

LAMPIRAN A
PROGRAM MATLAB

Program Pelatihan *Backpropagation*

```

clear all;
clc;
tic

disp('
      _____ ');
disp('      Algoritma Backpropagation ');
disp('      Pelatihan BP ');
disp('      _____ ');

load BOBOT

Data = [Citra_data1; % Citra tanda tangan asli
        Citra_data2; % Citra tanda tangan asli
        Citra_data3; % Citra tanda tangan asli
        Citra_data4; % Citra tanda tangan asli
        Citra_data5; % Citra tanda tangan asli
        Citra_data6; % Citra tanda tangan asli
        Citra_data11; % Citra tanda tangan tiruan
        Citra_data22; % Citra tanda tangan tiruan
        Citra_data33; % Citra tanda tangan tiruan
        Citra_data44; % Citra tanda tangan tiruan
        Citra_data55; % Citra tanda tangan tiruan
        Citra_data66] % Citra tanda tangan tiruan

[Baris Kolom]=size(Data);
jmlh_data=Baris;
jmlh_input=Kolom;

hidden_unit=100
output_unit=1

delbobotv=zeros(hidden_unit,jmlh_input);
delbiasIn=zeros(hidden_unit,1);
delbobotw=zeros(output_unit,hidden_unit);
delbiasOut=zeros(output_unit,1);

target=[1; 1; 1; 1; 1; 1;
        0; 0; 0; 0; 0; 0];

[row col]=size(target);
alpha=0.2;
momentumfactor=0.5;
con=1;
epoch=0;

%Algoritma Pelatihan Backpropagation.....
%_____

while con
    e=0;
    for il=1:jmlh_data
        for j1=1:hidden_unit;
            z_net(j1)=bobot_bias_in(j1);
            for k1=1:jmlh_input
                z_net(j1)=z_net(j1)+Data(il,k1)*v(j1,k1);
            end
            Z(j1)=(2/(1+exp(-z_net(j1))))-1;

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end

y_net = biasOut+Z*bobotw;

for l1=1:output_unit
    y(l1)=1/(1+exp(-y_net(l1)));
    f_errork(l1)=(target(i1,l1)-y(l1))*(y(l1)*(1-(y(l1))));
end

delbobotw=(alpha*f_errork'*Z)+(momentumfactor*delbobotw);
delbiasOut=alpha*f_errork';

f_errorj=bobotw*f_errork'*((y)*(1-(y)))';

for k3=1:hidden_unit
    for i3=1:jmlh_input

delbobotv(k3,i3)=(alpha*f_errorj(k3)*Data(i1,i3))+(momentumfactor*delbobo
tv(k3,i3));
        delbiasIn=alpha*f_errorj';
    end
end

v=v+delbobotv;
bobot_bias_in=bobot_bias_in+delbiasIn';
bobotw=bobotw+delbobotw';
biasOut=biasOut+delbiasOut';

for i4=1:output_unit
    e=e+(sqrt((sum(y(i4)-target(i1,i4))^2)/(row*col)));
end
end

epoch=epoch+1;
if e<0.01 || epoch==5000
    con=0;
end
xl(epoch)=epoch;
yl(epoch)=e;
end

Data;
v;
bobot_bias_in;
bobotw;
biasOut;
epoch
e

toc

figure,plot(xl,yl);
xlabel('Epoch');
ylabel('error');

save BP          v bobot_bias_in bobotw biasOut

```

Program Pengujian *Backpropagation*

```

clear all;
clc;
tic

disp('
      _____ ');
disp('      Algoritma Uji Backpropagation ');
disp('      _____ ');

load BP

Data_Uji = [Citra_data1;
            Citra_data2;
            Citra_data3;
            Citra_data4;
            Citra_data5;
            Citra_data6;
            Citra_data11;
            Citra_data22;
            Citra_data33;
            Citra_data44;
            Citra_data55;
            Citra_data66];

[Baris Kolom]=size(Data_Uji);
jmlh_data=Baris;
jmlh_input=Kolom;

hidden_unit=100;
output_unit=1;

%ALGORITMA UJI.....

for i1=1:jmlh_data
    for j1=1:hidden_unit;
        z_net(j1)=bobot_bias_in(j1);
        for k1=1:jmlh_input
            z_net(j1)=z_net(j1)+Data_Uji(i1,k1)*v(j1,k1);
        end
        Z(j1)=(2/(1+exp(-z_net(j1))))-1;
    end
    y_net = biasOut+Z*bobotw;

    for l1=1:output_unit
        y(l1)=1/(1+exp(-y_net(l1)));
        y ;

        if y>=0 && y<=0.5;
            y=0;
            a=y;
        else
            y=1;
            a=y;
        end
        a
    end
end

toc

```

Program GUI

```

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

% Last Modified by GUIDE v2.5 24-Jul-2013 14:33:38

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

% --- Executes just before VERI is made visible.
function VERI_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 VERI (see VARARGIN)

% Choose default command line output for VERI

```

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handles.output = hObject;

% Update handles structure
guidata(hObject, handles);

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

% --- Outputs from this function are returned to the command line.
function varargout = VERI_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 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)
[FileName,PathName] = uigetfile('*.bmp','Select the BMP-file');
handles.gambar=imread(fullfile(PathName, FileName));
axis on
axes(handles.axes2);

image(handles.gambar)

% axis off
guidata(hObject, handles);

% --- 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)

Suma_1=imread('Suma_Asli_Besar1.bmp');
Suma_2=imread('Suma_Asli_Besar2.bmp');
Suma_3=imread('Suma_Asli_Kecil1.bmp');
Suma_4=imread('Suma_Asli_Kecil2.bmp');
Suma_5=imread('Suma_Asli_Miringkeatas1.bmp');
Suma_6=imread('Suma_Asli_Miringkeatas2.bmp');
Suma_21=imread('Suma_Palsu_Besar1.bmp');
Suma_22=imread('Suma_Palsu_Besar2.bmp');
Suma_23=imread('Suma_Palsu_Kecil1.bmp');
Suma_24=imread('Suma_Palsu_Kecil2.bmp');
Suma_25=imread('Suma_Palsu_Miringkeatas1.bmp');
Suma_26=imread('Suma_Palsu_Miringkeatas2.bmp');

Suma_Gray1=rgb2gray(Suma_1);
Suma_Gray2=rgb2gray(Suma_2);
Suma_Gray3=rgb2gray(Suma_3);
Suma_Gray4=rgb2gray(Suma_4);
Suma_Gray5=rgb2gray(Suma_5);
Suma_Gray6=rgb2gray(Suma_6);

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Suma_Gray21=rgb2gray(Suma_21);
Suma_Gray22=rgb2gray(Suma_22);
Suma_Gray23=rgb2gray(Suma_23);
Suma_Gray24=rgb2gray(Suma_24);
Suma_Gray25=rgb2gray(Suma_25);
Suma_Gray26=rgb2gray(Suma_26);

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Suma_Bi1=im2bw(Suma_Gray1);
Suma_Bi2=im2bw(Suma_Gray2);
Suma_Bi3=im2bw(Suma_Gray3);
Suma_Bi4=im2bw(Suma_Gray4);
Suma_Bi5=im2bw(Suma_Gray5);
Suma_Bi6=im2bw(Suma_Gray6);
Suma_Bi21=im2bw(Suma_Gray21);
Suma_Bi22=im2bw(Suma_Gray22);
Suma_Bi23=im2bw(Suma_Gray23);
Suma_Bi24=im2bw(Suma_Gray24);
Suma_Bi25=im2bw(Suma_Gray25);
Suma_Bi26=im2bw(Suma_Gray26);

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Suma_imRe1=imresize(Suma_Bi1,[20 25]);
Suma_imRe2=imresize(Suma_Bi2,[20 25]);
Suma_imRe3=imresize(Suma_Bi3,[20 25]);
Suma_imRe4=imresize(Suma_Bi4,[20 25]);
Suma_imRe5=imresize(Suma_Bi5,[20 25]);
Suma_imRe6=imresize(Suma_Bi6,[20 25]);
Suma_imRe21=imresize(Suma_Bi21,[20 25]);
Suma_imRe22=imresize(Suma_Bi22,[20 25]);
Suma_imRe23=imresize(Suma_Bi23,[20 25]);
Suma_imRe24=imresize(Suma_Bi24,[20 25]);
Suma_imRe25=imresize(Suma_Bi25,[20 25]);
Suma_imRe26=imresize(Suma_Bi26,[20 25]);

```

```

Suma_DT1=edge(Suma_imRe1,'sobel');
Suma_DT2=edge(Suma_imRe2,'sobel');
Suma_DT3=edge(Suma_imRe3,'sobel');
Suma_DT4=edge(Suma_imRe4,'sobel');
Suma_DT5=edge(Suma_imRe5,'sobel');
Suma_DT6=edge(Suma_imRe6,'sobel');
Suma_DT21=edge(Suma_imRe21,'sobel');
Suma_DT22=edge(Suma_imRe22,'sobel');
Suma_DT23=edge(Suma_imRe23,'sobel');
Suma_DT24=edge(Suma_imRe24,'sobel');
Suma_DT25=edge(Suma_imRe25,'sobel');
Suma_DT26=edge(Suma_imRe26,'sobel');

```

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%Ekstraksi Ciri Menggunakan Moment Invariant.....
%_____

