

**LAPORAN HASIL
PENGOLAHAN CITRA DIGITAL**



Oleh:

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PTIK C

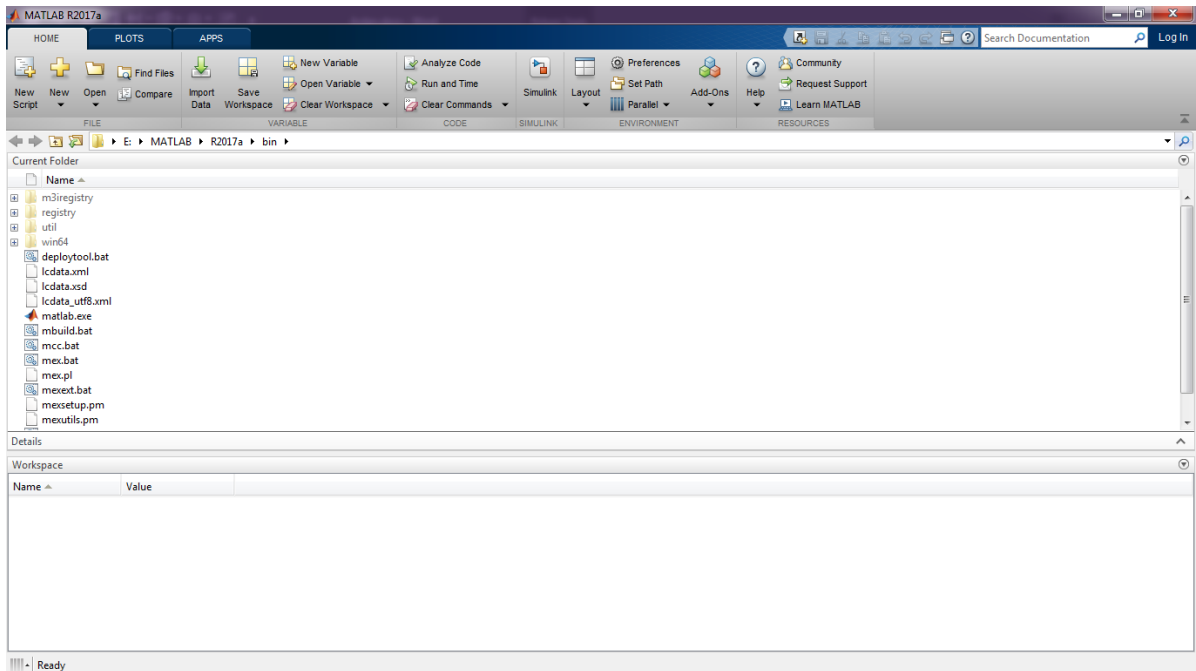
**PRODI PENDIDIKAN TEKNIK INFORMATIKA DAN KOMPUTER
JURUSAN TEKNIK INFORMATIKA DAN KOMPUTER
UNIVERSITAS NEGERI MAKASSAR**

2021

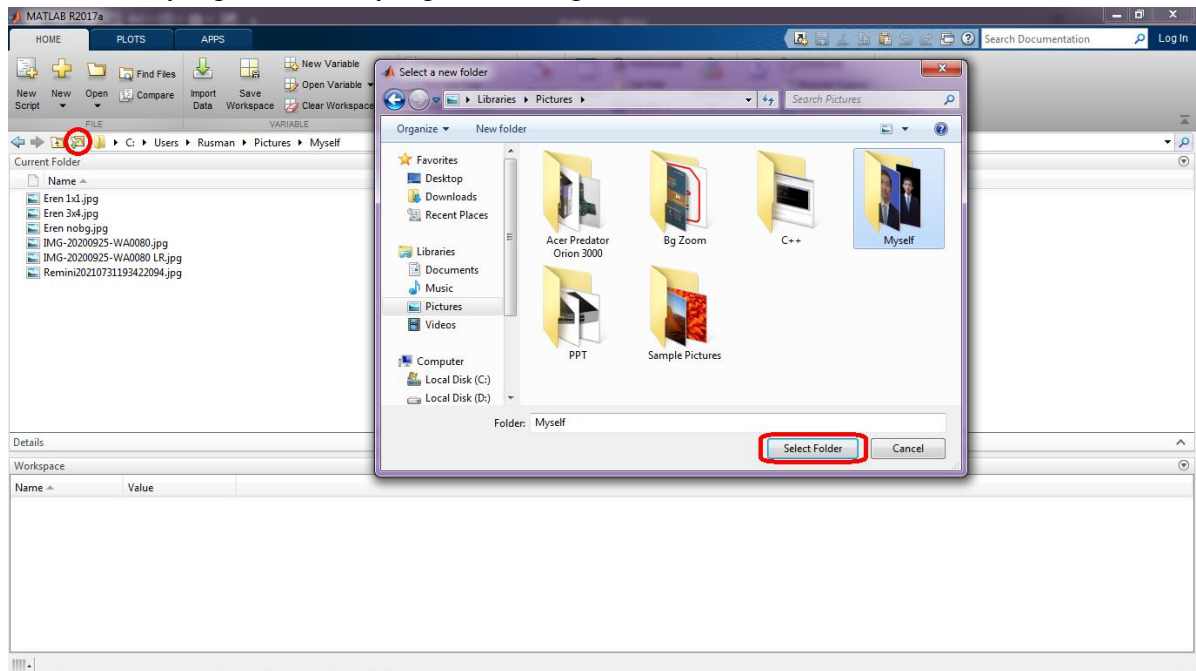
LANGKAH-LANGKAH MENGUBA H CITRA PADA GAMBAR

