TUGAS V

(PENGOLAHAN CITRA DIGITAL)

OLEH :

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PTIK-B

FAKULTAS TEKNIK

PENDIDIKAN TEKNIK INFORMATIKA DAN KOMPUTER

UNIVERSITAS NEGERI MAKASSSAR

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OPERASI GEOMETRI CITRA

Membuat Program Gui Matlab dengan Pengolahan Citra Berikut ini :

1. Penjumlahan
2. Pengurangan
3. Perkalian
4. Pembagian
5. Logika AND/NAND
6. Logika OR/NOR
7. Logika XOR/XNOR
8. Logika NOT
9. Operasi penskalaan
10. Operasi refleksi

Editor - C:\Users\Acer\Downloads\tugas5\GuiTugas_5.m

GuiTugas_5.m

```
function varargout = GuiTugas5(varargin)
% GUITUGAS5 MATLAB code for GuiTugas5.fig
%      GUITUGAS5, by itself, creates a new GUITUGAS5 or raises the existing
%      singleton*.
%
%      H = GUITUGAS5 returns the handle to a new GUITUGAS5 or the handle to
%      the existing singleton*.
%
%      GUITUGAS5('CALLBACK',hObject,eventData,handles,...) calls the local
%      function named CALLBACK in GUITUGAS5.M with the given input arguments.
%
%      GUITUGAS5('Property','Value',...) creates a new GUITUGAS5 or raises the
%      existing singleton*.  Starting from the left, property value pairs are
%      applied to the GUI before GuiTugas5_OpeningFcn gets called.  An
%      unrecognized property name or invalid value makes property application
%      stop.  All inputs are passed to GuiTugas5_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 GuiTugas5

% Last Modified by GUIDE v2.5 30-Sep-2021 01:04:51
```

```
26
27      % Begin initialization code - DO NOT EDIT
28 -    gui_Singleton = 1;
29 -    gui_State = struct('gui_Name',       mfilename, ...
30                         'gui_Singleton',  gui_Singleton, ...
31                         'gui_OpeningFcn', @GuiTugas5_OpeningFcn, ...
32                         'gui_OutputFcn',  @GuiTugas5_OutputFcn, ...
33                         'gui_LayoutFcn',  [] , ...
34                         'gui_Callback',   []);
35 -    if nargin && ischar(varargin{1})
36 -        gui_State.gui_Callback = str2func(varargin{1});
37 -    end
38
39 -    if nargout
40 -        [varargout{1:nargout}] = gui_mainfcn(gui_State, varargin{:});
41 -    else
42 -        gui_mainfcn(gui_State, varargin{:});
43 -    end
44      % End initialization code - DO NOT EDIT
45
46
47      % --- Executes just before GuiTugas5 is made visible.
48      function GuiTugas5_OpeningFcn(hObject, eventdata, handles, varargin)
49      % This function has no output args, see OutputFcn.
50      % hObject    handle to figure
51      % eventdata  reserved - to be defined in a future version of MATLAB
52      % handles    structure with handles and user data (see GUIDATA)
53      % varargin   command line arguments to GuiTugas5 (see VARARGIN)
54
55      % Choose default command line output for GuiTugas5
56 -    handles.output = hObject;
57
58      % Update handles structure
59 -    guidata(hObject, handles);
60
61 -    global a;
62 -    global b;
63
64 -    Image1 = imread('Taehyung1.jpeg');
