

## Lampiran 1

### Source Code Program Diagnosa Osteoporosis

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

% Last Modified by GUIDE v2.5 04-Apr-2017 13:01:31

% Begin initialization code - DO NOT EDIT
gui_Singleton = 1;
gui_State = struct('gui_Name',       mfilename, ...
                  'gui_Singleton',  gui_Singleton, ...
                  'gui_OpeningFcn', @osteoporosis_OpeningFcn,
                  ...
                  'gui_OutputFcn',  @osteoporosis_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
% End initialization code - DO NOT EDIT

% --- Executes just before osteoporosis is made visible.
function osteoporosis_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 osteoporosis (see
VARARGIN)

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

% Update handles structure
guidata(hObject, handles);

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

% --- Outputs from this function are returned to the command
line.
function varargout = osteoporosis_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)
proyek=guidata(gcbo);
i1=imread('c:\sample3\vv1.jpg');
g1=rgb2gray(i1);
a1=imadjust(g1);
e1=edge(a1, 'canny');
pix2=bwarea(e1)/10^4 %menghitung jumlah piksel area
errorkolerasi=(pix2*0.05)/10^4
pix1=(pix2-errorkolerasi);

```

```

i=get(proyek.axes2,'Userdata');
g=rgb2gray(i);
a=imadjust(g);
e=edge(a,'canny')
pix=bwarea(e)/10^4
hasil=pix;

set(proyek.figure1,'CurrentAxes',proyek.axes6);
set(imshow(g));
set(proyek.figure1,'CurrentAxes',proyek.axes7);
set(imshow(e));

set(proyek.figure1,'CurrentAxes',proyek.axes3);
set(imshow(i1));
set(proyek.figure1,'CurrentAxes',proyek.axes4);
set(imshow(g1));
set(proyek.figure1,'CurrentAxes',proyek.axes5);
set(imshow(e1));

set(proyek.axes2,'Userdata');
if pix<pix1,set(proyek.diagnosa,'String','negatif osteoporosis')
else set(proyek.diagnosa,'String','osteoporosis'),end;

function umur_Callback(hObject, eventdata, handles)
% hObject    handle to umur (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of umur as text
%        str2double(get(hObject,'String')) returns contents of
umur as a double

% --- Executes during object creation, after setting all
properties.
function umur_CreateFcn(hObject, eventdata, handles)
% hObject    handle to umur (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    empty - handles not created until after all
CreateFcns called

% Hint: edit controls usually have a white background on Windows.
%        See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUiControlBackgroundColor'))

```

```
    set(hObject, 'BackgroundColor', 'white');
end
```

```
function jeniskelamin_Callback(hObject, eventdata, handles)
% hObject    handle to jeniskelamin (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject, 'String') returns contents of jeniskelamin
as text
%         str2double(get(hObject, 'String')) returns contents of
jeniskelamin as a double
```

```
% --- Executes during object creation, after setting all
properties.
```

```
function jeniskelamin_CreateFcn(hObject, eventdata, handles)
% hObject    handle to jeniskelamin (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    empty - handles not created until after all
CreateFcns called
```

```
% Hint: edit controls usually have a white background on Windows.
```

```
%         See ISPC and COMPUTER.
```

```
if ispc && isequal(get(hObject, 'BackgroundColor'),
get(0, 'defaultUicontrolBackgroundColor'))
    set(hObject, 'BackgroundColor', 'white');
end
```

```
function menopause_Callback(hObject, eventdata, handles)
% hObject    handle to menopause (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    structure with handles and user data (see GUIDATA)
```

```
% Hints: get(hObject, 'String') returns contents of menopause as
text
```

```
%         str2double(get(hObject, 'String')) returns contents of
menopause as a double
```

```
% --- Executes during object creation, after setting all
properties.
```

```
function menopause_CreateFcn(hObject, eventdata, handles)
% hObject    handle to menopause (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
```

```

% handles    empty - handles not created until after all
CreateFcns called

% Hint: edit controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end

function riwayat_Callback(hObject, eventdata, handles)
% hObject    handle to riwayat (see GCBO)
% eventdata reserved - to be defined in a future version of
MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of riwayat as
text
%       str2double(get(hObject,'String')) returns contents of
riwayat as a double

% --- Executes during object creation, after setting all
properties.
function riwayat_CreateFcn(hObject, eventdata, handles)
% hObject    handle to riwayat (see GCBO)
% eventdata reserved - to be defined in a future version of
MATLAB
% handles    empty - handles not created until after all
CreateFcns called

% Hint: edit controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end

function hasil_Callback(hObject, eventdata, handles)
% hObject    handle to hasil (see GCBO)
% eventdata reserved - to be defined in a future version of
MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of hasil as text
%       str2double(get(hObject,'String')) returns contents of
hasil as a double

```

```

% --- Executes during object creation, after setting all
properties.
function hasil_CreateFcn(hObject, eventdata, handles)
% hObject    handle to hasil (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    empty - handles not created until after all
CreateFcns called

% Hint: edit controls usually have a white background on Windows.
%         See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end