A. Langkah Mengubah Citra pada gambar

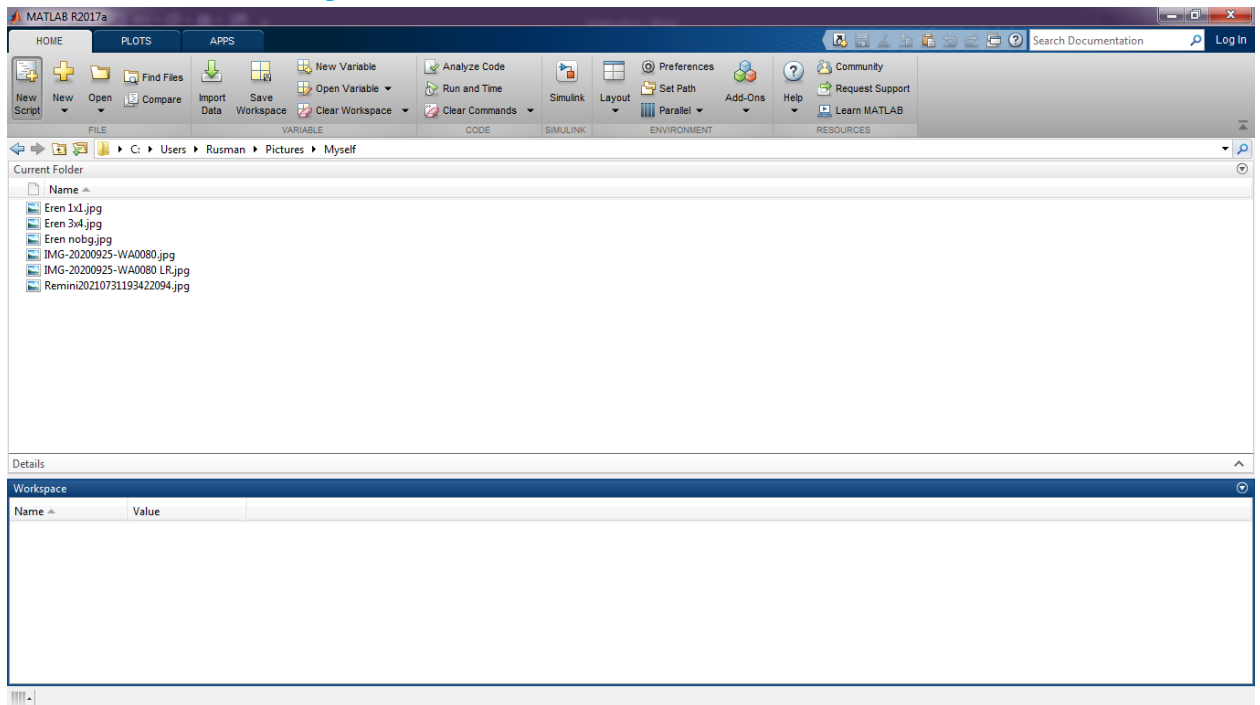
1. Buka aplikasi [Matlab](#).



2. Buka [folder](#) yang berisi foto yang akan kita gunakan.

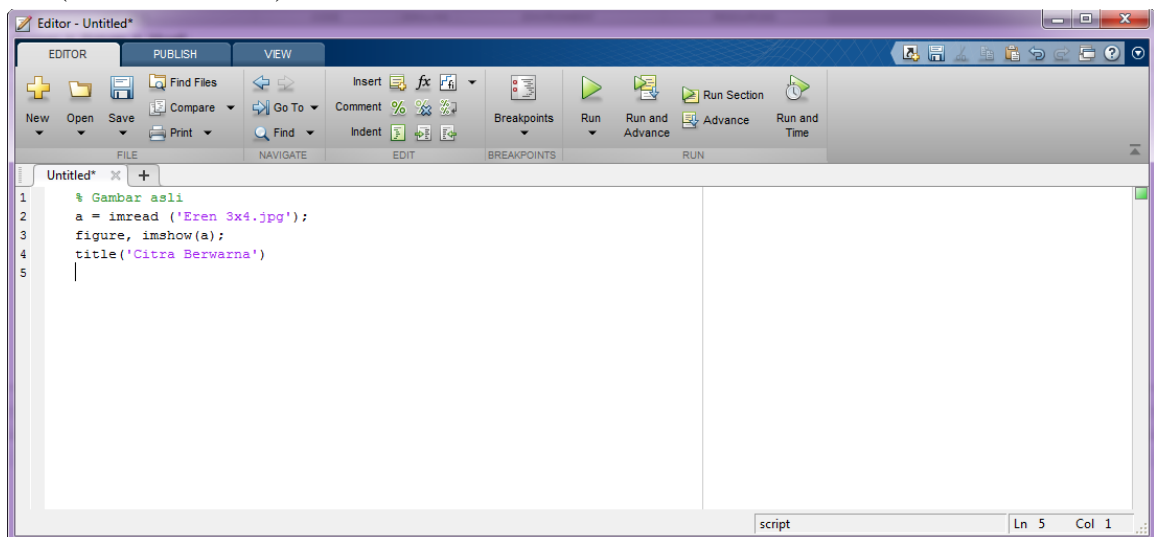


3. Kemudian klik **New Script** dan akan muncul **Editor** window.



4. Ketik **syntax** seperti dibawah ini untuk membuka gambar.

```
% Gambar asli  
a = imread ('Eren 3x4.jpg');  
figure(1), imshow(a);  
title('Citra Berwarna')
```



5. **Save File** dan jalankan program dengan klik **Run**.



6. Setelah membuka **Citra gambar asli**, sekarang kita bisa mengubahnya ke **Citra Keabuan**, **Citra Biner**, **Citra Kontras** dan **Citra Brightness**.