```

```

Suma_data1=invmoments(Suma_DT1);
Suma_data2=invmoments(Suma_DT2);
Suma_data3=invmoments(Suma_DT3);
Suma_data4=invmoments(Suma_DT4);
Suma_data5=invmoments(Suma_DT5);
Suma_data6=invmoments(Suma_DT6);
Suma_data21=invmoments(Suma_DT21);
Suma_data22=invmoments(Suma_DT22);
Suma_data23=invmoments(Suma_DT23);
Suma_data24=invmoments(Suma_DT24);

```

```

Suma_data25=invmoments(Suma_DT25);
Suma_data26=invmoments(Suma_DT26);

% Proses Penyusunan Data.....
%
Data=[Suma_data1; Suma_data2; Suma_data3; Suma_data4; Suma_data5;
Suma_data6;
      Suma_data21; Suma_data22; Suma_data23; Suma_data24; Suma_data25;
Suma_data26
      ];

[Baris Kolom]=size(Data);
jmlh_data=Baris;
jmlh_input=Kolom;

hidden_unit=4
output_unit=1

bobotv=(0.5-(rand(jmlh_input,hidden_unit)*(0.5-(-0.5))));
      bobotV=bobotv';
bobotw=(0.5-(rand(hidden_unit,output_unit)*(0.5-(-0.5))));
biasOut=(0.5-(rand(1,output_unit)*(0.5-(-0.5))));

delbobotv=zeros(hidden_unit,jmlh_input);
delbiasIn=zeros(hidden_unit,1);
delbobotw=zeros(output_unit,hidden_unit);
delbiasOut=zeros(output_unit,1);

target=[1; 1; 1; 1; 1; 1;
         0; 0; 0; 0; 0; 0];

[np no]=size(target);
alpha=0.2
momentumfactor=0.5
con=1;
epoch=0;

beta=0.7*hidden_unit^(1/jmlh_input);

for i5=1:hidden_unit
    vabs(i5)=norm(bobotv(i5,:));
end

for i6=1:hidden_unit
    for j6=1:jmlh_input
        v(i6,j6)=beta*bobotV(i6,j6)/vabs(i6);
    end
end

bobot_bias_in=(beta-rand(hidden_unit,1)*(beta-(-beta)));

%Algoritma Pelatihan Backpropagation.....
%
while con
    e=0;
    for il=1:jmlh_data
        for j1=1:hidden_unit;

```



```

        z_net(j1)=bobot_bias_in(j1);
        for k1=1:jmlh_input
            z_net(j1)=z_net(j1)+Data(i1,k1)*v(j1,k1);
        end
        Z(j1)=(2/(1+exp(-z_net(j1))))-1;
    end

    y_net = biasOut+Z*bobotw;

    for l1=1:output_unit
        y(l1)=1/(1+exp(-y_net(l1)));
        f_errork(l1)=(target(i1,l1)-y(l1))*(y(l1)*(1-(y(l1)))));
    end

    delbobotw=(alpha*f_errork'*Z)+(momentumfactor*delbobotw);
    delbiasOut=alpha*f_errork';

    f_errorj=bobotw*f_errork'*((y)*(1-(y)))';

    for k3=1:hidden_unit
        for i3=1:jmlh_input

delbobotv(k3,i3)=(alpha*f_errorj(k3)*Data(i1,i3))+(momentumfactor*delbobotv
(k3,i3));
            delbiasIn=alpha*f_errorj';
        end
    end

    v=v+delbobotv;
    bobot_bias_in=bobot_bias_in+delbiasIn';
    bobotw=bobotw+delbobotw';
    biasOut=biasOut+delbiasOut';

    for i4=1:output_unit
        e=e+(sqrt((sum(y(i4)-target(i1,i4))^2)/(np*no)));
    end
end

epoch=epoch+1;
if e<0.01 || epoch==100
    con=0;
end
xl(epoch)=epoch;
yl(epoch)=e;

plot(epoch,e,'m.-'); title('Grafik Error Terhadap Epoch');
xlabel('Epoch');
ylabel('error');
hold on;
grid on;
axes(handles.axes3);

end

Data
v
bobot_bias_in

```

```

bobotw
biasOut
epoch
e
err=num2Str(e);
iterasi=num2Str(epoch );
set(handles.text2,'String',err);
set(handles.text3,'String',epoch);
% figure,plot(xl,y1);
hold off
grid off
save FP_verified2 v bobot_bias_in bobotw biasOut

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
set('String',handles.uu)

% --- 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 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)
% set(handles.text2,handles.uu)

% --- Executes on button press in pushbutton3.
function pushbutton3_Callback(hObject, eventdata, handles)
% hObject    handle to pushbutton3 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)
set(handles.edit2,'String',epoch)

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

% --- 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)

Suma_Gray1=rgb2gray(handles.gambar);
Suma_Bi1=im2bw(Suma_Gray1);
Suma_imRel=imresize(Suma_Bi1,[20 25]);
Suma_DT1=edge(Suma_imRel,'sobel');
Suma_data1=invmoments(Suma_DT1);

Data_Uji =[Suma_data1]
save prep.mat Data_Uji

% --- Executes on button press in pushbutton6.
function pushbutton6_Callback(hObject, eventdata, handles)
% hObject    handle to pushbutton6 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

load prep.mat Data_Uji
load FP_verified2

[Baris Kolom]=size(Data_Uji);
jmlh_data=Baris;
jmlh_input=Kolom;

hidden_unit=4;
output_unit=1;

%ALGORITMA UJI.....

for i1=1:jmlh_data
    for j1=1:hidden_unit;
        z_net(j1)=bobot_bias_in(j1);
        for k1=1:jmlh_input
            z_net(j1)=z_net(j1)+Data_Uji(i1,k1)*v(j1,k1);
        end
        Z(j1)=(2/(1+exp(-z_net(j1))))-1;
    end
    y_net = biasOut+Z*bobotw;

```

```

        for l1=1:output_unit
            y(l1)=1/(1+exp(-y_net(l1)));
        end
    Y

    valid=num2Str(y);
    set(handles.text5,'String',valid);

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 button press in pushbutton7.
function pushbutton7_Callback(hObject, eventdata, handles)
% hObject    handle to pushbutton7 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)
close();

% --- Executes during object creation, after setting all properties.
function text2_CreateFcn(hObject, eventdata, handles)
% hObject    handle to text2 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created u
til after all CreateFcns called







```

LAMPIRAN B
TABEL CITRA TANDA TANGAN DAN
HASIL EKSTRAKSI CIRI
DATA LATIH







**DATA LATIH CITRA TANDA TANGAN ASLI
RESPONDEN 1**

SUMA								
No.	Citra Tanda Tangan	$\phi 1$	$\phi 2$	$\phi 3$	$\phi 4$	$\phi 5$	$\phi 6$	$\phi 7$
1.		0.6093	0.1252	0.0351	0.0010	3.6037e-06	0.0003	4.1262e-06
2.		1.2409	0.5636	1.8014	0.6303	0.6570	0.4419	0.1395
3.		0.1875	0	0	0	0	0	0
4.		0.2784	0.0049	0.0059	0.0004	3.8358e-07	2.6407e-05	4.0675e-07
5.		0.3503	0.0316	0.0062	0.0004	3.5374e-07	-1.3795e-05	6.5700e-07
6.		0.4091	0.0150	0.0095	0.0002	-8.2069e-08	-1.8331e-05	-1.8087e-07







**DATA LATIH CITRA TANDA TANGAN TIRUAN
RESPONDEN 1**

SUMA								
No.	Citra Tanda Tangan	$\phi 1$	$\phi 2$	$\phi 3$	$\phi 4$	$\phi 5$	$\phi 6$	$\phi 7$
1.		1.9676	3.2953	3.0028	2.5502	7.0571	4.6172	-0.0409
2.		0.9775	0.2536	1.0073	0.3592	0.2159	0.1710	0.0077
3.		0.2720	0.0023	0.0060	7.3728e-05	-4.8922e-08	-3.5389e-06	0
4.		0.4295	0.0486	0.0136	0.0016	2.8407e-06	-0.0002	-7.1209e-06
5.		0.5353	0.0463	0.0499	0.0197	0.0006	0.0042	0.0003
6.		0.7071	0.2540	0.0190	0.0122	0.0002	0.0042	0







**DATA LATIH CITRA TANDA TANGAN ASLI
RESPONDEN 2**

JUVE								
No.	Citra Tanda Tangan	$\phi 1$	$\phi 2$	$\phi 3$	$\phi 4$	$\phi 5$	$\phi 6$	$\phi 7$
1.		0.7697	0.0171	0.2901	0.0084	-0.0004	0.0011	0.0002
2.		0.5729	0.0503	0.0251	0.0025	1.9885e-05	0.0006	-3.0396e-06
3.		0.7088	0.1554	0.0092	0.0105	3.94E-05	0.004142	-9.56E-05
4.		0.66328	0.04034	0.1187	0.0012	-1.43E-05	-0.0002	1.53E-06
5.		0.6397	0.0192	0.1715	0.01711	0.0009	0.0005	-0.0003
6.		0.3168	0.0020	0.0143	0.0005	5.26E-07	1.92E-05	-1.16E-06







