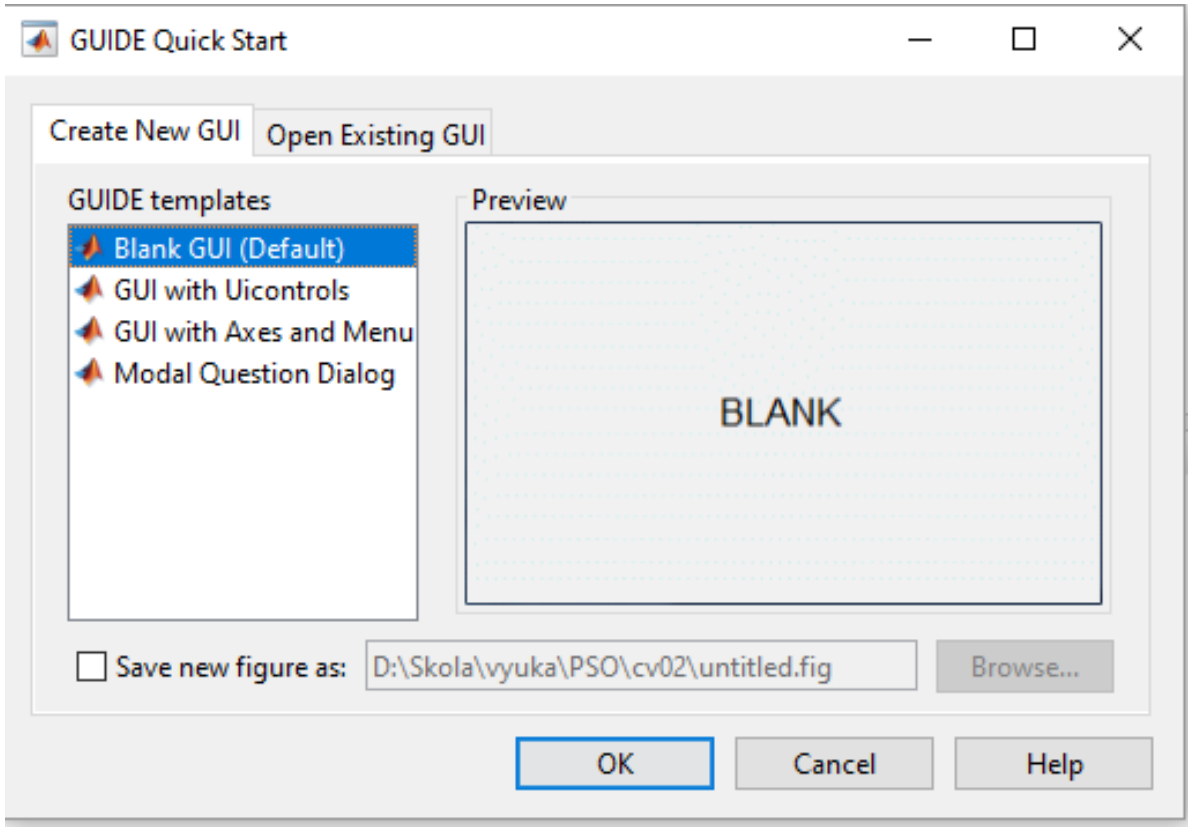
Advanced Image Processing - Matlab GUI

Ing. Viktor Kocur
viktor.kocur@fmph.uniba.sk