Ketik **syntax** dibawah:

% Keabuan

```
a_keabuan = 0.4 * a(:, :, 1) + 0.32 * a(:, :, 2) + 0.28 * a(:, :, 3);
```

```
figure(2), imshow(a_keabuan)
```

```
title('Citra Keabuan')
```

% Biner

```
a_biner = im2bw(a_keabuan, 0.5);
```

```
figure(3), imshow(a_biner)
```

```
title('Citra Biner')
```

```
% Kontras
```

```
kontras = 1.5;
```

```
a_kontras = a_keabuan * kontras;
```

```
figure(4), imshow(a_kontras)
```

```
title('Citra Kontras')
```

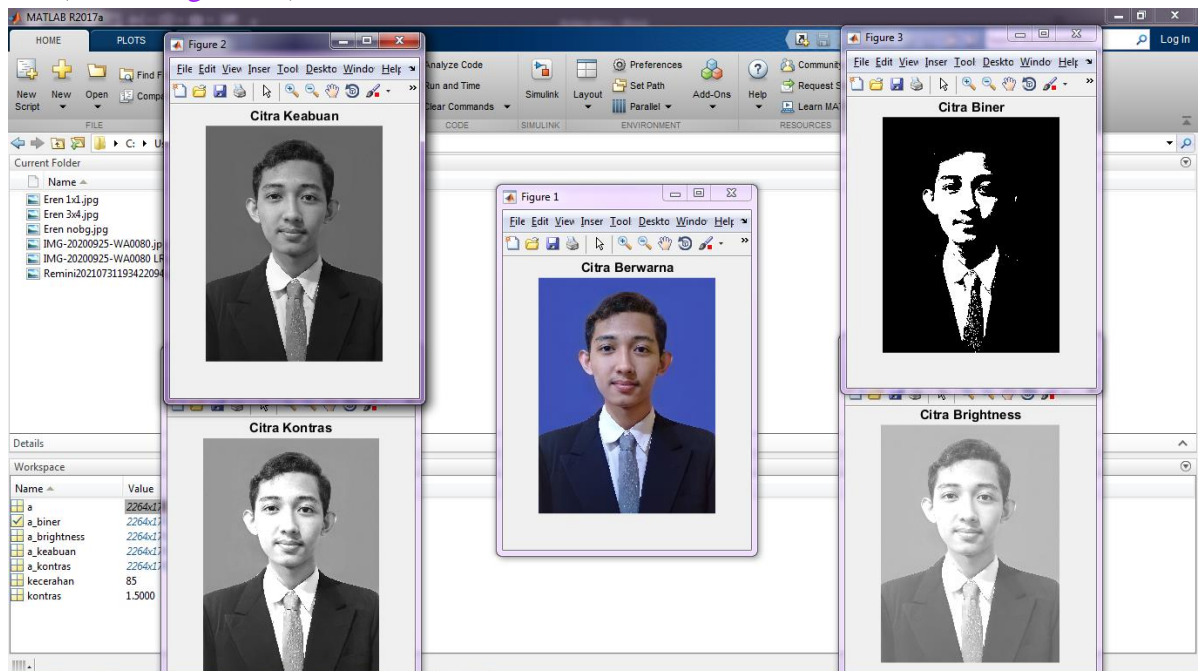
```
% Brightness
```

```
kecerahan = 85;
```

```
a_brightness = a_keabuan + kecerahan;
```

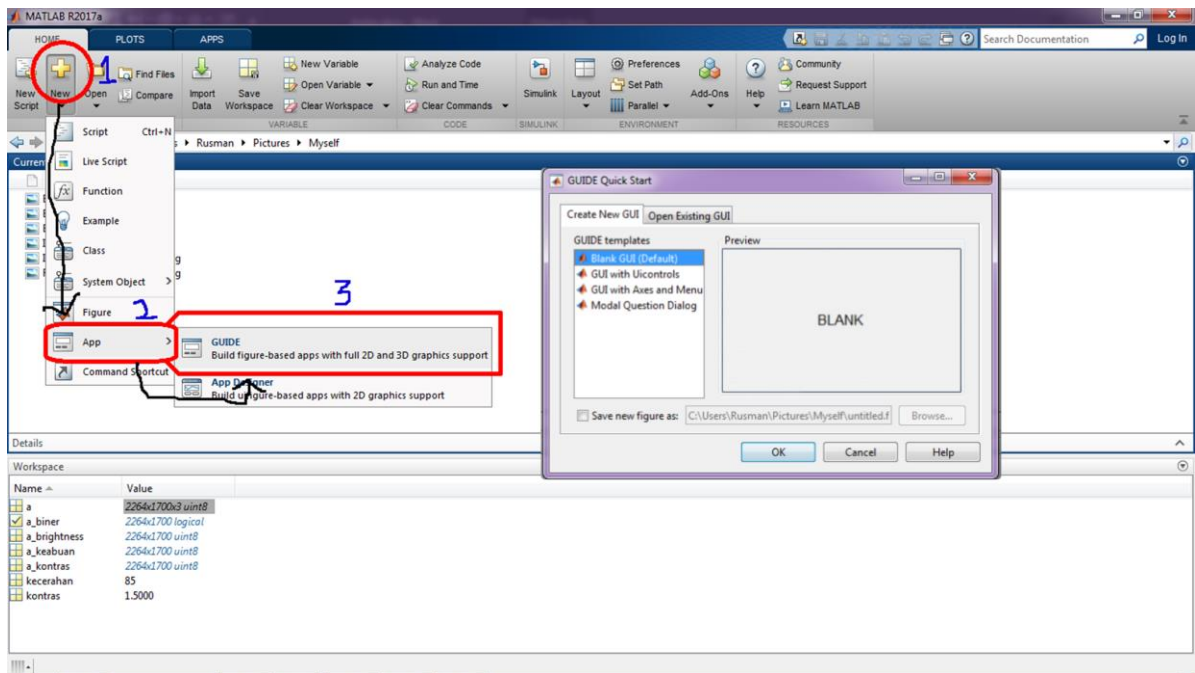
```
figure(5), imshow(a_brightness)
```

```
title('Citra Brightness')
```