**DATA LATIH CITRA TANDA TANGAN TIRUAN
RESPONDEN 2**

JUVE								
No.	Citra Tanda Tangan	$\phi 1$	$\phi 2$	$\phi 3$	$\phi 4$	$\phi 5$	$\phi 6$	$\phi 7$
1.		0.7193	0.0579	0.1370	0.0155	-0.0002	0.0011	0.0007
2.		0.5704	0.0128	0.0044	0.0029	-6.2805e-06	-0.0003	7.8091e-06
3.		0.3621	0.0106	0.0114	0.0012	3.9891e-06	8.5209e-05	-2.0655e-06
4.		0.3952	0.0667	0.0032	0.0021	5.1102e-06	0.0005	-1.1323e-06
5.		0.4111	0.0008	0.0003	0.0009	3.4454e-08	-1.5799e-05	-4.0867e-07
6.		0.5497	0.0017	0.0427	0.0029	3.1389e-05	6.7353e-05	-3.5678e-06







**DATA LATIH CITRA TANDA TANGAN ASLI
RESPONDEN 3**

ALEX								
No.	Citra Tanda Tangan	$\phi 1$	$\phi 2$	$\phi 3$	$\phi 4$	$\phi 5$	$\phi 6$	$\phi 7$
1.		0.5477	0.0038	0.0126	0.0030	-0.00001	0.0002	-0.00001
2.		0.8267	0.0281	0.3317	0.0540	0.0061	0.0052	0.0039
3.		0.2749	0.0058	0.0009	0.0002	0	0	0
4.		0.3098	0.0273	0.0028	0.0003	0	-0.00003	0
5.		0.4501	0.0208	0.0161	0.0005	0	0.0001	0
6.		0.4727	0.0396	0.0090	0.0017	0	0.0002	0







**DATA LATIH CITRA TANDA TANGAN TIRUAN
RESPONDEN 3**

ALEX								
No.	Citra Tanda Tangan	$\phi 1$	$\phi 2$	$\phi 3$	$\phi 4$	$\phi 5$	$\phi 6$	$\phi 7$
1.		0.8925	0.3296	0.0517	0.0061	-0.0001	-0.0022	0
2.		0.6876	0.1881	0.1221	0.0139	-0.0004	-0.0033	0.0004
3.		0.2720	0.0023	0.0060	0	0	0	0
4.		0.1482	0.0055	0.0025	0.0001	0	-0.00001	0
5.		0.5538	0.0915	0.0819	0.0065	0.0001	0.0014	0.0001
6.		1.1644	0.8236	0.5369	0.1618	0.0443	0.1249	0.0178







**DATA LATIH CITRA TANDA TANGAN ASLI
RESPONDEN 4**

IRENA								
No.	Citra Tanda Tangan	$\phi 1$	$\phi 2$	$\phi 3$	$\phi 4$	$\phi 5$	$\phi 6$	$\phi 7$
1.		0.7884	0.4764	0.0167	0.0082	9.4536e-05	0.0046	-1.7906e-05
2.		0.9347	0.0055	0.5721	0.0102	-0.0008	0.0005	-0.0002
3.		0.5948	0.2149	0.0687	0.0370	0.0019	0.0160	-0.0002
4.		1.1480	1.0798	0.1845	0.1621	0.0280	0.1685	-0.0007
5.		0.5581	0.1568	0.0044	0.0037	1.4820e-05	0.0014	-9.4097e-07
6.		0.9353	0.4202	0.5569	0.2375	0.0851	0.1256	0.0146







**DATA LATIH CITRA TANDA TANGAN TIRUAN
RESPONDEN 4**

IRENA								
No.	Citra Tanda Tangan	$\phi 1$	$\phi 2$	$\phi 3$	$\phi 4$	$\phi 5$	$\phi 6$	$\phi 7$
1.		1.6886	1.7750	5.4731	3.1479	12.9783	3.8010	-1.5109
2.		0.2500	0	0	0	0	0	0
3.		0	0	0	0	0	0	0
4.		0	0	0	0	0	0	0
5.		4.1875	16.5039	0	0	0	0	0
6.		0	0	0	0	0	0	0

**DATA LATIH CITRA TANDA TANGAN ASLI
RESPONDEN 5**







SUTRISNO								
No.	Citra Tanda Tangan	$\phi 1$	$\phi 2$	$\phi 3$	$\phi 4$	$\phi 5$	$\phi 6$	$\phi 7$
1.		0.5612	0.0843	0.0691	0.0086	0.0002	0.0025	-3.96E-05
2.		0.6086	0.0582	0.0540	0.0069	7.78E-05	0.0012	0.0001
3.		0.2839	0.0228	0.0021	0.0001	-6.85E-08	-2.09E-05	-3.34E-08
4.		0.3259	0.0312	0.0023	0.0003	2.52E-07	4.53E-05	-5.33E-09
5.		0.6719	0.2226	0.0170	0.0005	-6.27E-07	-0.0003	-1.41E-06
6.		0.4841	0.0903	0.0149	0.0022	1.04E-05	0.0006	7.25E-06

**DATA LATIH CITRA TANDA TANGAN TIRUAN
RESPONDEN 5**







SUTRISNO								
No.	Citra Tanda Tangan	$\phi 1$	$\phi 2$	$\phi 3$	$\phi 4$	$\phi 5$	$\phi 6$	$\phi 7$
1.		0.2500	0	0	0	0	0	0
2.		0	0	0	0	0	0	0
3.		0.2640	0.0108	0.0008	0.0004	1.89E-07	3.64E-05	0
4.		0.3555	0.0231	0.0063	0.0005	-6.80E-07	-4.69E-05	4.54E-07
5.		0.5364	0.1794	0.0070	0.0058	3.63E-05	0.0021	6.06E-06
6.		0.5126	0.1148	0.0154	0.0033	2.23E-05	0.0010	8.43E-06

LAMPIRAN C
TABEL CITRA TANDA TANGAN DAN
HASIL EKSTRAKSI CIRI
DATA UJI







**DATA UJI CITRA TANDA TANGAN ASLI
RESPONDEN 1**

SUMA								
No.	Citra Tanda Tangan	$\phi 1$	$\phi 2$	$\phi 3$	$\phi 4$	$\phi 5$	$\phi 6$	$\phi 7$
1.		0.5043	0.0471	0.0139	0.0108	8.9862e-05	0.0019	9.6584e-05
2.		1.1812	0.9786	0.1248	0.2076	0.0330	0.1994	0.0052
3.		0.3333	0.0378	0	0	0	0	0
4.		0.3207	0.0074	0.0051	0.0003	-3.2675e-07	-1.5996e-05	-8.9391e-08
5.		0.3650	0.0359	0.0072	0.0006	-1.1465e-06	-0.0001	1.7690e-07
6.		0.5419	0.1387	0.0048	0.0008	5.7405e-07	9.3720e-05	-4.4570e-07







**DATA UJI CITRA TANDA TANGAN TIRUAN
RESPONDEN 1**

SUMA								
No.	Citra Tanda Tangan	$\phi 1$	$\phi 2$	$\phi 3$	$\phi 4$	$\phi 5$	$\phi 6$	$\phi 7$
1.		1.2794	0.4768	0.7258	0.0479	0.0089	0.0252	-0.0006
2.		0.5349	0.0311	0.0072	0.0011	1.9047e-06	-6.5841e-05	2.2077e-06
3.		0.5151	0.0265	0.0886	0.0103	0.0003	0.0009	3.2932e-05
4.		0.3882	0.0384	0.0076	0.0001	-1.0324e-07	-1.8496e-05	4.1415e-08
5.		0.6500	0.0258	0.1053	0.0183	0.0008	0.0027	7.3235e-05
6.		0.4466	0.0341	0.0110	0.0004	3.6137e-07	1.7832e-06	7.7015e-07





**DATA UJI CITRA TANDA TANGAN ASLI
RESPONDEN 2**

JUVE								
No.	Citra Tanda Tangan	$\phi 1$	$\phi 2$	$\phi 3$	$\phi 4$	$\phi 5$	$\phi 6$	$\phi 7$
1.		0.7088	0.1554	0.0092	0.0105	3.9388e-05	0.0041	-9.5639e-05
2.		0.6633	0.0403	0.1187	0.0012	-1.4305e-05	-0.0002	1.5250e-06
3.		0.3407	0.0113	0.0006	0.0005	-4.6058e-08	5.1964e-05	-2.7282e-07
4.		0.2610	0.0012	0.0007	0.0002	6.7458e-08	-6.0655e-07	5.4592e-10
5.		0.4098	0.0034	0.0332	0.0003	-7.9808e-07	-1.8326e-05	-6.4228e-07
6.		0.4044	0.0121	0.0019	0.0005	-2.5860e-07	4.8943e-05	-4.5977e-07


