LAMPIRAN A

LIST PROGRAM PADA MATLAB

1. Program Pembentukan Database Citra Referensi

```
clear;
close all;
clc;

nClassTotal=10;
nMemberClassTotal=5;
Ekt='.jpg';
sample='-IMG-';
GdirAsal='C:\Program Files\MATLAB\R2010b\citra\Database\';

ListFile=[];
for KelasKe=1:nClassTotal;
    for GambarKe=1:nMemberClassTotal
        if KelasKe<10
            if GambarKe<10
                NamaFile=['0' num2str(KelasKe) sample '0'
num2str(GambarKe)]
            else
                NamaFile=['0' num2str(KelasKe) sample
num2str(GambarKe)]
            end
        else
            if GambarKe<10
                NamaFile=[num2str(KelasKe) sample '0'
num2str(GambarKe)]
            else
                NamaFile=[num2str(KelasKe) sample num2str(GambarKe)]
            end
        end
        NamaFile=[GdirAsal NamaFile Ekt];
        vein=imread(NamaFile);
        vein=imresize(vein,[120 120])
        CitraLatih=rgb2gray(vein);
        CitraLatih=im2double(CitraLatih);
        T=dctmtx(8);
        dct=@(block_struct) T*block_struct.data*T';
        CitraLatih=blockproc(CitraLatih,[8 8],dct);
        for X=1:15
            for Y=1:15
                U=(X-1)*8;V=(Y-1)*8;
                U=U+1;V=V+1
                Fitur(X,Y)=CitraLatih(U,V)
            end;
         end;
        VektorFitur=Fitur;
        x=VektorFitur;
        d=1;
        for i=1:15
```

```
            for j=1:15
                temp(1,d)=x(i,j)
                d=d+1
            end
        end
        VektorFitur=temp
        ListFile=[ListFile ; VektorFitur];
    end;
end;
ListFileInd=ListFile;
save 'C:\Program Files\MATLAB\R2010b\citra\ListFileInd' ListFileInd;
```

2. Program Pengujian

```
close all;
clear all;
clc;

load ListFileInd.mat
masuk=input('Nama File Uji:','s');
masuk=[masuk,'.jpg'];
CitraUji=imread(masuk);
CitraUji=imresize(CitraUji,[120 120])
figure;imshow(CitraUji);title('Citra yang diuji');
CitraUji=rgb2gray(CitraUji);
CitraUji=im2double(CitraUji);
T=matdct(8);
dct=@(block_struct) T*block_struct.data*T';
CitraUji=blockproc(CitraUji,[8 8],dct);
for X=1:15
    for Y=1:15
        U=(X-1)*8;V=(Y-1)*8;
        U=U+1;V=V+1
        FiturUji(X,Y)=CitraUji(U,V)
     end;
end;
VektorFiturUji=FiturUji;
x=VektorFiturUji;
d=1;
for i=1:15
   for j=1:15
       temp(1,d)=x(i,j)
       d=d+1
    end
end
VektorFiturUji=temp

for klaster=1:50
    d(klaster)=sqrt(sum((ListFileInd(klaster,:)-VektorFiturUji).^2))
```

```
        if klaster==1
            dmin=d(klaster);
            din=klaster;
        end
        if(klaster>1)&&(dmin>d(klaster))
            dmin=d(klaster);
            din=klaster;
        end
    end
 if dmin > 5
    acc=imread('TidakDikenali.jpg')
    figure;imshow(acc)
else
    sample='-IMG-'
  if din<=5
     NamaFile=['0' num2str(1) sample '0' num2str((din-1)+1),'.jpg']
     Pengenalan=imread(NamaFile)
     figure;imshow(Pengenalan);
     title('Gambar hasil pengenalan dari gambar uji')
  end
  if (din>5) && (din<=10)
     NamaFile=['0' num2str(2) sample '0' num2str((din-6)+1),'.jpg']
     Pengenalan=imread(NamaFile)
     figure;imshow(Pengenalan);
     title('Gambar hasil pengenalan dari gambar uji')
   end
   if (din>10) && (din<=15)
     NamaFile=['0' num2str(3) sample '0' num2str((din-11)+1),'.jpg']
     Pengenalan=imread(NamaFile)
     figure;imshow(Pengenalan);
     title('Gambar hasil pengenalan dari gambar uji')
   end
   if (din>15) && (din<=20)
     NamaFile=['0' num2str(4) sample '0' num2str((din-16)+1),'.jpg']
     Pengenalan=imread(NamaFile)
     figure;imshow(Pengenalan);
     title('Gambar hasil pengenalan dari gambar uji')
   end
   if (din>20) && (din<=25)
     NamaFile=['0' num2str(5) sample '0' num2str((din-21)+1),'.jpg']
     Pengenalan=imread(NamaFile)
     figure;imshow(Pengenalan);
     title('Gambar hasil pengenalan dari gambar uji')
   end
   if (din>25) && (din<=30)
     NamaFile=['0' num2str(6) sample '0' num2str((din-26)+1),'.jpg']
     Pengenalan=imread(NamaFile)
     figure;imshow(Pengenalan);
     title('Gambar hasil pengenalan dari gambar uji')
   end
   if (din>30) && (din<=35)
     NamaFile=['0' num2str(7) sample '0' num2str((din-31)+1),'.jpg']
```

```
      Pengenalan=imread(NamaFile)
      figure;imshow(Pengenalan);
      title('Gambar hasil pengenalan dari gambar uji')
    end
    if (din>35) && (din<=40)
      NamaFile=['0' num2str(8) sample '0' num2str((din-36)+1),'.jpg']
      Pengenalan=imread(NamaFile)
      figure;imshow(Pengenalan);
      title('Gambar hasil pengenalan dari gambar uji')
    end
    if (din>40) && (din<=45)
      NamaFile=['0' num2str(9) sample '0' num2str((din-41)+1),'.jpg']
      Pengenalan=imread(NamaFile)
      figure;imshow(Pengenalan);
      title('Gambar hasil pengenalan dari gambar uji')
    end
    if (din>45) && (din<=50)
      NamaFile=[num2str(10) sample '0' num2str((din-46)+1),'.jpg']
      Pengenalan=imread(NamaFile)
      figure;imshow(Pengenalan);
      title('Gambar hasil pengenalan dari gambar uji')
     end
end
```