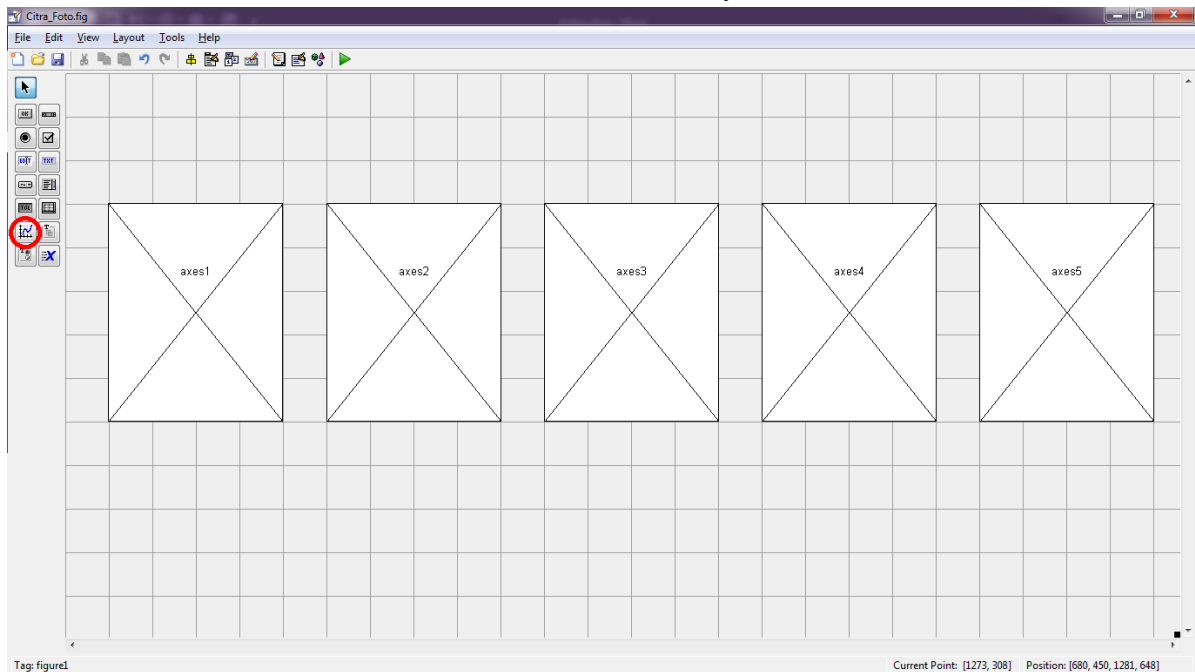


B. Membuat GUI

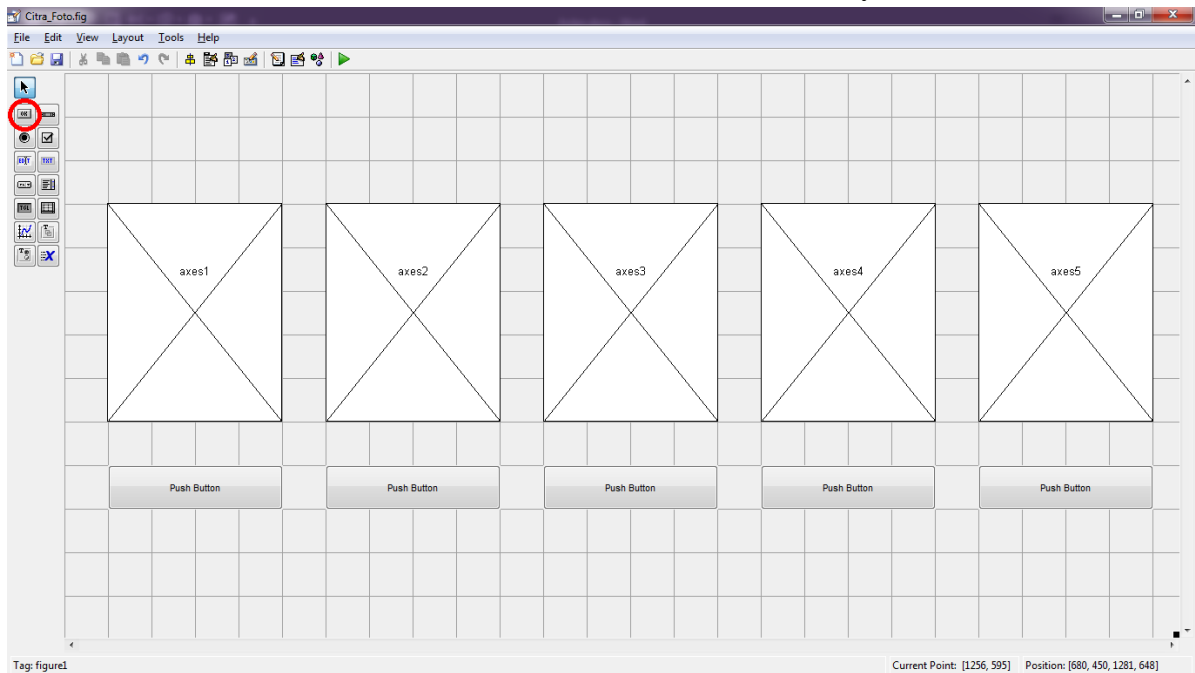
1. Klik **New > App > Guide**. Pilih menu **Create New GUI**, selanjutnya pilih **Blank GUI** lalu **OK**.