**DATA UJI CITRA TANDA TANGAN TIRUAN
RESPONDEN 2**

JUVE								
No.	Citra Tanda Tangan	$\phi 1$	$\phi 2$	$\phi 3$	$\phi 4$	$\phi 5$	$\phi 6$	$\phi 7$
1.		0.6392	0.1938	0.0385	0.0057	7.7313e-05	0.0022	3.4421e-05
2.		0.6780	0.0761	0.1562	0.0381	0.0015	-0.0019	0.0025
3.		0.3841	0.0284	0.0027	0.0002	-1.1714e-07	1.0194e-05	6.2726e-08
4.		0.3368	0.0228	0.0131	0.0031	1.8214e-05	0.0004	-8.0104e-06
5.		0.5002	0.0345	0.0131	0.0018	8.4564e-06	0.0003	-3.2442e-07
6.		0.4287	0.0008	0.0090	0.0010	1.6229e-06	-3.5124e-06	2.2934e-06







**DATA UJI CITRA TANDA TANGAN ASLI
RESPONDEN 3**

ALEX								
No.	Citra Tanda Tangan	$\phi 1$	$\phi 2$	$\phi 3$	$\phi 4$	$\phi 5$	$\phi 6$	$\phi 7$
1.		0.8348	0.3016	0.0284	0.0035	3.1401e-05	0.0004	1.6124e-05
2.		1.0497	0.0729	0.6477	0.0140	0.0012	0.0008	-0.0007
3.		0.3469	0.0347	0.0078	0.0016	5.6777e-06	0.0003	-4.3993e-07
4.		0.3187	0.0073	0.0140	0.0001	1.4555e-07	2.7239e-06	5.5359e-08
5.		0.5515	0.0873	0.0472	0.0049	-1.9313e-05	0.0001	7.1442e-05
6.		0.4517	0.0388	0.0143	0.0036	2.5316e-05	0.0007	6.5406e-06







**DATA UJI CITRA TANDA TANGAN TIRUAN
RESPONDEN 3**

ALEX								
No.	Citra Tanda Tangan	$\phi 1$	$\phi 2$	$\phi 3$	$\phi 4$	$\phi 5$	$\phi 6$	$\phi 7$
1.		0.9106	0.3700	0.1774	0.0346	0.0019	0.0152	0.0020
2.		1.2622	0.9636	0.4812	0.2876	0.1069	0.1697	0.0049
3.		0.7088	0.2754	0.0988	0.0174	0.0006	0.0024	0.0005
4.		0.3531	0.0144	0.0184	0.0021	6.6267e-06	0.0002	-1.0806e-05
5.		1.7710	1.7430	1.6713	0.3309	0.2046	0.2770	0.1367
6.		2.5808	4.6526	3.7796	0.3320	-0.3174	-0.6143	-0.1938







**DATA UJI CITRA TANDA TANGAN ASLI
RESPONDEN 4**

IRENA								
No.	Citra Tanda Tangan	$\phi 1$	$\phi 2$	$\phi 3$	$\phi 4$	$\phi 5$	$\phi 6$	$\phi 7$
1.		1.0749	0.5986	0.4671	0.1365	0.0326	0.0869	-0.0111
2.		1.3686	0.2170	1.7303	0.0797	-0.0287	0.0290	-0.0072
3.		0.5425	0.1312	0.0118	0.0018	8.2369e-06	0.0006	3.9605e-07
4.		0.2500	0	0	0	0	0	0
5.		1.6049	0.2541	3.8436	0.5000	0.6610	0.1423	0.2091
6.		0.5908	0.1082	0.1217	0.0279	0.0016	0.0065	0.0002







**DATA UJI CITRA TANDA TANGAN TIRUAN
RESPONDEN 4**

IRENA								
No.	Citra Tanda Tangan	$\phi 1$	$\phi 2$	$\phi 3$	$\phi 4$	$\phi 5$	$\phi 6$	$\phi 7$
1.		2.9745	8.1230	7.6083	7.0139	51.2365	19.8579	0.0769
2.		0.2500	0	0	0	0	0	0
3.		0	0	0	0	0	0	0
4.		0	0	0	0	0	0	0
5.		0	0	0	0	0	0	0
6.		1.7940	2.5792	0.9724	0.6347	0.4985	1.0138	-0.0121

**DATA UJI CITRA TANDA TANGAN ASLI
RESPONDEN 5**

SUTRISNO								
No.	Citra Tanda Tangan	$\phi 1$	$\phi 2$	$\phi 3$	$\phi 4$	$\phi 5$	$\phi 6$	$\phi 7$
1.		0.6258	0.0963	0.1171	0.0068	0.0002	0.0016	0.0001
2.		0.6743	0.1579	0.0976	0.0083	-0.0001	-0.0018	0.0002
3.		0.2610	0.0199	0.0004	2.5224e-05	1.8480e-09	6.2641e-07	-1.8968e-09
4.		0.3687	0.0348	0.0037	0.0002	6.2571e-08	2.7800e-05	-1.2563e-07
5.		0.5930	0.1126	0.0818	0.0090	0.0002	0.0026	7.7684e-05
6.		0.5212	0.1157	0.0090	0.0004	4.6969e-07	8.9677e-05	6.7603e-07

**DATA UJI CITRA TANDA TANGAN TIRUAN
RESPONDEN 5**

SUTRISNO								
No.	Citra Tanda Tangan	$\phi 1$	$\phi 2$	$\phi 3$	$\phi 4$	$\phi 5$	$\phi 6$	$\phi 7$
1.		3.2813	9.9620	0	0	0	0	0
2.		0.25000	0	0	0	0	0	0
3.		0.3056	0.0193	0	0	0	0	0
4.		0.7168	0.2811	0.0264	0.0174	0.0004	0.0085	3.2969e-05
5.		0.2720	0.0023	0.0060	7.3728e-05	-4.8922e-08	-3.5389e-06	1.2360e-18
6.		0	0	0	0	0	0	0

LAMPIRAN D

ANALISA STATISTIK ANOVA DAN UJI TUKEY

NILAI EKSTRAKSI CIRI MOMEN INVARIAN

ANALISA STATISTIK CITRA TANDA TANGAN ASLI

RESPONDEN I SUMA

Suma_asli1	Suma_asli2	Suma_asli3	Suma_asli4	Suma_asli5	Suma_asli6
0.60928	1.240889	0.187500	0.278445	0.350342	0.409119
0.12515	0.563592	0.000000	0.004938	0.031637	0.015002
0.03508	1.801400	0.000000	0.005888	0.006218	0.009491
0.00095	0.630284	0.000000	0.000376	0.000447	0.000161
0.000004	0.656957	0.000000	0.000000	0.000000	0.000000
0.000247	0.441927	0.000000	0.000026	-0.000014	-0.000018
0.000004	0.139469	0.000000	0.000000	0.000001	0.000000

SUMMARY

<i>Groups</i>	<i>n</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
Suma_asli1	7	0.7707	0.1101	0.0505
Suma_asli2	7	5.4745	0.7821	0.3108
Suma_asli3	7	0.1875	0.0268	0.0050
Suma_asli4	7	0.2897	0.0414	0.0109
Suma_asli5	7	0.3886	0.0555	0.0170
Suma_asli6	7	0.4338	0.0620	0.0235

ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F-stat</i>	<i>P-value</i>	<i>F crit</i>
<i>Groups</i>	3.0765	5	0.6153	8.8368	1.521E-05	2.4772
<i>Error</i>	2.5066	36	0.0696			
Total	5.5831	41				

Alpha	0.05
n	7
MS Error	0.069628
v	36
Q value (from table)	4.232
HSD	0.422075

<i>Treatment</i>	<i>Mean</i>	<i>Difference</i>	<i>Difference</i>	<i>Difference</i>	<i>Difference</i>	<i>Difference</i>
		<i>from 1st</i>	<i>from 2nd</i>	<i>from 3rd</i>	<i>from 4th</i>	<i>from 5th</i>
Suma_asli2	0.7821					
Suma_asli1	0.1101	0.6720				
Suma_asli6	0.0620	0.7201	0.0481			
Suma_asli5	0.0555	0.7266	0.0546	0.0064		
Suma_asli4	0.0414	0.7407	0.0687	0.0206	0.0141	
Suma_asli3	0.0268	0.7553	0.0833	0.0352	0.0287	0.0146

Suma_asli2#Suma_asli1				
Suma_asli2#Suma_asli6	Suma_asli1=Suma_asli6			
Suma_asli2#Suma_asli5	Suma_asli1=Suma_asli5	Suma_asli6= Suma_asli5		
Suma_asli2#Suma_asli4	Suma_asli1=Suma_asli4	Suma_asli6= Suma_asli4	Suma_asli5= Suma_asli4	
Suma_asli2#Suma_asli3	Suma_asli1=Suma_asli3	Suma_asli6= Suma_asli3	Suma_asli5= Suma_asli3	Suma_asli4= Suma_asli3
Kesimpulan : Suma_asli2				