3. Program GUI untuk Pengujian

```
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)

load ListFileInd.mat
CitraUji=handles.img;
T=dctmtx(8);
dct=@(block_struct) T*block_struct.data*T';
CitraUji=blockproc(CitraUji,[8 8],dct);
for X=1:15
    for Y=1:15
        U=(X-1)*8;V=(Y-1)*8;
        U=U+1;V=V+1
        FiturUji(X,Y)=CitraUji(U,V)
     end;
end;
VektorFiturUji=FiturUji;
x=VektorFiturUji;
d=1;
for i=1:15
   for j=1:15
       temp(1,d)=x(i,j)
       d=d+1
```

```
    end
end
VektorFiturUji=temp
    for klaster=1:50
        d(klaster)=sqrt(sum((ListFileInd(klaster,:)-
VektorFiturUji).^2))
        if klaster==1
            dmin=d(klaster);
            din=klaster;
        end
        if(klaster>1)&&(dmin>d(klaster))
            dmin=d(klaster);
            din=klaster;
        end
    end
    nilai_slider=handles.slide;
    if dmin > nilai_slider
     acc=imread('TidakDikenali.jpg')
     axes(handles.axes2)
     imshow(acc)
     set(handles.edit3,'string',dmin)
     set(handles.edit4,'string','Tidak_Dikenali')
    else
     sample='-IMG-'
    if din<=5
       NamaFile=['0' num2str(1) sample '0' num2str((din-
1)+1),'.jpg']
       Pengenalan=imread(NamaFile)
       axes(handles.axes2)
       imshow(Pengenalan)
       set(handles.edit2,'string',NamaFile)
       set(handles.edit3,'string',dmin)
       set(handles.edit4,'string','Dikenali')
    end
    if (din>5) && (din<=10)
       NamaFile=['0' num2str(2) sample '0' num2str((din-
6)+1),'.jpg']
       Pengenalan=imread(NamaFile)
       axes(handles.axes2)
       imshow(Pengenalan)
       set(handles.edit2,'string',NamaFile)
       set(handles.edit3,'string',dmin)
       set(handles.edit4,'string','Dikenali')
    end
    if (din>10) && (din<=15)
       NamaFile=['0' num2str(3) sample '0' num2str((din-
11)+1),'.jpg']
       Pengenalan=imread(NamaFile)
       axes(handles.axes2)
       imshow(Pengenalan)
       set(handles.edit2,'string',NamaFile)
       set(handles.edit3,'string',dmin)
```

```
        set(handles.edit4,'string','Dikenali')
    end
     if (din>15) && (din<=20)
       NamaFile=['0' num2str(4) sample '0' num2str((din-
16)+1),'.jpg']
       Pengenalan=imread(NamaFile)
       axes(handles.axes2)
       imshow(Pengenalan)
       set(handles.edit2,'string',NamaFile)
       set(handles.edit3,'string',dmin)
       set(handles.edit4,'string','Dikenali')
     end
     if (din>20) && (din<=25)
       NamaFile=['0' num2str(5) sample '0' num2str((din-
21)+1),'.jpg']
       Pengenalan=imread(NamaFile)
       axes(handles.axes2)
       imshow(Pengenalan)
       set(handles.edit2,'string',NamaFile)
       set(handles.edit3,'string',dmin)
       set(handles.edit4,'string','Dikenali')
     end
     if (din>25) && (din<=30)
       NamaFile=['0' num2str(6) sample '0' num2str((din-
26)+1),'.jpg']
       Pengenalan=imread(NamaFile)
       axes(handles.axes2)
       imshow(Pengenalan)
       set(handles.edit2,'string',NamaFile)
       set(handles.edit3,'string',dmin)
       set(handles.edit4,'string','Dikenali')
     end
      if (din>30) && (din<=35)
       NamaFile=['0' num2str(7) sample '0' num2str((din-
31)+1),'.jpg']
       Pengenalan=imread(NamaFile)
       axes(handles.axes2)
       imshow(Pengenalan)
       set(handles.edit2,'string',NamaFile)
       set(handles.edit3,'string',dmin)
       set(handles.edit4,'string','Dikenali')
      end
      if (din>35) && (din<=40)
       NamaFile=['0' num2str(8) sample '0' num2str((din-
36)+1),'.jpg']
       Pengenalan=imread(NamaFile)
       axes(handles.axes2)
       imshow(Pengenalan)
       set(handles.edit2,'string',NamaFile)
       set(handles.edit3,'string',dmin)
