

LAMPIRAN

```

fid = fopen('Hasil_fiturAll-baru.txt','wt');
%% cetak hasil
fprintf(fid,'%i\t',N);
fprintf(fid,'%s\t',filenames(N).name);
fprintf(fid,'%f\t',RAPSV);
fprintf(fid,'%f\t',DUA);
fprintf(fid,'\n');
fclose(fid)

```

Kode program 4.1 *Source Code* untuk mengeluarkan data fitur

```

image_folder = image_folder = 'D:\kuliah\semester
7\skripsi\Kayu\Kayu\Agathis';
filenames = dir(fullfile(image_folder, '*.jpg')); %file jpg atau tif
%% perulangan sejumlah citra yg ada dlm image_folder
total_images = numel(filenames)
% figure,
for N = 1:total_images
% for N = 1:3
full_name = fullfile(image_folder, filenames(N).name);
Img = imread(full_name);
a=Img;
end
end
end

```

Kode program 4.2 *Source Code* untuk membaca file di .m file

```

function OpenFileButtonPushed(app, event)
[nama_file,nama_folder] = uigetfile ('*.jpg');
drawnow
figure(app.UIFigure)
if ~isequal(nama_file,0)

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        b = im2double (imread(fullfile(nama_folder,nama_file)));
        %Menampilkan gambar
        imshow (b,'parent',app.UIAxes)
        title(app.UIAxes,'Citra Asli')
        %menampilkan nama gambar
        app.EditField_2.Value = nama_file;
        app.Property.b = b;

    end

```

Kode program 4.3 *Source Code* untuk membaca file di GUI

```

classdef app2neww < matlab.apps.AppBase
    % Properties that correspond to app components
    properties (Access = public)
        UIFigure matlab.ui.Figure
        NamaFileLabel matlab.ui.control.Label
        PreprocessingButton matlab.ui.control.Button
        EditField_2 matlab.ui.control.EditField
        HasilEkstraksiFiturGLCMPanel matlab.ui.container.Panel
        CiriEntropiEditField matlab.ui.control.EditField
        CiriEntropiEditFieldLabel matlab.ui.control.Label
        CiriIDMEditField matlab.ui.control.EditField
        CiriIDMEditFieldLabel matlab.ui.control.Label
        CiriVariansEditField matlab.ui.control.EditField
        CiriVariansEditFieldLabel matlab.ui.control.Label
        CiriCorelationEditField matlab.ui.control.EditField
        CiriCorelationEditFieldLabel matlab.ui.control.Label
        CiriContrasEditField matlab.ui.control.EditField
        CiriContrasEditFieldLabel matlab.ui.control.Label
        CiriASMEditField matlab.ui.control.EditField
        CiriASMEditFieldLabel matlab.ui.control.Label
        GLCMBButton matlab.ui.control.Button
        RAPSVBButton matlab.ui.control.Button
        OpenFileButton matlab.ui.control.Button
        HasilEkstraksiFiturRAPSVPanel matlab.ui.container.Panel
        CiriFiturRAPSVEditField matlab.ui.control.EditField
        CiriFiturRAPSVEditFieldLabel matlab.ui.control.Label
        EditField matlab.ui.control.EditField
        UIAxes_2 matlab.ui.control.UIAxes
        UIAxes matlab.ui.control.UIAxes
    end