ANALISA ANOVA UNTUK DATA BARU

Suma_asli1	Data pengganti	Suma_asli3	Suma_asli4	Suma_asli5	Suma_asli6
0.60928	0.6776	0.1875	0.27845	0.35034	0.40912
0.12515	0.2875	0	0.00494	0.03164	0.0150
0.03508	0.0074	0	0.00589	0.00622	0.00949
0.00095	0.0048	0	0.00038	0.00045	0.00016
3.60E-06	0.0000	0	3.84E-07	3.54E-07	-8.21E-08
0.00025	0.0026	0	2.64E-05	-1.38E-05	-1.83E-05
4.13E-06	0.0000	0	4.07E-07	6.57E-07	-1.81E-07

SUMMARY

<i>Groups</i>	<i>n</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
Suma_asli1	7	0.7707	0.1101	0.0505
Data pengganti	7	0.9799	0.1400	0.0675
Suma_asli3	7	0.1875	0.0268	0.0050
Suma_asli4	7	0.2897	0.0414	0.0109
Suma_asli5	7	0.3886	0.0555	0.0170
Suma_asli6	7	0.4338	0.0620	0.0235

ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F-stat</i>	<i>P-value</i>	<i>F crit</i>
<i>Groups</i>	0.0660	5	0.0132	0.4538	0.807698	2.4772
<i>Error</i>	1.0468	36	0.0291			
<i>Total</i>	1.1127	41				

ANALISA STATISTIK CITRA TANDA TANGAN TIRUAN

RESPONDEN I SUMA

Suma_palsu1	Suma_palsu2	Suma_palsu3	Suma_palsu4	Suma_palsu5	Suma_palsu6
1.96759	0.97754	0.27200	0.42947	0.53528	0.70705
3.29529	0.25360	0.00230	0.04857	0.04630	0.25389
3.00277	1.00735	0.00597	0.01359	0.04991	0.01897
2.55024	0.35916	7.37E-05	1.63E-03	1.97E-02	0.01215
7.05707	0.21589	-4.89E-08	2.84E-06	0.00057	0.00015
4.61721	0.17099	-3.54E-06	-1.99E-04	4.20E-03	0.00419
-0.04094	0.00772	0	-7.12E-06	0.00025	-0.00010

SUMMARY

<i>Groups</i>	<i>n</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
Suma_palsu1	7	22.4492	3.20703	4.89630
Suma_palsu2	7	2.99225	0.42746	0.16008
Suma_palsu3	7	0.28035	0.040045	0.01047
Suma_palsu4	7	0.49306	0.07044	0.02538
Suma_palsu5	7	0.65625	0.09375	0.03834
Suma_palsu6	7	0.99630	0.14233	0.07052

ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F-stat</i>	<i>P-value</i>	<i>F crit</i>
<i>Groups</i>	55.0334	5	11.0067	12.6973	3.83E-07	2.4772
<i>Error</i>	31.2065	36	0.8668			
<i>Total</i>	86.2399	41				

Alpha	0.05
n	7
MS Error	0.8668466
v	36
Q value (from table)	4.232
HSD	1.4892505

<i>Treatment</i>	<i>Mean</i>	<i>Difference</i>	<i>Difference</i>	<i>Difference</i>	<i>Difference</i>	<i>Difference</i>
		<i>from 1st</i>	<i>from 2nd</i>	<i>from 3rd</i>	<i>from 4th</i>	<i>from 5th</i>
Suma_palsu1	3.2070					
Suma_palsu2	0.4275	2.7796				
Suma_palsu6	0.1423	3.0647	0.285			
Suma_palsu5	0.0938	3.1133	0.334	0.0486		
Suma_palsu4	0.0704	3.1366	0.357	0.0719	0.0233	
Suma_palsu3	0.0401	3.1670	0.387	0.0537	0.0537	0.030

Suma_palsu1≠Suma_palsu2				
Suma_palsu1≠Suma_palsu6	Suma_palsu2=Suma_palsu6			
Suma_palsu1≠Suma_palsu5	Suma_palsu2=Suma_palsu5	Suma_palsu6=Suma_palsu5		
Suma_palsu1≠Suma_palsu4	Suma_palsu2=Suma_palsu4	Suma_palsu6=Suma_palsu4	Suma_palsu5=Suma_palsu4	
Suma_palsu1≠Suma_palsu3	Suma_palsu2=Suma_palsu3	Suma_palsu6=Suma_palsu3	Suma_palsu5=Suma_palsu3	Suma_palsu4=Suma_palsu3
Kesimpulan : Tolak Suma_palsu1				

ANALISA ANOVA UNTUK DATA BARU

data pengganti	Suma_palsu2	Suma_palsu3	Suma_palsu4	Suma_palsu5	Suma_palsu6
0.8543	0.9775	0.2720	0.4295	0.5353	0.7071
0.2608	0.2536	0.0023	0.0486	0.0463	0.2539
0.2202	1.0073	0.0060	0.0136	0.0499	0.0190
0.0516	0.3592	7.37E-05	1.63E-03	1.97E-02	0.0121
0.0054	0.2159	-4.89E-08	2.84E-06	0.0006	0.0002
0.0127	0.1710	-3.54E-06	-1.99E-04	4.20E-03	0.0042
-0.0013	0.0077	0	-7.12E-06	0.0003	-0.0001

<i>Groups</i>	<i>n</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
data pengganti	7	1.4038	0.2005	0.0946
Suma_palsu2	7	2.9922	0.4275	0.1601
Suma_palsu3	7	0.2803	0.0400	0.0105
Suma_palsu4	7	0.4931	0.0704	0.0254
Suma_palsu5	7	0.6563	0.0938	0.0383
Suma_palsu6	7	0.9963	0.1423	0.0705

ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F-stat</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	0.7018	5	0.1404	2.1085	0.0868	2.4772
Within Groups	2.3964	36	0.0666			
Total	3.0982	41				

ANALISA STATISTIK CITRA TANDA TANGAN ASLI
RESPONDEN II JUVE

Juve_asli1	Juve_asli2	Juve_asli3	Juve_asli4	Juve_asli5	Juve_asli6
0.7697	0.5729	0.7088	0.66328	0.6397	0.3168
0.0171	0.0503	0.1554	0.04034	0.0192	0.0020
0.2901	0.0251	0.0092	0.1187	0.1715	0.0143
0.0084	0.0025	0.0105	0.0012	0.01711	0.0005
-0.0004	1.99E-05	3.94E-05	-1.43E-05	0.0009	5.26E-07
0.0011	0.0006	0.004142	-0.0002	0.0005	1.92E-05
0.0002	-3.04E-06	-9.56E-05	1.53E-06	-0.0003	-1.16E-06

SUMMARY

Groups	Count	Sum	Average	Variance
Juve_asli 1	7	1.086145	0.155164	0.084733
Juve_asli 2	7	0.651347	0.09305	0.045131
Juve_asli 3	7	0.888038	0.126863	0.069027
Juve_asli 4	7	0.823246	0.117607	0.059804
Juve_asli 5	7	0.848474	0.121211	0.056065
Juve_asli 6	7	0.333538	0.047648	0.014108

ANOVA

Source of Variation	SS	df	MS	F-stat	P-value	F crit
Groups	0.0468	5	0.0094	0.1707	0.9718	2.4772
Error	1.9732	36	0.0548			
Total	2.0200	41				

Kesimpulan : Juve_asli1=Juve_asli2=Juve_asli3=Juve_asli4=Juve_asli5=Juve_asli6

ANALISA STATISTIK CITRA TANDA TANGAN TIRUAN

RESPONDEN II JUVE

Juve_palsu1	Juve_palsu2	Juve_palsu3	Juve_palsu4	Juve_palsu5	Juve_palsu7
0.7193	0.5704	0.3621	0.3952	0.4111	0.5497
0.0579	0.0128	0.0106	0.0667	0.00078	0.0017
0.1370	0.0044	0.0114	0.0032	0.0002	0.0427
0.0155	0.0028	0.0012	2.05E-03	0.0009	0.0029
-1.59E-04	-6.28E-06	3.99E-06	5.11E-06	3.45E-08	3.14E-05
1.08E-03	-0.000319	8.52E-05	5.25E-04	-1.58E-05	6.74E-05
6.96E-04	7.81E-06	-2.07E-06	-1.13E-06	-4.09E-07	-3.57E-06

SUMMARY

<i>Groups</i>	<i>n</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
Juve_palsu1	7	0.2120	0.0353	0.0030
Juve_palsu2	7	0.0196	0.0033	2.51E-05
Juve_palsu3	7	0.0233	0.0039	3.07E-05
Juve_palsu4	7	0.0724	0.0121	0.0007
Juve_palsu5	7	0.0019	0.0003	1.73E-07
Juve_palsu6	7	0.0474	0.0079	0.0003

ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F-stat</i>	<i>P-value</i>	<i>F crit</i>
Groups	0.0050	5	0.0010	1.4713	0.2285	2.5336
Error	0.0202	30	0.0007			
Total	0.0252	35				

Kesimpulan : Juve_palsu =Juve_palsu2=Juve_palsu3=Juve_palsu4=Juve_palsu5= Juve_palsu6