% --- Executes on button press in svm.
function svm_Callback(hObject, eventdata, handles)
% hObject    handle to svm (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    structure with handles and user data (see GUIDATA)

load svm
uji=[handles.umur handles.jeniskelamin handles.menopause]
uji1=svmclassify(y1,uji(:,1:2))

if uji1==0
uji2=svmclassify(y2,[uji(:,1) uji(:,3)])
if uji2==0
msgbox('osteoporosis pascamenopause')
else
msgbox('osteoporosis senilis')
end
else
uji3=svmclassify(y3,uji(:,2:3))
if uji3==1
msgbox('osteoporosis senilis')
else
msgbox('osteoporosis sekunder')
end
uji4=svmclassify(y4,uji(:,3:4))
if uji3==2
msgbox('osteoporosis sekunder')
else
msgbox('osteoporosis juvenil')
end
end

function diagnosa_Callback(hObject, eventdata, handles)
% hObject    handle to diagnosa (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    structure with handles and user data (see GUIDATA)

```

```

% Hints: get(hObject,'String') returns contents of diagnosa as
text
%         str2double(get(hObject,'String')) returns contents of
diagnosa as a double

% --- Executes during object creation, after setting all
properties.
function diagnosa_CreateFcn(hObject, eventdata, handles)
% hObject    handle to diagnosa (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    empty - handles not created until after all
CreateFcns called

% Hint: edit controls usually have a white background on Windows.
%         See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUiControlBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end

% -----
function file_Callback(hObject, eventdata, handles)
% hObject    handle to file (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    structure with handles and user data (see GUIDATA)

% -----
function open_Callback(hObject, eventdata, handles)
% hObject    handle to open (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    structure with handles and user data (see GUIDATA)
proyek=guidata(gcbo);
[namafile,direktori]=uigetfile({'*.jpg';'*.*'},'Buka Gambar');
i=imread(strcat(direktori,namafile));
g=rgb2gray(i);
set(proyek.figure1,'CurrentAxes',proyek.axes2);
set(imshow(i));
set(proyek.axes2,'Userdata',i);
set(proyek.figure1,'Userdata',i);

% -----
function save_Callback(hObject, eventdata, handles)
% hObject    handle to save (see GCBO)

```

```

% eventdata reserved - to be defined in a future version of
MATLAB
% handles structure with handles and user data (see GUIDATA)
proyek=guidata(gcbo);
[namafile,direktori]=uiputfile({'*.jpg';'*.*'},'Simpan Gambar');
n=get(proyek.axes7,'Userdata');
imwrite(n, strcat(direktori,namafile));

% -----
-----
function exit_Callback(hObject, eventdata, handles)
% hObject handle to exit (see GCBO)
% eventdata reserved - to be defined in a future version of
MATLAB
% handles structure with handles and user data (see GUIDATA)
close;

% -----
-----
function print_Callback(hObject, eventdata, handles)
% hObject handle to print (see GCBO)
% eventdata reserved - to be defined in a future version of
MATLAB
% handles structure with handles and user data (see GUIDATA)
printdlg;

% --- Executes during object deletion, before destroying
properties.
function uipanel1_DeleteFcn(hObject, eventdata, handles)
% hObject handle to uipanel1 (see GCBO)
% eventdata reserved - to be defined in a future version of
MATLAB
% handles structure with handles and user data (see GUIDATA)

% --- Executes on slider movement.
function slider1_Callback(hObject, eventdata, handles)
% hObject handle to slider1 (see GCBO)
% eventdata reserved - to be defined in a future version of
MATLAB
% handles structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'Value') returns position of slider
% get(hObject,'Min') and get(hObject,'Max') to determine
range of slider

% --- Executes during object creation, after setting all
properties.
function slider1_CreateFcn(hObject, eventdata, handles)
% hObject handle to slider1 (see GCBO)

```



```

% eventdata reserved - to be defined in a future version of
MATLAB
% handles empty - handles not created until after all
CreateFcns called

% Hint: slider controls usually have a light gray background.
if isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor',[.9 .9 .9]);
end

% --- Executes during object creation, after setting all
properties.
function axes9_CreateFcn(hObject, eventdata, handles)
% hObject handle to axes9 (see GCBO)
% eventdata reserved - to be defined in a future version of
MATLAB
% handles empty - handles not created until after all
CreateFcns called
axes(hObject)
imshow('dj.PNG')

% Hint: place code in OpeningFcn to populate axes9

% --- Executes during object creation, after setting all
properties.
function axes10_CreateFcn(hObject, eventdata, handles)
% hObject handle to axes10 (see GCBO)
% eventdata reserved - to be defined in a future version of
MATLAB
% handles empty - handles not created until after all
CreateFcns called
axes(hObject)
imshow('AM.PNG')

% Hint: place code in OpeningFcn to populate axes10

% --- Executes during object creation, after setting all
properties.
function axes11_CreateFcn(hObject, eventdata, handles)
% hObject handle to axes11 (see GCBO)
% eventdata reserved - to be defined in a future version of
MATLAB
% handles empty - handles not created until after all
CreateFcns called
axes(hObject)
imshow('dj.PNG')

% Hint: place code in OpeningFcn to populate axes11

```