```

```

end
properties (Access = public)
    Property % Description
end
% Callbacks that handle component events
methods (Access = private)
    % Button pushed function: OpenFileButton
    function OpenFileButtonPushed(app, event)
        [nama_file,nama_folder] = uigetfile ('*.jpg');
        drawnow
        figure(app.UIFigure)
        if ~isequal(nama_file,0)
            b = im2double
(imread(fullfile(nama_folder,nama_file)));
            %% pre-processing
            %
            Img = rgb2gray (b);
            %Menampilkan gambar
            imshow (b,'parent',app.UIAxes)
            title(app.UIAxes, 'Citra Asli')
            %menampilkan nama gambar
            app.EditField_2.Value = nama_file;
            app.Property.b = b;
        end
    end
    % Button pushed function: GLCMBButton
    function GLCMBButtonPushed(app, event)
        Img = app.Property.Img;
        mk000=ko000(im2uint8(Img));
        mk045=ko045(im2uint8(Img));
        mk090=ko090(im2uint8(Img));
        mk135=ko135(im2uint8(Img));
        MatKook=(mk000+mk045+mk090+mk135)/4;
        I= (1:256);
        Suma=sum(MatKook);
        Sumb=sum(MatKook);
        Meana=Suma*I';
        Meanb=Sumb*I';
        Stda=sqrt((I-Meana).^2*Suma');
        Stdb=sqrt((I-Meanb).^2*Sumb');
        CiriASM=sum(sum(MatKook.^2));
        CiriCON=0;CiriCOR=0;CiriVAR=0;CiriIDM=0;CiriENT=0;
        for i=1:256
            for j=1:256
                TempCON = (i-j)*(i-j)*MatKook(i,j);
                TempCOR = (i)*(j)*MatKook(i,j);
                TempVAR = (i-Meana)*(j-Meanb)*MatKook(i,j);
                TempIDM = (MatKook(i,j))/(1+(i-j)*(i-j));
                TempENT = -(MatKook(i,j))*(log2(MatKook(i,j)+eps));
                CiriCON = CiriCON + TempCON;
            end
        end
    end
end

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CiriCOR = CiriCOR + TempCOR;
CiriVAR = CiriVAR + TempVAR;
CiriIDM = CiriIDM + TempIDM;
CiriENT = CiriENT + TempENT;
end
end
CiriCOR=(CiriCOR-Meana*Meanb)/(Stda*Stdb);
app.CiriASMEditField.Value = num2str (CiriASM);
app.CiriContrasEditField.Value = num2str (CiriCON);
app.CiriCorelationEditField.Value = num2str (CiriCOR);
app.CiriVariansEditField.Value = num2str (CiriVAR);
app.CiriIDMEditField.Value = num2str (CiriIDM);
app.CiriEntropiEditField.Value = num2str (CiriENT);
end
% Button pushed function: RAPSVButton
function RAPSVButtonPushed(app, event)
Img = app.Property.Img;
[N, M] = size(Img);
% Compute power spectrum
imgf = fftshift(fft2(Img));
imgfp = (abs(imgf)/(N*M)).^2;
% Normalize
% Menghitung radially average power spectrum
dimMax = max(N,M);
% Make square
dimDiff = abs(N-M);
if N > M % More rows than columns
if ~mod(dimDiff,2) % Even difference
imgfp = [NaN(N,dimDiff/2) imgfp NaN(N,dimDiff/2)]; % Pad columns
to match dimensions
else % Odd difference
imgfp = [NaN(N,floor(dimDiff/2)) imgfp NaN(N,floor(dimDiff/2)+1)];
end
elseif N < M % More columns than rows
if ~mod(dimDiff,2) % Even difference
imgfp = [NaN(dimDiff/2,M); imgfp; NaN(dimDiff/2,M)]; % Pad rows to
match dimensions
else
imgfp = [NaN(floor(dimDiff/2),M); imgfp;
NaN(floor(dimDiff/2)+1,M)]; % Pad rows to match dimensions
end
end
[X Y] = meshgrid(-dimMax/2:dimMax/2-1, -dimMax/2:dimMax/2-1); %
Make Cartesian grid
[theta rho] = cart2pol(X, Y); % Convert to polar coordinate axes
rho = round(rho);
t = cell(floor(dimMax/2) + 1, 1);
for r = 0:floor(dimMax/2)
t{r + 1} = find(rho == r);