ANALISA STATISTIK CITRA TANDA TANGAN ASLI

RESPONDEN III ALEX

Alex_asli1	Alex_asli2	Alex_asli3	Alex_asli4	Alex_asli5	Alex_asli6
0.54773	0.82667	0.27492	0.30982	0.45012	0.47273
0.00376	0.02810	0.00581	0.02733	0.02076	0.03963
0.01261	0.33174	0.00092	0.00275	0.01610	0.00896
0.00295	0.05396	0.00019	0.00026	0.00050	0.00172
-0.00001	0.00608	0.00000	0.00000	0.00000	0.00001
0.00016	0.00516	0.00001	-0.00003	0.00007	0.00024
-0.00001	0.00390	0.00000	0.00000	0.00000	0.00000

SUMMARY

Groups	n	Sum	Average	Variance
Alex_asli1	7	0.5671808	0.08102582	0.04237301
Alex_asli2	7	1.2556003	0.17937147	0.09533219
Alex_asli3	7	0.2818528	0.04026469	0.01071119
Alex_asli4	7	0.3401371	0.04859102	0.01336961
Alex_asli5	7	0.4875595	0.06965136	0.02822343
Alex_asli6	7	0.5232829	0.0747547	0.03100093

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Groups	0.0878	5	0.0176	0.4768	0.791102	2.4772
Error	1.3261	36	0.0368			
Total	1.4139	41				

Kesimpulan : Alex_asli1=Alex_asli2=Alex_asli3=Alex_asli4=Alex_asli5=Alex_asli6

ANALISA STATISTIK CITRA TANDA TANGAN TIRUAN

RESPONDEN III ALEX

Alex_palsu1	Alex_palsu2	Alex_palsu3	Alex_palsu4	Alex_palsu5	Alex_palsu6
0.89254	0.68757	0.27200	0.14815	0.55381	1.16435
0.32962	0.18807	0.00230	0.00549	0.09150	0.82360
0.05169	0.12206	0.00597	0.00254	0.08191	0.53694
0.00611	0.01390	0.00007	0.00010	0.00653	0.16184
-0.00010	-0.00041	0.00000	0.00000	0.00010	0.04428
-0.00216	-0.00329	0.00000	-0.00001	0.00142	0.12493
0.00005	0.00040	0.00000	0.00000	0.00011	0.01775

SUMMARY

Groups	n	Sum	Average	Variance
Alex_palsu1	7	1.277744826	0.182534975	0.112460251
Alex_palsu2	7	1.008307434	0.144043919	0.062998701
Alex_palsu3	7	0.280346108	0.040049444	0.010466212
Alex_palsu4	7	0.156269412	0.022324202	0.003082642
Alex_palsu5	7	0.735390285	0.105055755	0.040763017
Alex_palsu6	7	2.873689991	0.410527142	0.197780294

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Groups	0.6956	5	0.1391	1.9524	0.1097	2.4772
Error	2.5653	36	0.0713			
Total	3.2609	41				

Kesimpulan : Alex_palsu = Alex_palsu2= Alex_palsu3= Alex_palsu4= Alex_palsu5= Alex_palsu6

ANALISA STATISTIK CITRA TANDA TANGAN ASLI

RESPONDEN IV IRENA

Irena_asli1	Irena_asli2	Irena_asli3	Irena_asli4	Irena_asli5	Irena_asli6
0.78840	0.93472	0.59475	1.14800	0.55808	0.93530
0.47643	0.00551	0.21492	1.07982	0.15678	0.42017
0.01673	0.57213	0.06871	0.18448	0.00437	0.55685
0.00821	0.01015	0.03696	0.16214	0.00370	0.23752
0.00009	-0.00076	0.00185	0.02803	0.00001	0.08513
0.00458	0.00053	0.01602	0.16847	0.00142	0.12561
-0.00002	-0.00015	-0.00019	-0.00071	0.00000	0.01462

SUMMARY

<i>Groups</i>	<i>n</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
Irena_asli1	7	1.2944	0.1849	0.1016
Irena_asli2	7	1.5221	0.2174	0.1450
Irena_asli3	7	0.9330	0.1333	0.0470
Irena_asli4	7	2.7702	0.3957	0.2462
Irena_asli5	7	0.7244	0.1035	0.0435
Irena_asli6	7	2.3752	0.3393	0.1059

ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Groups	0.4688	5	0.0938	0.8162	0.5461	2.4772
Error	4.1350	36	0.1149			
Total	4.6038	41				

Kesimpulan : Irena_asli1=Irena_asli2=Irena_asli3=Irena_asli4=Irena_asli5= Irena_asli6

ANALISA STATISTIK CITRA TANDA TANGAN TIRUAN

RESPONDEN IVIRENA

Irena_palsu1	Irena_palsu2	Irena_palsu3	Irena_palsu4	Irena_palsu5	Irena_palsu6
1.6886	0.2500	0	0	4.1875	0
1.7750	0	0	0	16.5039	0
5.4731	0	0	0	0	0
3.1479	0	0	0	0	0
12.9783	0	0	0	0	0
3.8010	0	0	0	0	0
-1.5109	0	0	0	0	0

SUMMARY

<i>Groups</i>	<i>n</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
Irena_palsu1	7	27.3530	3.9076	20.6916
Irena_palsu2	7	0.2500	0.0357	0.0089
Irena_palsu3	7	0	0	0
Irena_palsu4	7	0	0	0
Irena_palsu5	7	20.6914	2.9559	38.1253
Irena_palsu6	7	0	0	0

ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Groups	112.5228	5	22.5046	2.2954	0.0656	2.4772
Error	352.9555	36	9.8043			
Total	465.4782	41				

Kesimpulan : Irena_palsu1=Irena_palsu2=Irena_palsu3=Irena_palsu4=Irena_palsu5= Irena_palsu6

ANALISA STATISTIK CITRA TANDA TANGAN ASLI

RESPONDEN V SUTRISNO

Sutrisno_asli1	Sutrisno_asli2	Sutrisno_asli3	Sutrisno_asli4	Sutrisno_asli5	Sutrisno_asli6
0.56117	0.60862	0.28385	0.32593	0.67188	0.48413
0.08427	0.05824	0.02275	0.03123	0.22263	0.09026
0.06911	0.05399	0.00212	0.00227	0.01697	0.01493
0.00861	0.00692	0.00014	0.00030	0.00052	0.00221
0.00021	0.00008	0	0	0	0.00001
0.00248	0.00120	-0.00002	0.00005	-0.00024	0.00054
-0.00004	0.00011	0	0	0	0.00001

SUMMARY

Groups	n	Sum	Average	Variance
Sutrisno_asli1	7	0.725811345	0.103687335	0.041934861
Sutrisno_asli2	7	0.729152103	0.104164586	0.050136181
Sutrisno_asli3	7	0.308842531	0.044120362	0.011244623
Sutrisno_asli4	7	0.359782522	0.051397503	0.014786106
Sutrisno_asli5	7	0.911749236	0.130249891	0.063753472
Sutrisno_asli6	7	0.592085356	0.084583622	0.032112106

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Groups	0.0389	5	0.0078	0.2180	0.9525	2.4772
Error	1.2838	36	0.0357			
Total	1.3227	41				

Kesimpulan : Sutrisno_asli1=Sutrisno_asli2=Sutrisno_asli3=Sutrisno_asli4=Sutrisno_asli5=Sutrisno_asli6

ANALISA STATISTIK CITRA TANDA TANGAN TIRUAN

RESPONDEN V SUTRISNO

Sutrisno_palsu1	Sutrisno_palsu2	Sutrisno_palsu3	Sutrisno_palsu4	Sutrisno_palsu5	Sutrisno_palsu6
0.25	0	0.2640	0.3555	0.5364	0.5126
0	0	0.0108	0.0231	0.1794	0.1148
0	0	0.0008	0.0063	0.0070	0.0154
0	0	0.0004	0.0005	0.0058	0.0033
0	0	0	0	0	0
0	0	0	0	0.0020	0.0010
0	0	0	0	0	0

SUMMARY

<i>Groups</i>	<i>n</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
Sutrisno_palsu1	7	0.2500	0.0357	0.0089
Sutrisno_palsu2	7	0	0	0
Sutrisno_palsu3	7	0.2760	0.0394	0.0098
Sutrisno_palsu4	7	0.3853	0.0550	0.0176
Sutrisno_palsu5	7	0.7307	0.1044	0.0406
Sutrisno_palsu6	7	0.6471	0.0924	0.0361

ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
<i>Groups</i>	0.0524	5	0.0105	0.5557	0.7330	2.4772
<i>Error</i>	0.6783	36	0.0188			
<i>Total</i>	0.7307	41				

Kesimpulan :

Sutrisno_palsu1=Sutrisno_palsu2=Sutrisno_palsu3=Sutrisno_palsu4=Sutrisno_palsu5=Sutrisno_palsu6

LAMPIRAN E
ANALISA STATISTIK ANOVA DAN UJI TUKEY
TANPA EKSTRAKSI CIRI

ANALISA STATISTIK CITRA TANDA TANGAN ASLI

RESPONDEN I (SUMA)

SUMMARY

<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
Suma_asli1	500	25	0.050	0.04759519
Suma_asli2	500	15	0.030	0.02915832
Suma_asli3	500	8	0.016	0.01577555
Suma_asli4	500	17	0.034	0.03290982
Suma_asli5	500	16	0.032	0.03103808
Suma_asli6	500	32	0.064	0.06002405

ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
<i>Groups</i>	0.7100	5	0.1419	3.933	0.0015	2.2171
<i>Error</i>	108.034	2994	0.0361			
<i>Total</i>	108.7436	2999				

$F > F$ critical maka hipotesis null ditolak dilakukan uji lanjutan Tukey

Alpha	0.05
v (df error)	2994
k (banyak kelompok)	6
MS Error	0.0361
Q value (from table)	4.03
HSD	0.0342

Treatment	Mean	Difference from 1st	Difference from 2nd	Difference from 3rd	Difference from 4th	Difference from 5th
Suma_asli6	0.064					
Suma_asli1	0.050	0.014				
Suma_asli4	0.034	0.030	0.016			
Suma_asli5	0.032	0.032	0.018	0.002		
Suma_asli2	0.030	0.034	0.020	0.004	0.002	
Suma_asli3	0.016	0.048	0.034	0.018	0.016	0.014

Suma_asli6= Suma_asli1				
Suma_asli6= Suma_asli4	Suma_asli1= Suma_asli4			
Suma_asli6= Suma_asli5	Suma_asli1= Suma_asli5	Suma_asli4= Suma_asli5		
Suma_asli6= Suma_asli2	Suma_asli1= Suma_asli2	Suma_asli4= Suma_asli2	Suma_asli5= Suma_asli2	
Suma_asli6≠ Suma_asli3	Suma_asli1= Suma_asli3	Suma_asli4= Suma_asli3	Suma_asli5= Suma_asli3	Suma_asli2=Suma_asli3
Kesimpulan : Suma_asli6 atau Suma_asli3 sebagai data pelatihan				

ANALISA ANOVA UNTUK DATA BARU

SUMMARY

<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
Suma_asli1	500	25	0.050	0.047595
Suma_asli2	500	15	0.030	0.029158
Suma_asli3	500	8	0.016	0.015776
Suma_asli4	500	17	0.034	0.032910
Suma_asli5	500	16	0.032	0.031038
Data Pengganti	500	20	0.040	0.038477

ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	0.3177	5	0.0635	1.9553	0.0822	2.2171
Within Groups	97.282	2994	0.0325			
Total	97.5997	2999				

STATISTIK CITRA TANDA TANGAN TIRUAN
RESPONDEN I (SUMA)

SUMMARY

<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
Suma_palsu1	500	12	0.024	0.0234709
Suma_palsu2	500	18	0.036	0.0347735
Suma_palsu3	500	5	0.010	0.0099198
Suma_palsu4	500	17	0.034	0.0329098
Suma_palsu5	500	26	0.052	0.0493948
Suma_palsu6	500	21	0.042	0.0403166

ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
<i>Groups</i>	0.531	5	0.1062	3.3399	0.0052	2.2171
<i>Error</i>	95.202	2994	0.0318			
<i>Total</i>	95.733	2999				

Alpha	0.05
v (df error)	2994
k (banyak kelompok)	6
MS Error	0.0318
Q value (from table)	4.03
HSD	0.03214

Treatment	Mean	Difference from 1st	Difference from 2nd	Difference from 3rd	Difference from 4th	Difference from 5th
Suma_palsu5	0.052					
Suma_palsu6	0.042	0.010				
Suma_palsu2	0.036	0.016	0.006			
Suma_palsu4	0.034	0.018	0.008	0.002		
Suma_palsu1	0.024	0.028	0.018	0.012	0.010	
Suma_palsu3	0.010	0.042	0.032	0.026	0.024	0.014

Suma_palsu5≠Suma_palsu3				
Suma_palsu5=Suma_palsu6	Suma_palsu6=Suma_palsu2			
Suma_palsu5=Suma_palsu2	Suma_palsu6=Suma_palsu4	Suma_palsu2=Suma_palsu4		
Suma_palsu5=Suma_palsu4	Suma_palsu6=Suma_palsu1	Suma_palsu2=Suma_palsu1	Suma_palsu4=Suma_palsu1	
Suma_palsu5=Suma_palsu1	Suma_palsu6=Suma_palsu3	Suma_palsu2=Suma_palsu3	Suma_palsu4=Suma_palsu3	Suma_palsu1=Suma_palsu3
Kesimpulan : Tolak Suma_palsu5 atau Suma_palsu3 sebagai data pelatihan				

ANALISA ANOVA UNTUK DATA BARU

SUMMARY

<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
Suma_asli1	500	12	0.024	0.023471
Suma_asli2	500	18	0.036	0.034774
Suma_asli3	500	17	0.034	0.032910
Suma_asli4	500	26	0.052	0.049395
Suma_asli5	500	21	0.042	0.040317
Data pengganti	500	14	0.028	0.027271

ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
<i>Groups</i>	0.252	5	0.0504	1.452894	0.202059	2.217086
<i>Error</i>	103.86	2994	0.034689			
<i>Total</i>	104.112	2999				

ANALISA STATISTIK CITRA TANDA TANGAN ASLI
RESPONDEN II (JUVE)

SUMMARY

<i>Groups</i>	<i>n</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
Juve_asli1	500	35	0.070	0.065230461
Juve_asli2	500	41	0.082	0.075426854
Juve_asli3	500	13	0.026	0.025374749
Juve_asli4	500	21	0.042	0.040316633
Juve_asli5	500	29	0.058	0.054745491
Juve_asli6	500	33	0.066	0.061767535

ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
<i>Groups</i>	1.0307	5	0.2061	3.8307	0.0018	2.2171
<i>Error</i>	161.108	2994	0.0538			
Total	162.1387	2999				

Alpha	0.05
v (df error)	2994
k (banyak kelompok)	6
MS Error	0.0538
Q value (from table)	4.03
HSD	0.0418

Treatment	Mean	Difference from 1st	Difference from 2nd	Difference from 3rd	Difference from 4th	Difference from 5th
Juve_asli2	0.082					
Juve_asli1	0.070	0.012				
Juve_asli6	0.066	0.016	0.004			
Juve_asli5	0.058	0.024	0.012	0.008		
Juve_asli4	0.042	0.040	0.028	0.024	0.016	
Juve_asli3	0.026	0.056	0.044	0.040	0.032	0.016

Juve_asli 2 = Juve_asli 1				
Juve_asli 2 = Juve_asli 6	Juve_asli 1 = Juve_asli 6			
Juve_asli 2 = Juve_asli 5	Juve_asli 1 = Juve_asli 5	Juve_asli 6 = Juve_asli 5		
Juve_asli 2 = Juve_asli 4	Juve_asli 1 = Juve_asli 4	Juve_asli 6 = Juve_asli 4	Juve_asli 5 = Juve_asli 4	
Juve_asli 2 ≠ Juve_asli 3	Juve_asli 1 ≠ Juve_asli 3	Juve_asli 6 = Juve_asli 3	Juve_asli 5 = Juve_asli 3	Juve_asli 4 = Juve_asli3
Kesimpulan : Tolak Juve_asli 3				

ANALISA ANOVA UNTUK DATA BARU

SUMMARY

<i>Groups</i>	<i>n</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
Juve_asli 1	500	35	0.07	0.0652
Juve_asli 2	500	41	0.082	0.0754
Data pengganti	500	28	0.056	0.0530
Juve_asli 4	500	21	0.042	0.0403
Juve_asli 5	500	29	0.058	0.0547
Juve_asli 6	500	33	0.066	0.0618

ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
<i>Groups</i>	0.4657	5	0.0931	1.5945	0.1581	2.2171
<i>Error</i>	174.878	2994	0.0584			
<i>Total</i>	175.3437	2999				

STATISTIK CITRA TANDA TANGAN TIRUAN
RESPONDEN II (JUVE)

SUMMARY

<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
Juve_palsu1	500	30	0.060	0.056513026
Juve_palsu2	500	30	0.060	0.056513026
Juve_palsu3	500	11	0.022	0.021559118
Juve_palsu4	500	11	0.022	0.021559118
Juve_palsu5	500	40	0.080	0.073747495
Juve_palsu6	500	35	0.070	0.065230461

ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	1.517667	5	0.303533333	6.171002132	1.0674E-05	2.217085713
Within Groups	147.266	2994	0.049187041			
Total	148.7837	2999				

Alpha	0.05
v (df error)	2994
k (banyak kelompok)	6
MS Error	0.04919
Q value (from table)	4.03
HSD	0.03997

Treatment	Mean	Difference from 1st	Difference from 2nd	Difference from 3rd	Difference from 4th	Difference from 5th
Juve_palsu5	0.080					
Juve_palsu6	0.070	0.010				
Juve_palsu1	0.060	0.020	0.010			
Juve_palsu2	0.060	0.020	0.010	0.000		
Juve_palsu3	0.022	0.058	0.048	0.038	0.038	
Juve_palsu4	0.022	0.058	0.048	0.038	0.038	0.000

