N=255-in;
axes(handles.axes1);
imshow(in);
axes(handles.axes3);
imshow(N);

% blurs the colour image
% --- Executes on button press in pushbutton10.
function pushbutton10_Callback(hObject, eventdata, handles)
% hObject   handle to pushbutton10 (see GCBO)
% eventdata reserved - to be defined in a future version of MATLAB
% handles   structure with handles and user data (see GUIDATA)
global in;
axes(handles.axes1);
imshow(in);
ag=fspecial('average',[10,10]);
g=imfilter(in,ag);
axes(handles.axes3);
imshow(g);

% convert to black and white
% --- Executes on button press in pushbutton11.
function pushbutton11_Callback(hObject, eventdata, handles)
% hObject   handle to pushbutton11 (see GCBO)
% eventdata reserved - to be defined in a future version of MATLAB
% handles   structure with handles and user data (see GUIDATA)
global in;
bw=im2bw(in);
axes(handles.axes1);
imshow(in);
axes(handles.axes3);
imshow(bw);

```

## SCREENSHOTS