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end
Pf = zeros(1, floor(dimMax/2)+1);
for r = 0:floor(dimMax/2)
Pf(1, r + 1) = nanmean( imgfp( t{r+1} ) );
end
app.CiriFiturRAPSVEditField.Value = num2str (Pf);
end
% Button pushed function: PreprocessingButton
function PreprocessingButtonPushed(app, event)
b = app.Property.b;
%% pre-processing
Img = rgb2gray (b);
%menyimpan gambar
app.Property.Img = Img;
%Menampilkan gambar
imshow (Img, 'parent', app.UIAxes_2)
title(app.UIAxes_2, 'Citra Grayscale')
end
end
% Component initialization
methods (Access = private)
% Create UIFigure and components
function createComponents(app)
% Create UIFigure and hide until all components are created
app.UIFigure = uifigure('Visible', 'off');
app.UIFigure.Position = [100 100 705 480];
app.UIFigure.Name = 'MATLAB App';
% Create UIAxes
app.UIAxes = uiaxes(app.UIFigure);
app.UIAxes.XTick = [];
app.UIAxes.YTick = [];
app.UIAxes.Position = [184 248 154 128];
% Create UIAxes_2
app.UIAxes_2 = uiaxes(app.UIFigure);
app.UIAxes_2.XTick = [];
app.UIAxes_2.YTick = [];
app.UIAxes_2.Position = [511 248 154 128];
% Create EditField
app.EditField = uieditfield(app.UIFigure, 'text');
app.EditField.HorizontalAlignment = 'center';
app.EditField.FontName = 'Times New Roman';
app.EditField.FontWeight = 'bold';
app.EditField.Position = [181 398 399 43];
app.EditField.Value = 'EKSTRAKSI FITUR RAPSVDAN GLCM';
% Create HasilEkstraksiFiturRAPSVPanels
app.HasilEkstraksiFiturRAPSVPanels = uipanel(app.UIFigure);
app.HasilEkstraksiFiturRAPSVPanels.Title = 'Hasil Ekstraksi Fitur
RAPSVD';
app.HasilEkstraksiFiturRAPSVPanels.Position = [3 22 243 99];

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% Create CiriFiturRAPSVEditFieldLabel
app.CiriFiturRAPSVEditFieldLabel =
uilabel(app.HasilekstraksiFiturRAPSVPanel);
app.CiriFiturRAPSVEditFieldLabel.HorizontalAlignment = 'right';
app.CiriFiturRAPSVEditFieldLabel.Position = [11 45 95 22];
app.CiriFiturRAPSVEditFieldLabel.Text = 'Ciri Fitur RAPSV';
% Create CiriFiturRAPSVEditField
app.CiriFiturRAPSVEditField =
uieditfield(app.HasilekstraksiFiturRAPSVPanel, 'text');
app.CiriFiturRAPSVEditField.Position = [121 11 100 55];
% Create OpenFileButton
app.OpenFileButton = uibutton(app.UIFigure, 'push');
app.OpenFileButton.ButtonPushedFcn = createCallbackFcn(app,
@OpenFileButtonPushed, true);
app.OpenFileButton.FontName = 'Times New Roman';
app.OpenFileButton.Position = [39 354 100 22];
app.OpenFileButton.Text = 'Open File';
% Create RAPSVButton
app.RAPSVButton = uibutton(app.UIFigure, 'push');
app.RAPSVButton.ButtonPushedFcn = createCallbackFcn(app,
@RAPSVButtonPushed, true);
app.RAPSVButton.FontName = 'Times New Roman';
app.RAPSVButton.Position = [50 122 100 22];
app.RAPSVButton.Text = 'RAPSV';
% Create GLCMBButton
app.GLCMBButton = uibutton(app.UIFigure, 'push');
app.GLCMBButton.ButtonPushedFcn = createCallbackFcn(app,
@GLCMBButtonPushed, true);
app.GLCMBButton.FontName = 'Times New Roman';
app.GLCMBButton.Position = [380 130 100 22];
app.GLCMBButton.Text = 'GLCM';
% Create HasilEkstraksiFiturGLCMPanel
app.HasilekstraksiFiturGLCMPanel = uipanel(app.UIFigure);
app.HasilekstraksiFiturGLCMPanel.Title = 'Hasil Ekstraksi Fitur
GLCM';
app.HasilekstraksiFiturGLCMPanel.Position = [255 18 436 105];
% Create CiriASMEditFieldLabel
app.CiriASMEditFieldLabel =
uilabel(app.HasilekstraksiFiturGLCMPanel);
app.CiriASMEditFieldLabel.Position = [46 59 52 22];
app.CiriASMEditFieldLabel.Text = 'Ciri ASM';