DAI FMFI UK

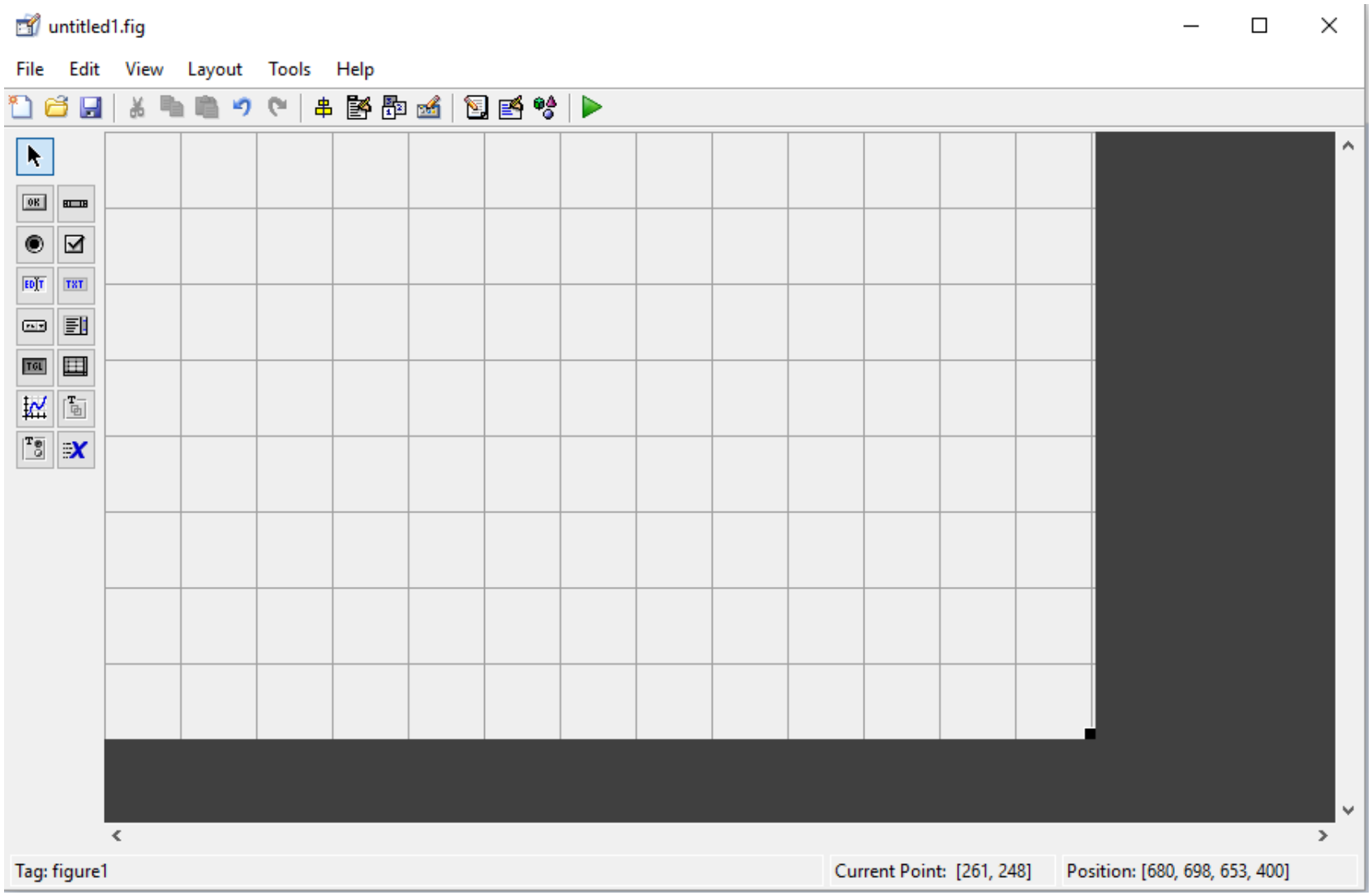
2.10.2019

Starting

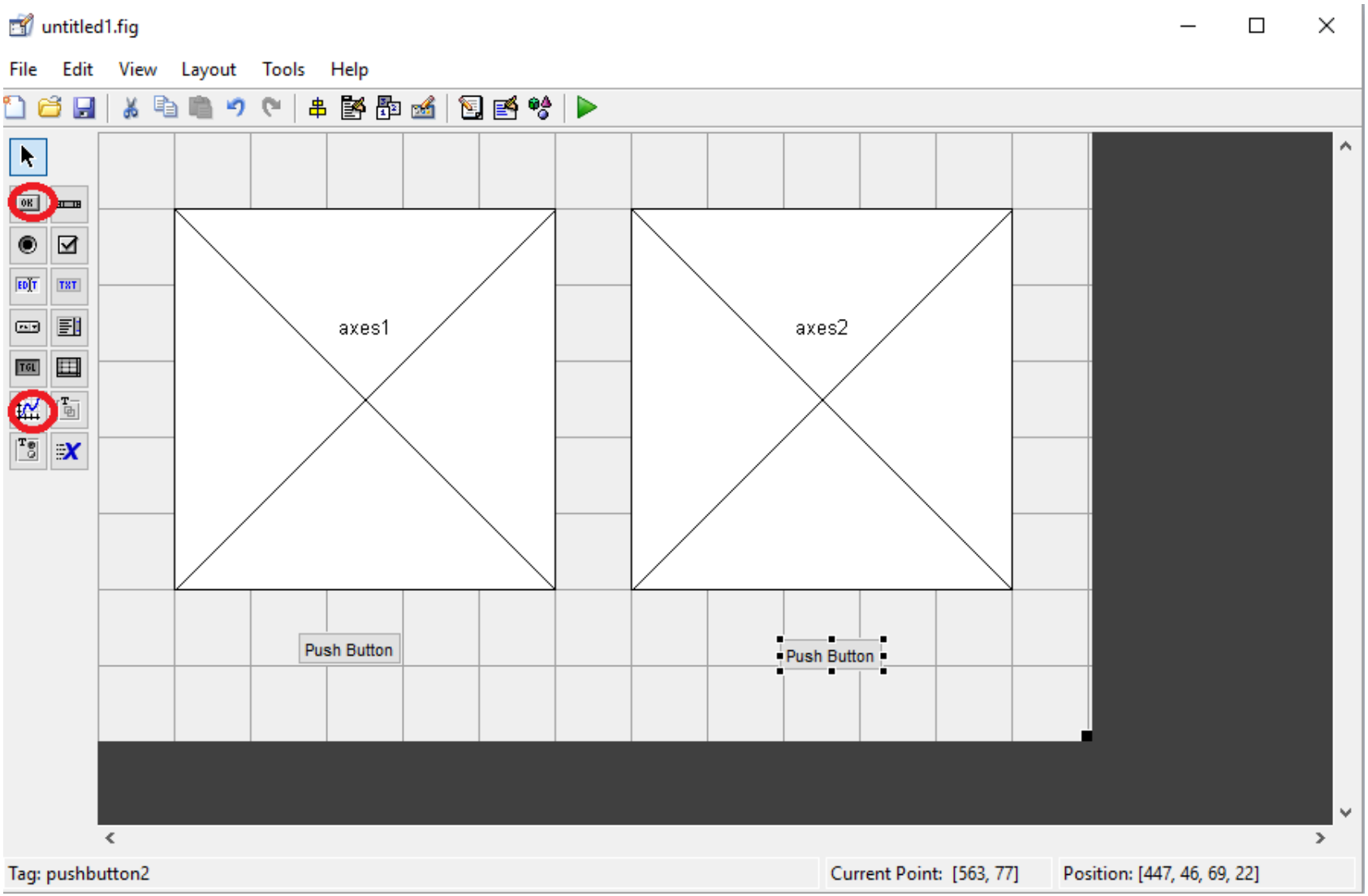