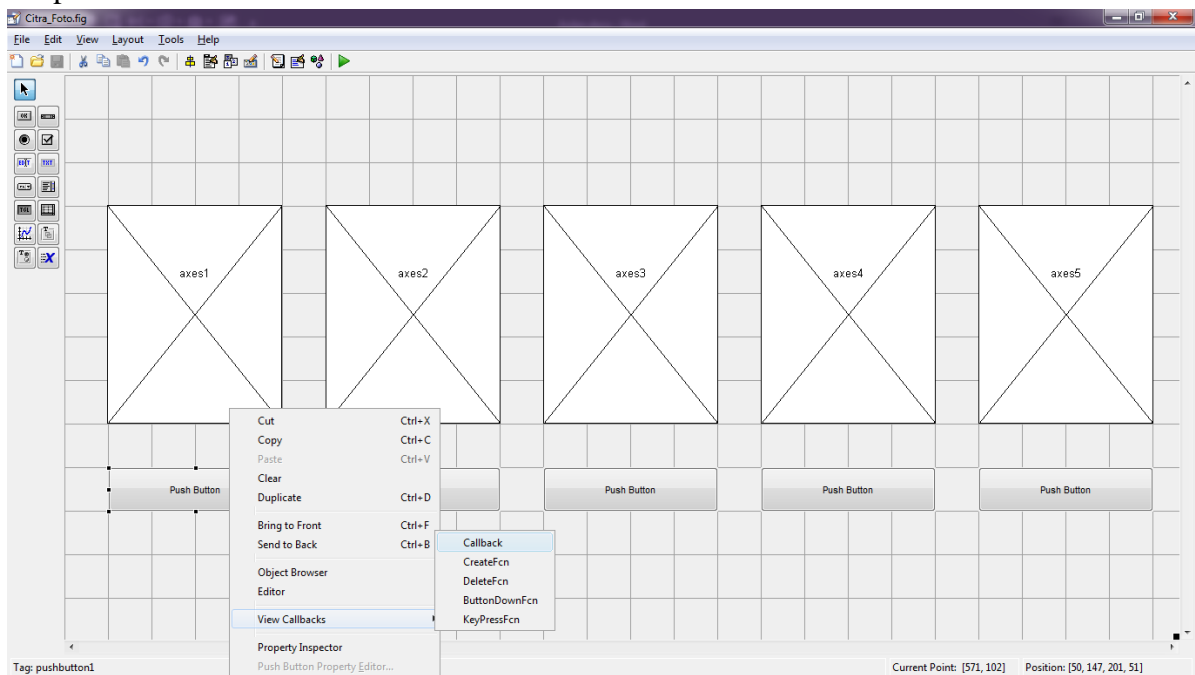
2. Pilih **Axes**, kemudian buat 5 kotak dan sesuaikan letaknya.



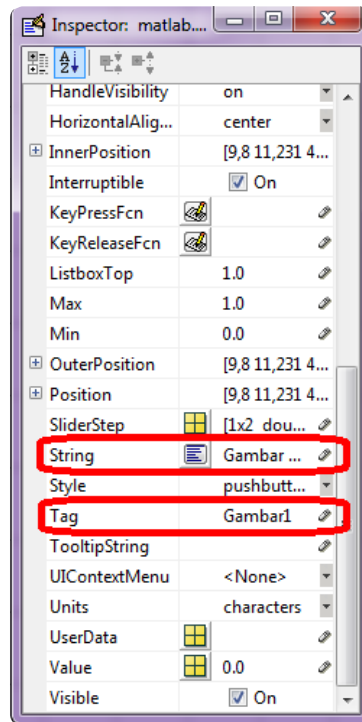
3. Pilih **Push Button** dan kemudian buat 5 kotak dan sesuaikan letaknya.



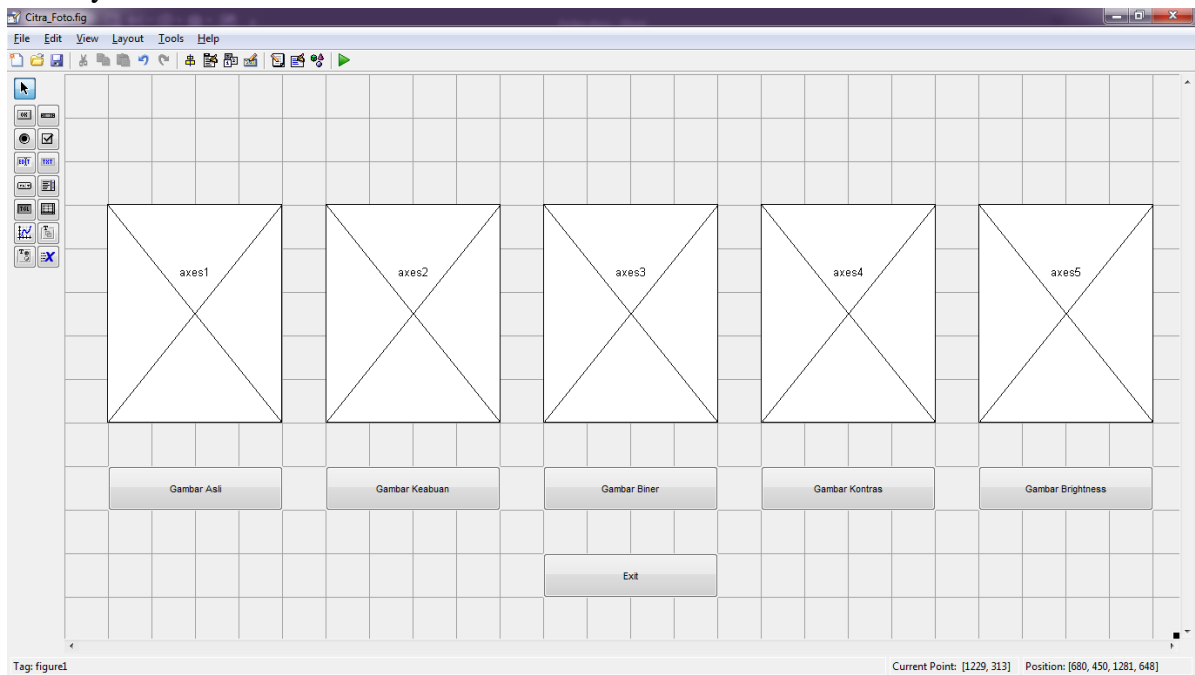
4. Klik kanan pada salah satu **Push Button** > klik **View Callbacks** > **Callback**, kemudian simpan file.



5. Buka Kembali **GUI** dan klik 2x pada **Push Button**, kemudian cari **String** dan ubah namanya sesuai kebutuhan (contoh: Gambar Asli), selanjutnya cari **Tag** kemudian ubah namanya (contoh: gambar1). Ulangi langkah ini pada **Push Button** yang lain.