% Create CiriASMEditField
app.CiriASMEditField =
uieditfield(app.HasilekstraksiFiturGLCMPanel, 'text');
app.CiriASMEditField.Position = [113 59 100 22];
% Create CiriContrasEditFieldLabel
app.CiriContrasEditFieldLabel =
uilabel(app.HasilekstraksiFiturGLCMPanel);
app.CiriContrasEditFieldLabel.Position = [30 31 69 22];

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app.CiriContrasEditFieldLabel.Text = 'Ciri Contrás';
% Create CiriContrasEditField
app.CiriContrasEditField =
uieditfield(app.HasilekstraksiFiturGLCMPanel, 'text');
app.CiriContrasEditField.Position = [114 32 100 22];
% Create CiriCorelationEditFieldLabel
app.CiriCorelationEditFieldLabel =
uilabel(app.HasilekstraksiFiturGLCMPanel);
app.CiriCorelationEditFieldLabel.Position = [17 4 82 22];
app.CiriCorelationEditFieldLabel.Text = 'Ciri Corelation';
% Create CiriCorelationEditField
app.CiriCorelationEditField =
uieditfield(app.HasilekstraksiFiturGLCMPanel, 'text');
app.CiriCorelationEditField.Position = [114 5 100 22];
% Create CiriVariansEditFieldLabel
app.CiriVariansEditFieldLabel =
uilabel(app.HasilekstraksiFiturGLCMPanel);
app.CiriVariansEditFieldLabel.Position = [241 58 67 22];
app.CiriVariansEditFieldLabel.Text = 'Ciri Varians';
% Create CiriVariansEditField
app.CiriVariansEditField =
uieditfield(app.HasilekstraksiFiturGLCMPanel, 'text');
app.CiriVariansEditField.Position = [323 59 100 22];
% Create CiriIDMEditFieldLabel
app.CiriIDMEditFieldLabel =
uilabel(app.HasilekstraksiFiturGLCMPanel);
app.CiriIDMEditFieldLabel.HorizontalAlignment = 'right';
app.CiriIDMEditFieldLabel.Position = [259 33 49 22];
app.CiriIDMEditFieldLabel.Text = 'Ciri IDM';
% Create CiriIDMEditField
app.CiriIDMEditField =
uieditfield(app.HasilekstraksiFiturGLCMPanel, 'text');
app.CiriIDMEditField.Position = [323 33 100 22];
% Create CiriEntropiEditFieldLabel
app.CiriEntropiEditFieldLabel =
uilabel(app.HasilekstraksiFiturGLCMPanel);
app.CiriEntropiEditFieldLabel.HorizontalAlignment = 'right';
app.CiriEntropiEditFieldLabel.Position = [243 6 65 22];
app.CiriEntropiEditFieldLabel.Text = 'Ciri Entropi';
% Create CiriEntropiEditField
app.CiriEntropiEditField =
uieditfield(app.HasilekstraksiFiturGLCMPanel, 'text');
app.CiriEntropiEditField.Position = [323 6 100 22];
% Create EditField_2
app.EditField_2 = uieditfield(app.UIFigure, 'text');
app.EditField_2.Position = [166 211 205 22];
% Create PreprocessingButton
app.PreprocessingButton = uibutton(app.UIFigure, 'push');

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```
app.PreprocessingButton.ButtonPushedFcn = createCallbackFcn(app,  
@PreprocessingButtonPushed, true);  
app.PreprocessingButton.FontName = 'Times New Roman';  
app.PreprocessingButton.Position = [399 354 100 22];  
app.PreprocessingButton.Text = 'Pre processing';  
% Create NamaFileLabel  
app>NamaFileLabel = uilabel(app.UIFigure);  
app>NamaFileLabel.Position = [89 211 61 22];  
app>NamaFileLabel.Text = 'Nama File';  
% Show the figure after all components are created  
app.UIFigure.Visible = 'on';  
end  
end  
% App creation and deletion  
methods (Access = public)  
% Construct app  
function app = app2neww  
% Create UIFigure and components  
createComponents(app)  
% Register the app with App Designer  
registerApp(app, app.UIFigure)  
if nargin == 0  
clear app  
end  
end  
% Code that executes before app deletion  
function delete(app)  
% Delete UIFigure when app is deleted  
delete(app.UIFigure)  
end  
end  
end
```