We get here by entering the command guide

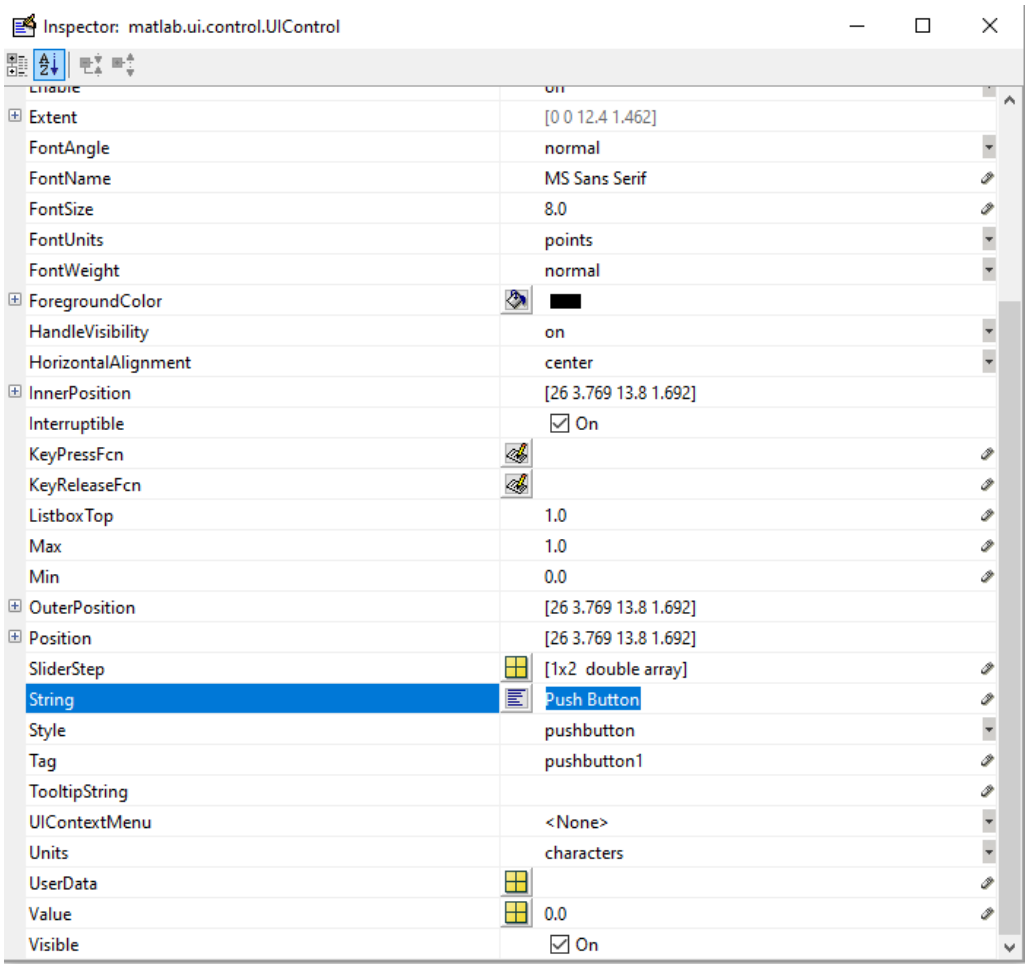
Empty GUI


untitled1.fig
File
Edit
View
Layout
Tools
Help
Tag: figure1
Current Point: [261, 248]
Position: [680, 698, 653, 400]