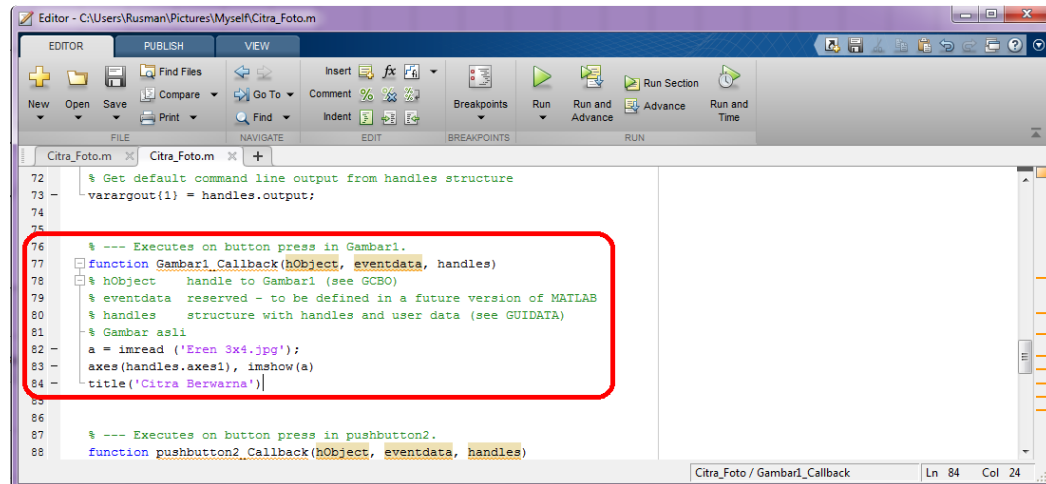


Hasilnya:



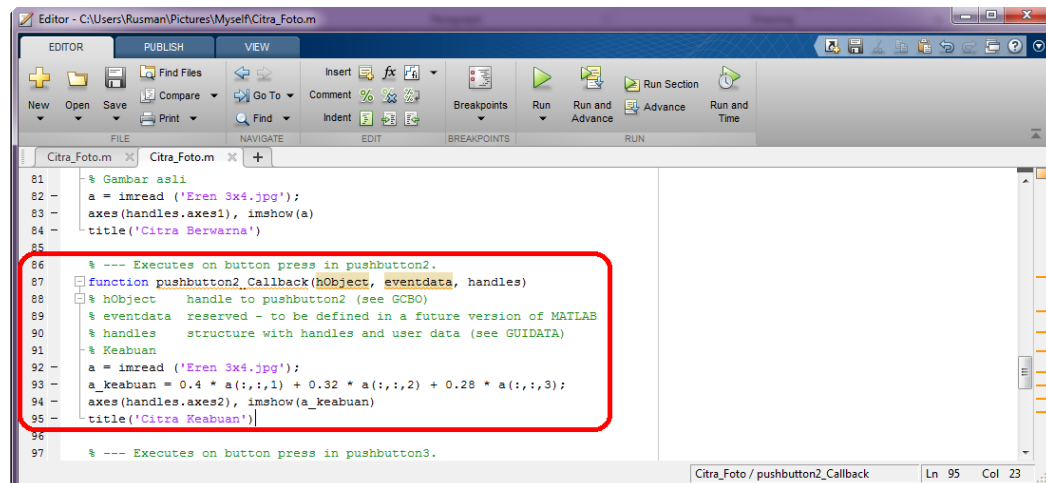
6. Selanjutnya masukkan syntax ke dalam GUI.

- Gambar Asli



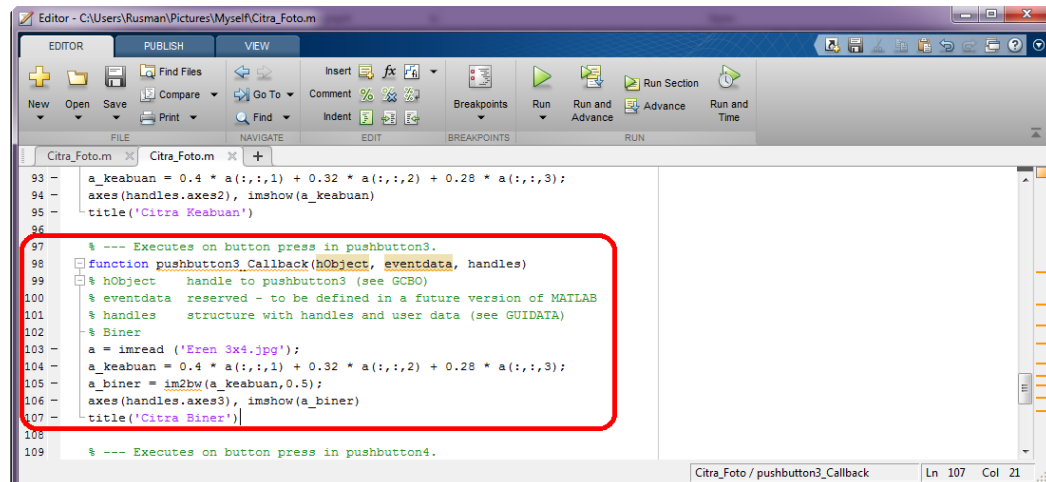
```
72 % Get default command line output from handles structure
73 varargin{1} = handles.output;
74
75
76 % --- Executes on button press in Gambar1.
77 function Gambar1_Callback(hObject, eventdata, handles)
78 % hObject handle to Gambar1 (see GCBO)
79 % eventdata reserved - to be defined in a future version of MATLAB
80 % handles structure with handles and user data (see GUIDATA)
81 % Gambar asli
82 a = imread('Eren 3x4.jpg');
83 axes(handles.axes1), imshow(a)
84 title('Citra Berwarna')
85
86 % --- Executes on button press in pushbutton2.
87 function pushbutton2_Callback(hObject, eventdata, handles)
```