       set(handles.edit4,'string','Dikenali')
     end
```

```
     if (din>40) && (din<=45)
       NamaFile=['0' num2str(9) sample '0' num2str((din-
41)+1),'.jpg']
       Pengenalan=imread(NamaFile)
       axes(handles.axes2)
       imshow(Pengenalan)
       set(handles.edit2,'string',NamaFile)
       set(handles.edit3,'string',dmin)
       set(handles.edit4,'string','Dikenali')
     end
      if (din>45) && (din<=50)
       NamaFile=[num2str(10) sample '0' num2str((din-46)+1),'.jpg']
       Pengenalan=imread(NamaFile)
       axes(handles.axes2)
       imshow(Pengenalan)
       set(handles.edit2,'string',NamaFile)
       set(handles.edit3,'string',dmin)
       set(handles.edit4,'string','Dikenali')
      end
    end


% --- 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)
[x y]=uigetfile('*.jpg');
imagex=imread(fullfile(y,x));
imagex=imresize(imagex,[120 120])
imagex=rgb2gray(imagex)
imagex=im2double(imagex)
axes(handles.axes1)
imshow(imagex)
set(handles.edit5,'string',x)
handles.img=imagex;
guidata(hObject,handles)


% --- Executes on button press in pushbutton4.
function pushbutton4_Callback(hObject, eventdata, handles)
% hObject    handle to pushbutton4 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)
fig = handles.figure1;
close(fig)


function edit2_Callback(hObject, eventdata, handles)
% hObject    handle to edit2 (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 edit2 as text
%        str2double(get(hObject,'String')) returns contents of edit2
as a double


% --- Executes during object creation, after setting all properties.
function edit2_CreateFcn(hObject, eventdata, handles)
% hObject    handle to edit2 (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 edit3_Callback(hObject, eventdata, handles)
% hObject    handle to edit3 (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 edit3 as text
%        str2double(get(hObject,'String')) returns contents of edit3
as a double


% --- Executes during object creation, after setting all properties.
function edit3_CreateFcn(hObject, eventdata, handles)
% hObject    handle to edit3 (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 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)
slider_value=get(handles.slider1,'value')
set(handles.slider1,'value');
nilai_slider=round(get(handles.slider1,'value'));
set(handles.edit1,'string',num2str(nilai_slider));
handles.slide=nilai_slider;
guidata(hObject,handles)
% 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


function edit1_Callback(hObject, eventdata, handles)
% hObject    handle to edit1 (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 edit1 as text
%        str2double(get(hObject,'String')) returns contents of edit1
as a double


% --- Executes during object creation, after setting all properties.
function edit1_CreateFcn(hObject, eventdata, handles)
% hObject    handle to edit1 (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 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)
close(gcbf)
GUITA



function edit4_Callback(hObject, eventdata, handles)
% hObject    handle to edit4 (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 edit4 as text
%        str2double(get(hObject,'String')) returns contents of edit4
as a double


% --- Executes during object creation, after setting all properties.
function edit4_CreateFcn(hObject, eventdata, handles)
% hObject    handle to edit4 (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 edit5_Callback(hObject, eventdata, handles)
% hObject    handle to edit5 (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 edit5 as text
%        str2double(get(hObject,'String')) returns contents of edit5
as a double
```