Adding axes a buttons

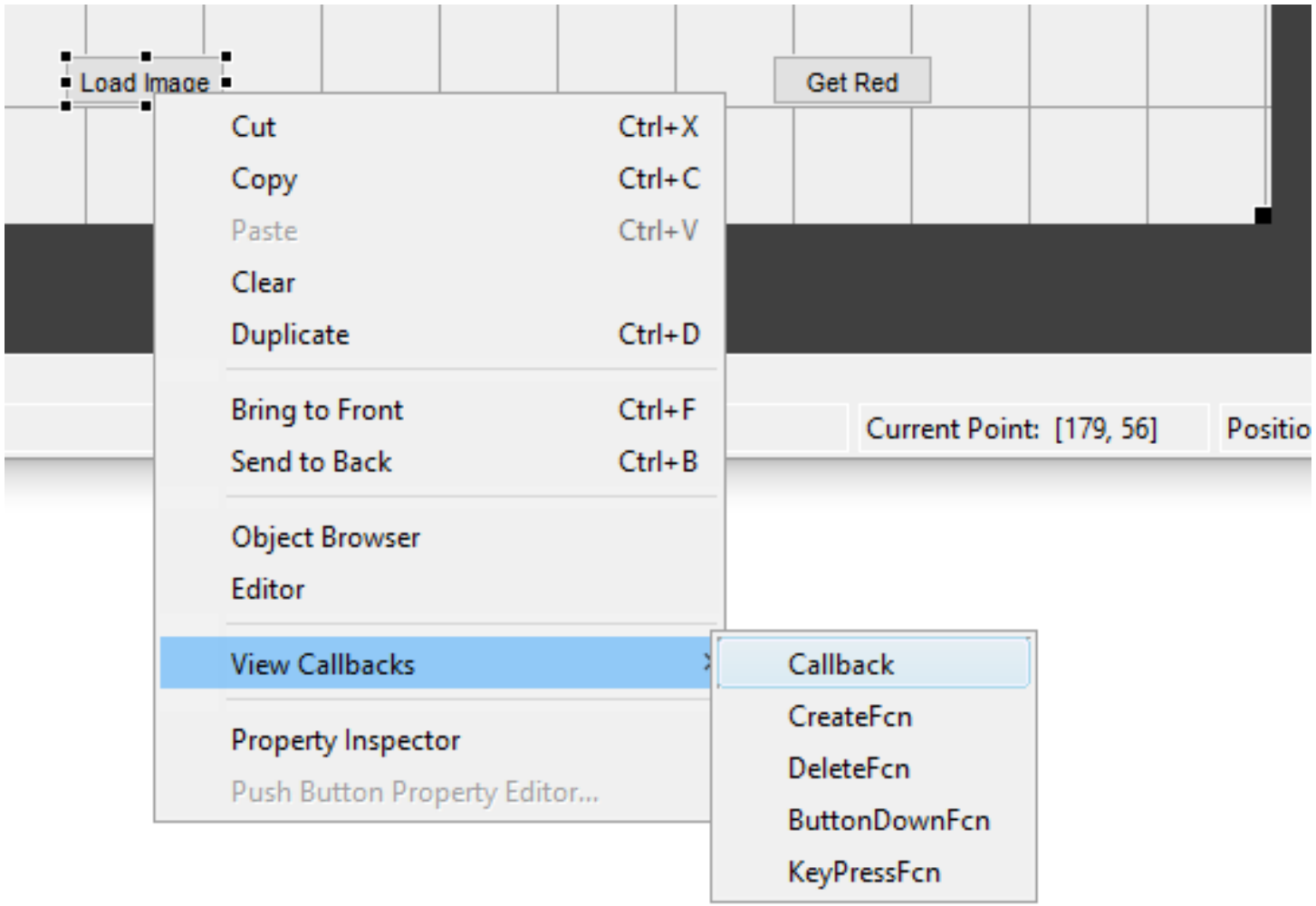


Changing the properties of objects



Open this by double clicking the object.

Callbacks


Load Image
Get Red
Current Point: [179, 56]
Positio
Cut Ctrl+X
Copy Ctrl+C
Paste Ctrl+V
Clear
Duplicate Ctrl+D
Bring to Front Ctrl+F
Send to Back Ctrl+B
Object Browser
Editor
View Callbacks
Property Inspector
Push Button Property Editor...
Callback
CreateFcn
DeleteFcn
ButtonDownFcn
KeyPressFcn

Writing data

set

set(handle.objekt1,'property', value) - changes the 'property' of objektu1 to value

set - userdata

set(handle.objekt1,'UserData', data) - we use UserData property to save our own data

get

get(handle.objekt1,'Property') - reading properties, most useful for UserData

uigetfile

uigetfile() - opens a window to search for files in explorer

Writing and readig data

```
% --- 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 o
% handles    structure with handles and user data (see GUI
[i_file,i_PathName] = uigetfile({'*.*', 'All Files (*.*)'})
if ~isequal(i_file, 0)
 % Reading the Image file
 i_file = fullfile(i_PathName,i_file);
 rgb = im2double(imread(i_file));
 set(handles.pushbutton2,'Enable', 'on');
 set(handles.pushbutton1,'UserData',rgb);
 imshow(rgb, 'Parent', handles.axes1);
end
```

Reading our data

```
function pushbutton2_Callback(hObject, eventdata, handles)
% hObject    handle to pushbutton2 (see GCBO)
% eventdata  reserved - to be defined in a future version o
% handles    structure with handles and user data (see GUI
orig = get(handles.pushbutton1,'UserData');
orig(:,:,[2 3]) = 0;
ax = handles.axes2;
imshow(orig, 'Parent', ax);
```

Exercise

Assignment

Create a GUI where you can load an image and using three slides with values between 0 and 1 you can determine the scale with which you multiply the three RGB channels of the image which gets displayed in the GUI.

Sliders note

You can change the slider from vertical to horizontal and vice verse by changing its width/height.