- Gambar Keabuan



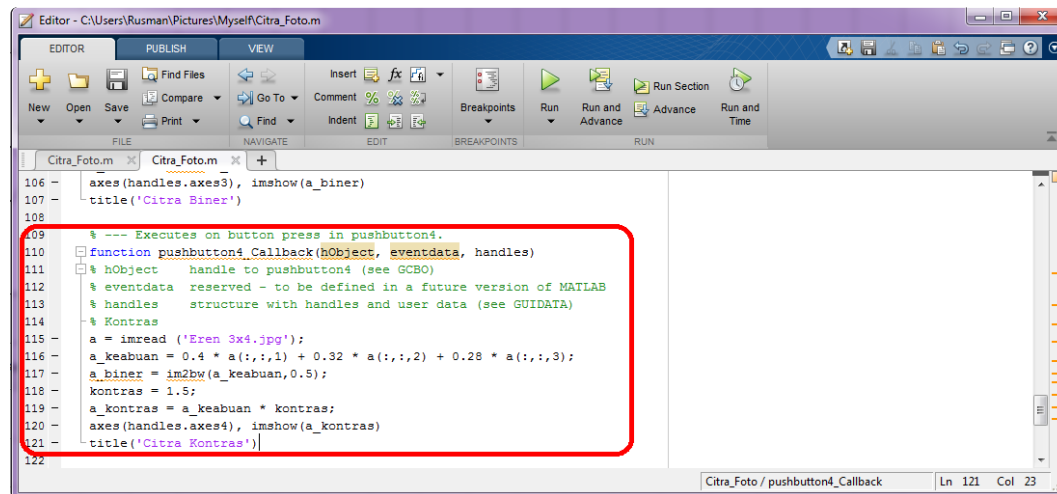
```
81 % Gambar asli
82 a = imread('Eren 3x4.jpg');
83 axes(handles.axes1), imshow(a)
84 title('Citra Berwarna')
85
86 % --- Executes on button press in pushbutton2.
87 function pushbutton2_Callback(hObject, eventdata, handles)
88 % hObject handle to pushbutton2 (see GCBO)
89 % eventdata reserved - to be defined in a future version of MATLAB
90 % handles structure with handles and user data (see GUIDATA)
91 % Keabuan
92 a = imread('Eren 3x4.jpg');
93 a_keabuan = 0.4 * a(:, :, 1) + 0.32 * a(:, :, 2) + 0.28 * a(:, :, 3);
94 axes(handles.axes2), imshow(a_keabuan)
95 title('Citra Keabuan')
96
97 % --- Executes on button press in pushbutton3.
```

- Gambar Biner



```
93 a_keabuan = 0.4 * a(:, :, 1) + 0.32 * a(:, :, 2) + 0.28 * a(:, :, 3);
94 axes(handles.axes2), imshow(a_keabuan)
95 title('Citra Keabuan')
96
97 % --- Executes on button press in pushbutton3.
98 function pushbutton3_Callback(hObject, eventdata, handles)
99 % hObject handle to pushbutton3 (see GCBO)
100 % eventdata reserved - to be defined in a future version of MATLAB
101 % handles structure with handles and user data (see GUIDATA)
102 % Biner
103 a = imread('Eren 3x4.jpg');
104 a_keabuan = 0.4 * a(:, :, 1) + 0.32 * a(:, :, 2) + 0.28 * a(:, :, 3);
105 a_biner = im2bw(a_keabuan, 0.5);
106 axes(handles.axes3), imshow(a_biner)
107 title('Citra Biner')
108
109 % --- Executes on button press in pushbutton4.
```

■ Gambar Kontras

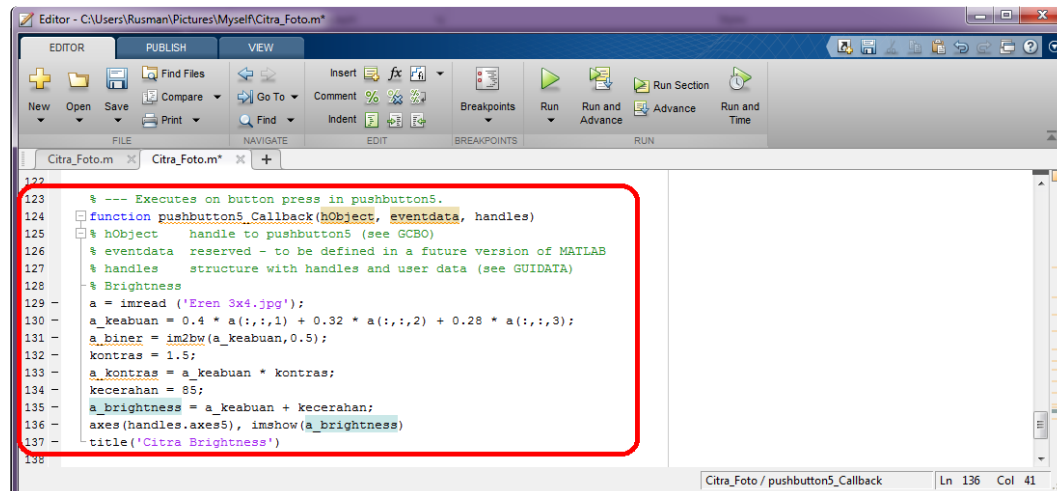


```

106 axes(handles.axes3), imshow(a_biner)
107 title('Citra Biner')
108
109 % --- Executes on button press in pushbutton4.
110 function pushbutton4_Callback(hObject, eventdata, handles)
111 % hObject handle to pushbutton4 (see GCBO)
112 % eventdata reserved - to be defined in a future version of MATLAB
113 % handles structure with handles and user data (see GUIDATA)
114 % Kontras
115 a = imread('Eren 3x4.jpg');
116 a_keabuan = 0.4 * a(:, :, 1) + 0.32 * a(:, :, 2) + 0.28 * a(:, :, 3);
117 a_biner = im2bw(a_keabuan, 0.5);
118 kontras = 1.5;
119 a_kontras = a_keabuan * kontras;
120 axes(handles.axes4), imshow(a_kontras)
121 title('Citra Kontras')
122