65 -    Image2 = imread('Taehyung2.jpeg');
66
67 -    a = rgb2gray(Image1);
68 -    b = rgb2gray(Image2);
69
70 -    axes(handles.axes1);
71 -    imshow(a);
72
73 -    axes(handles.axes2);
74 -    imshow(b);
75
76      % UIWAIT makes GuiTugas5 wait for user response (see UIRESUME)
77      % uiwait(handles.figure1);
78
79
80      % --- Outputs from this function are returned to the command line.
81      function varargout = GuiTugas5_OutputFcn(hObject, eventdata, handles)
82      % varargout  cell array for returning output args (see VARARGOUT);
83      % hObject    handle to figure
84      % eventdata  reserved - to be defined in a future version of MATLAB
85      % handles    structure with handles and user data (see GUIDATA)
86
87      % Get default command line output from handles structure
88 -    varargout{1} = handles.output;
89
90
91      % --- PENJUMLAHAN
92      function pushbutton1_Callback(hObject, eventdata, handles)
93 -    global a;
94 -    axes(handles.axes3);
95 -    imshow(a + 125);
96
97
98      % --- PENGURANGAN
99      function pushbutton2_Callback(hObject, eventdata, handles)
100 -    global a;
```

```
101 -   axes(handles.axes3);
102 -   imshow(a - 90);
103
104
105     % --- PERKALIAN
106     function pushbutton3_Callback(hObject, eventdata, handles)
107 -   global a;
108 -   axes(handles.axes3);
109 -   imshow(a * 1.5);
110
111
112     % --- PEMBAGIAN
113     function pushbutton4_Callback(hObject, eventdata, handles)
114 -   global a;
115 -   axes(handles.axes3);
116 -   imshow(a / 2.5);
117
118
119     % --- LOGIKA OR/NOR
120     function pushbutton5_Callback(hObject, eventdata, handles)
121 -   global a;
122 -   global b;
123 -   axes(handles.axes1);
124 -   imshow(a);
125 -   axes(handles.axes2);
```

```
101 -   axes(handles.axes3);
102 -   imshow(a - 90);
103
104
105     % --- PERKALIAN
106     function pushbutton3_Callback(hObject, eventdata, handles)
107 -   global a;
108 -   axes(handles.axes3);
109 -   imshow(a * 1.5);
110
111
112     % --- PEMBAGIAN
113     function pushbutton4_Callback(hObject, eventdata, handles)
114 -   global a;
115 -   axes(handles.axes3);
116 -   imshow(a / 2.5);
117
118
119     % --- LOGIKA OR/NOR
120     function pushbutton5_Callback(hObject, eventdata, handles)
121 -   global a;
122 -   global b;
123 -   axes(handles.axes1);
124 -   imshow(a);
125 -   axes(handles.axes2);
```

```
153 -   axes(handles.axes2);
154 -   imshow(blacknwhite2);
155
156 -   k = blacknwhite1;
157 -   [kolom, baris] = size(k);
158
159 -   for x = 1 : kolom
160 -       for y = 1 : baris
161 -           if blacknwhite2(x,y) ~= 0
162 -               if k(x,y) == 0;
163 -                   k(x,y) = 1;
164 -               else
165 -                   k(x,y) = 0;
166 -               end
167 -           end
168 -       end
169 -   end
170
171 -   axes(handles.axes3);
172 -   imshow(k);
173
174
175     % --- LOGIKA AND/NAND
176     function pushbutton7_Callback(hObject, eventdata, handles)
177 -   global a;
```