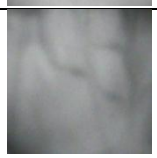
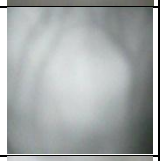
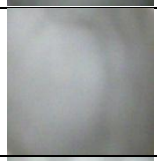
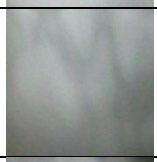
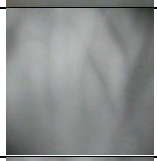
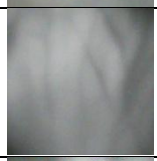
```
% --- Executes during object creation, after setting all properties.
function edit5_CreateFcn(hObject, eventdata, handles)
% hObject    handle to edit5 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
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
```

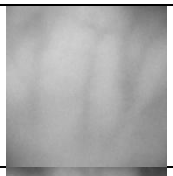
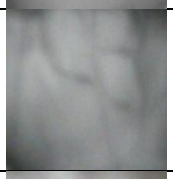
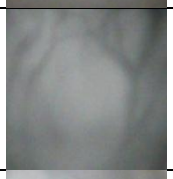
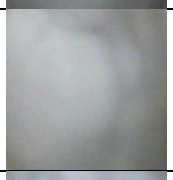
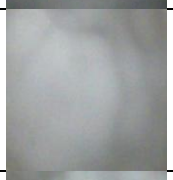
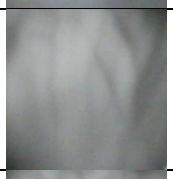
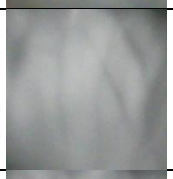
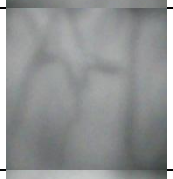
LAMPIRAN B

KUMPULAN CITRA

1. Citra Referensi

Citra Ke / Orang Ke	01	02	03	04	05
01					
02					
03					
04					
05					
06					
07					
08					
09					
10					

2. Citra uji dari individu yang ada dalam database

Citra Ke / Orang Ke	06	07	08
01			
02			
03			
04			
05			
06			
07			
08			
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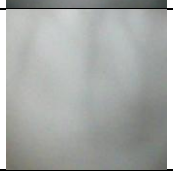
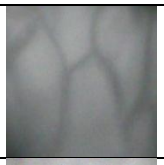
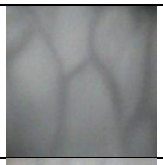
10			

3. Citra uji dari individu yang tidak ada dalam database

Citra Ke / Orang Ke	01	02	03
11			
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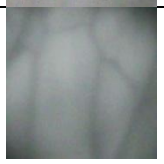
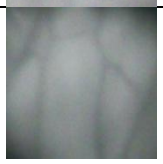
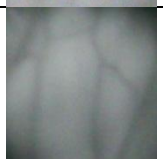
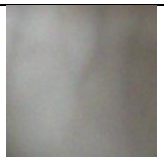
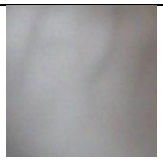
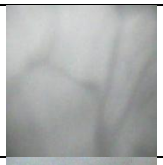
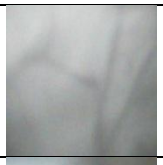
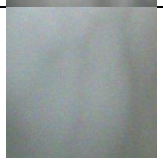
13			
14			
15			
16			
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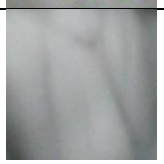
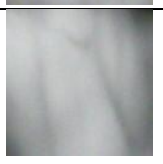
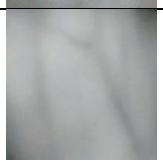
18			
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