```

■ Gambar Brightness

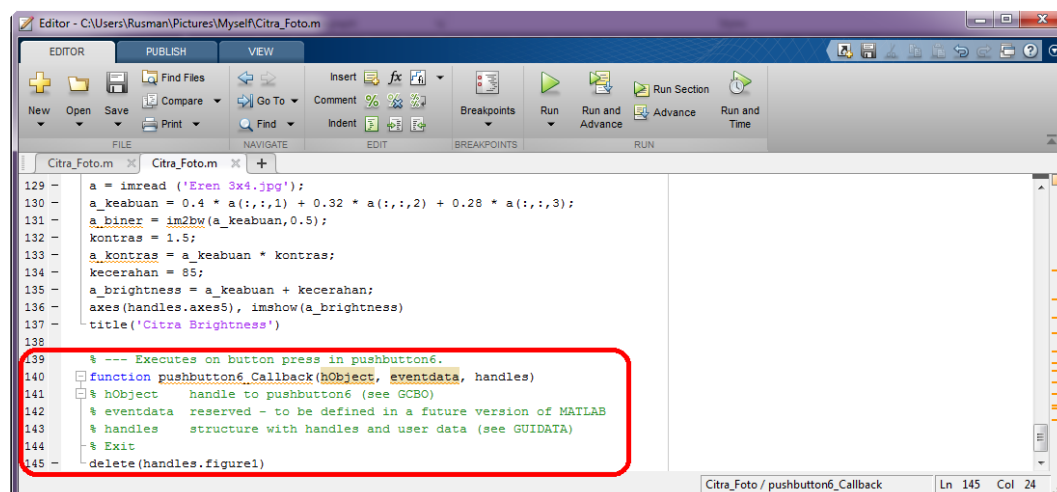


```

123 % --- Executes on button press in pushbutton5.
124 function pushbutton5_Callback(hObject, eventdata, handles)
125 % hObject handle to pushbutton5 (see GCBO)
126 % eventdata reserved - to be defined in a future version of MATLAB
127 % handles structure with handles and user data (see GUIDATA)
128 % Brightness
129 a = imread('Eren 3x4.jpg');
130 a_keabuan = 0.4 * a(:, :, 1) + 0.32 * a(:, :, 2) + 0.28 * a(:, :, 3);
131 a_biner = im2bw(a_keabuan, 0.5);
132 kontras = 1.5;
133 a_kontras = a_keabuan * kontras;
134 kecerahan = 85;
135 a_brightness = a_keabuan + kecerahan;
136 axes(handles.axes5), imshow(a_brightness)
137 title('Citra Brightness')
138

```

■ Tombol Exit

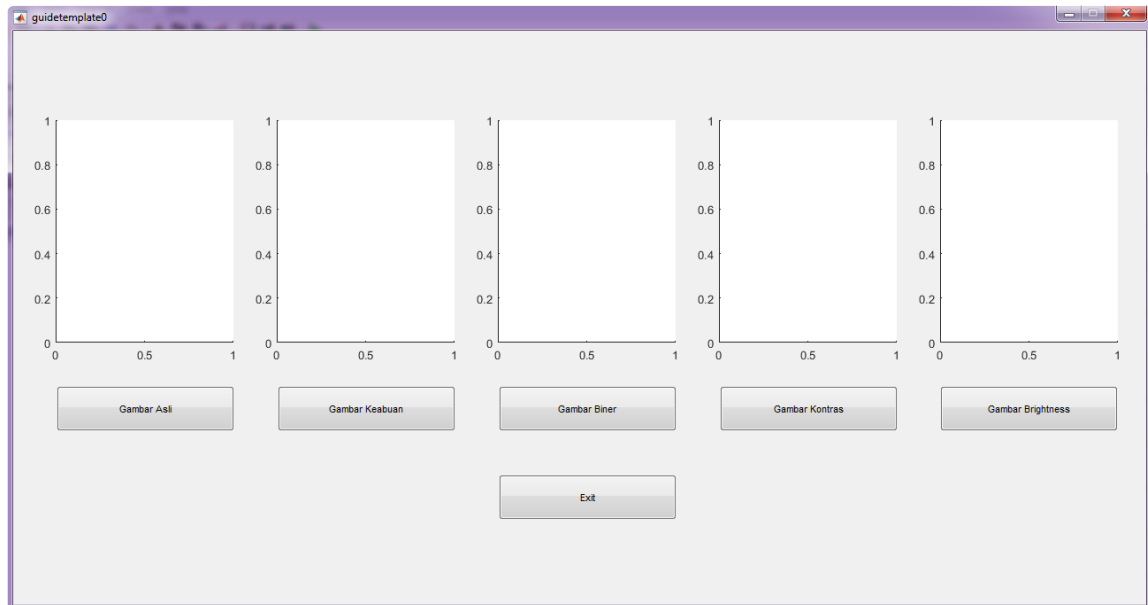


```

129 a = imread('Eren 3x4.jpg');
130 a_keabuan = 0.4 * a(:, :, 1) + 0.32 * a(:, :, 2) + 0.28 * a(:, :, 3);
131 a_biner = im2bw(a_keabuan, 0.5);
132 kontras = 1.5;
133 a_kontras = a_keabuan * kontras;
134 kecerahan = 85;
135 a_brightness = a_keabuan + kecerahan;
136 axes(handles.axes5), imshow(a_brightness)
137 title('Citra Brightness')
138
139 % --- Executes on button press in pushbutton6.
140 function pushbutton6_Callback(hObject, eventdata, handles)
141 % hObject handle to pushbutton6 (see GCBO)
142 % eventdata reserved - to be defined in a future version of MATLAB
143 % handles structure with handles and user data (see GUIDATA)
144 % Exit
145 delete(handles.figure1)

```

7. Setelah semua **syntax** selesai, klik **Run Figure** maka akan muncul tampilan **GUI** yang telah selesai.



8. Klik semua tombol yang ada pada **GUI** untuk memunculkan gambar, dan untuk keluar klik tombol **Exit**.