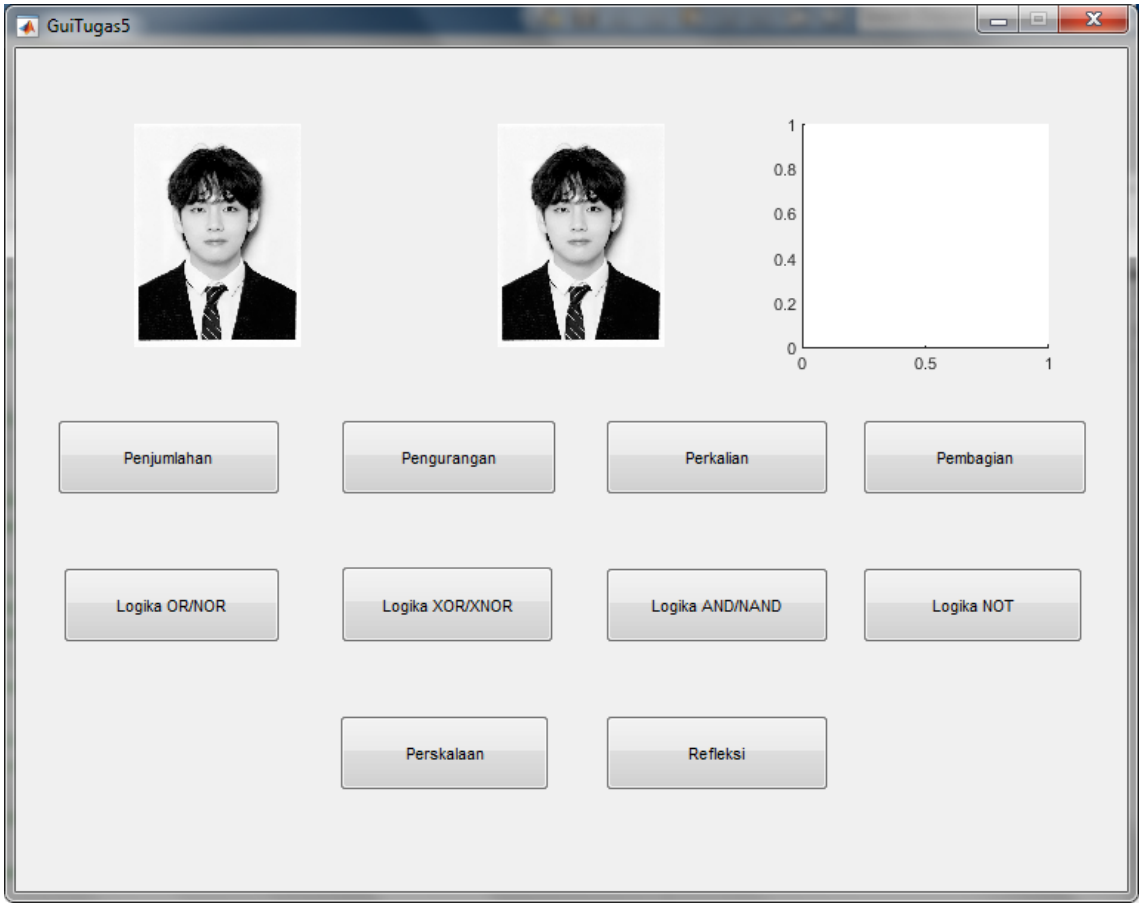
```
177 -   global a;
178 -   global b;
179
180 -   axes(handles.axes1);
181 -   imshow(a);
182
183 -   axes(handles.axes2);
184 -   imshow(b);
185
186 -   m = a;
187 -   [kolom, baris] = size(m);
188
189 -   for x = 1 : kolom
190 -       for y = 1 : baris
191 -           if b(x,y) ~= 0
192 -               m(x,y) = b(x,y);
193 -           end
194 -       end
195 -   end
196
197 -   axes(handles.axes3);
198 -   imshow(m);
199
200     % --- LOGIKA NOT
201     function pushbutton8_Callback(hObject, eventdata, handles)
```

```
202 -   global a;
203 -   global b;
204
205 -   blacknwhite1 = a > 100;
206 -   blacknwhite2 = b > 100;
207
208 -   axes(handles.axes1);
209 -   imshow(blacknwhite1);
210
211 -   axes(handles.axes2);
212 -   imshow(blacknwhite2);
213
214 -   n = blacknwhite1;
215 -   [kolom, baris] = size(n);
216
217 -   for x = 1 : kolom
218 -       for y = 1 : baris
219 -           if n(x,y) == 0
220 -               n(x,y) = 1;
221 -           else
222 -               n(x,y) = 0;
223 -           end
224 -       end
225 -   end
```

```
    axes(handles.axes3);
    imshow(n);

    % --- PERSKALAAN
function pushbutton9_Callback(hObject, eventdata,handles)
    global a;
    global b;

    axes(handles.axes1);
    imshow(a);
    axes(handles.axes2);
    imshow(b);

    [kolom, baris] = size(a);

    Ar = 1;
    Ra = 2;
    p = zeros(kolom, baris);

for x = 1 : kolom
    for y = 1 : baris
        x2 = x * Ar;
        y2 = y * Ra;
        p(x2, y2) = a(x,y);
    end
```

```
end

    axes(handles.axes3);
    imshow(uint8(p));


    % --- REFLEKSI
function pushbutton10_Callback(hObject, eventdata, handles)
    global a;
    global b;

    axes(handles.axes1);
    imshow(a);
    axes(handles.axes2);
    imshow(b);

    [kolom, baris] = size(a);
    q = zeros(kolom,baris);

for x = 1 : kolom
    for y = 1 : baris
        x2 = x;
        y2 = baris + 1 - y;
        q(x2,y2) = a(x,y);
    end
```

```
end

    axes(handles.axes3);
    imshow(uint8(q));
```


GuiTugas5
1
0.8
0.6
0.4
0.2
0
0
0.5
1
Penjumlahan
Pengurangan
Perkalian
Pembagian
Logika OR/NOR
Logika XOR/XNOR
Logika AND/NAND
Logika NOT
Perskalaan
Refleksi