Juve_palsu5=Juve_palsu6				
Juve_palsu5=Juve_palsu1	Juve_palsu6=Juve_palsu1			
Juve_palsu5=Juve_palsu2	Juve_palsu6= Juve_palsu2	Juve_palsu1=Juve_palsu2		
Juve_palsu5≠ Juve_palsu3	Juve_palsu6≠ Juve_palsu3	Juve_palsu1=Juve_palsu3	Juve_palsu2=Juve_palsu3	
Juve_palsu5≠Juve_palsu4	Juve_palsu6≠ Juve_palsu4	Juve_palsu1=Juve_palsu4	Juve_palsu2=Juve_palsu4	Juve_palsu3=Juve_palsu4
Kesimpulan : Tolak Juve_palsu 5 dan Juve_palsu 6 Atau Tolak Juve_palsu 3 dan Juve_palsu 4				

ANALISA ANOVA UNTUK DATA BARU

SUMMARY

<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
Juve_palsu 1	500	30	0.060	0.0565
Juve_palsu 2	500	30	0.060	0.0565
Data pengganti1	500	28	0.056	0.0530
Data pengganti2	500	45	0.090	0.0821
Juve_palsu 5	500	40	0.080	0.0737
Juve_palsu 6	500	35	0.070	0.0652

ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
<i>Groups</i>	0.4467	5	0.0893	1.3849	0.2267	2.2171
<i>Error</i>	193.132	2994	0.0645			
Total	193.5787	2999				

**ANALISA STATISTIK CITRA TANDA TANGAN ASLI
RESPONDEN III ALEX**

SUMMARY

<i>Groups</i>	<i>n</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
Alex_asli1	500	48	0.096	0.086957916
Alex_asli2	500	33	0.066	0.061767535
Alex_asli3	500	13	0.026	0.025374749
Alex_asli4	500	24	0.048	0.045787575
Alex_asli5	500	37	0.074	0.068661323
Alex_asli6	500	34	0.068	0.063503006

ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F stat</i>	<i>P-value</i>	<i>F crit</i>
<i>Group</i>	1.419	5	0.2838	4.83683	0.0002078	2.2171
<i>Error</i>	175.674	2994	0.0587			
<i>Total</i>	177.093	2999				

**Karena F-statistik > F-critical
Dilakukan Uji Lanjutan Tukey HSD (Honestly Significant
Different)**

MS Error =	0.058675351
Df error/v/N-k =	2994
Q value (from table) =	4.03
HSD	0.043656397

<i>Treatment</i>	<i>Mean</i>	<i>Difference from 1st</i>	<i>Difference from 2nd</i>	<i>Difference from 3rd</i>	<i>Difference from 4th</i>	<i>Difference from 5th</i>
Alex_asli1	0.096	*				
Alex_asli5	0.074	0.022	*			
Alex_asli6	0.068	0.028	0.006	*		
Alex_asli2	0.066	0.030	0.008	0.002	*	
Alex_asli4	0.048	0.048	0.026	0.020	0.018	*
Alex_asli3	0.026	0.070	0.048	0.042	0.040	0.022

Alex_asli1=Alex_asli5				
Alex_asli1=Alex_asli6	Alex_asli5=Alex_asli6			
Alex_asli1=Alex_asli2	Alex_asli5=Alex_asli2	Alex_asli6=Alex_asli2		
Alex_asli1≠Alex_asli4	Alex_asli5=Alex_asli4	Alex_asli6=Alex_asli4	Alex_asli2=Alex_asli4	
Alex_asli1≠Alex_asli3	Alex_asli≠ Alex_asli3	Alex_asli6=Alex_asli3	Alex_asli2=Alex_asli3	Alex_asli4=Alex_asli3
Kesimpulan : Tolak Alex_asli1 dan Alex_asli3				

ANALISA ANOVA UNTUK DATA BARU

SUMMARY

<i>Groups</i>	<i>n</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
Data Latih baru1	499	47	0.094	0.085488246
Alex_asli2	500	33	0.066	0.061767535
Data Latih baru2	500	30	0.060	0.056513026
Alex_asli4	500	24	0.048	0.045787575
Alex_asli5	500	37	0.074	0.068661323
Alex_asli6	500	34	0.068	0.063503006

ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
<i>Groups</i>	0.5938	5	0.1188	1.8671	0.0968	2.2171
<i>Error</i>	190.393	2993	0.0636			
<i>Total</i>	190.987	2998				

STATISTIK CITRA TANDA TANGAN TIRUAN
RESPONDEN III ALEX

SUMMARY

<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
Alex_palsu1	500	37	0.074	0.0687
Alex_palsu2	500	42	0.084	0.0771
Alex_palsu3	500	5	0.010	0.0099
Alex_palsu4	500	3	0.006	0.0060
Alex_palsu5	500	22	0.044	0.0421
Alex_palsu6	500	22	0.044	0.0421

ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
<i>Group</i>	2.5497	5	0.5100	12.4398	5.694E-12	2.2171
<i>Error</i>	122.73	2994	0.0410			
<i>Total</i>	125.2797	2999				

MS Error =	0.0410
Df error/v/N-k =	2994
Q value (from table) =	4.03
HSD	0.036489634

<i>Treatment</i>	<i>Mean</i>	<i>Difference from 1st</i>	<i>Difference from 2nd</i>	<i>Difference from 3rd</i>	<i>Difference from 4th</i>	<i>Difference from 5th</i>
Alex_palsu2	0.084	*				
Alex_palsu1	0.074	0.010	*			
Alex_palsu5	0.044	0.040	0.030	*		
Alex_palsu6	0.044	0.040	0.030	0	*	
Alex_palsu3	0.010	0.074	0.064	0.034	0.034	*
Alex_palsu4	0.006	0.078	0.068	0.038	0.038	0.004

Alex_palsu2 = Alex_palsu1				
Alex_palsu2 ≠ Alex_palsu5	Alex_palsu1 = Alex_palsu5			
Alex_palsu2 ≠ Alex_palsu6	Alex_palsu1 = Alex_palsu6	Alex_palsu5 = Alex_palsu6		
Alex_palsu2 ≠ Alex_palsu3	Alex_palsu1 ≠ Alex_palsu3	Alex_palsu5 = Alex_palsu3	Alex_palsu6 = Alex_palsu3	
Alex_palsu2 ≠ Alex_palsu4	Alex_palsu1 ≠ Alex_palsu4	Alex_palsu5 ≠ Alex_palsu4	Alex_palsu6 ≠ Alex_palsu4	Alex_palsu3 = Alex_palsu4

ANALISA ANOVA UNTUK DATA BARU

SUMMARY

<i>Groups</i>	<i>n</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
Data latih baru1	500	15	0.030	0.0292
Data latih baru2	500	13	0.026	0.0254
Alex_palsu3	500	5	0.010	0.0099
Data latih baru3	500	12	0.024	0.0235
Alex_palsu5	500	22	0.044	0.0422
Alex_palsu6	500	22	0.044	0.0422

ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
<i>Groups</i>	0.4217	5	0.0843	2.9381	0.0119	2.2171
<i>Error</i>	85.938	2994	0.0287			
<i>Total</i>	86.3597	2999				

**ANALISA STATISTIK CITRA TANDA TANGAN ASLI
RESPONDEN IV IRENA**

SUMMARY

<i>Groups</i>	<i>n</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
Irena_asli1	500	27	0.054	0.051186373
Irena_asli2	500	38	0.076	0.070364729
Irena_asli3	500	14	0.028	0.027270541
Irena_asli4	500	10	0.020	0.019639279
Irena_asli5	500	25	0.050	0.04759519
Irena_asli6	500	16	0.032	0.031038076

ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
<i>Groups</i>	1.0667	5	0.2133	5.1802	9.7457E-05	2.2171
<i>Error</i>	123.3	2994	0.0412			
Total	124.3667	2999				

**Karena F-statistik > F-critical maka tolak Ho
Dilakukan Uji Lanjutan Tukey HSD (Honestly Significant Different)**

MS Error = 0.041182365

Df error/v/N-k = 2994

Q value (from table) = 4.03

HSD 0.036574271

<i>Treatment</i>	<i>Mean</i>	<i>Difference from 1st</i>	<i>Difference from 2nd</i>	<i>Difference from 3rd</i>	<i>Difference from 4th</i>	<i>Difference from 5th</i>
Irena_asli2	0.076	*				
Irena_asli1	0.054	0.022	*			
Irena_asli5	0.050	0.026	0.004	*		
Irena_asli6	0.032	0.044	0.022	0.018	*	
Irena_asli3	0.028	0.048	0.026	0.022	0.004	*
Irena_asli4	0.020	0.056	0.034	0.030	0.012	0.008

Irena_asli2 = Irena_asli1				
Irena_asli2 = Irena_asli5	Irena_asli1 = Irena_asli5			
Irena_asli2 ≠ Irena_asli6	Irena_asli1 = Irena_asli6	Irena_asli5 = Irena_asli6		
Irena_asli2 ≠ Irena_asli3	Irena_asli1 = Irena_asli3	Irena_asli5 = Irena_asli3	Irena_asli6 = Irena_asli3	
Irena_asli2 ≠ Irena_asli4	Irena_asli1 = Irena_asli4	Irena_asli5 = Irena_asli4	Irena_asli6 = Irena_asli4	Irena_asli3 = Irena_asli4
Tolak Irena_asli2				

ANALISA ANOVA UNTUK DATA BARU

SUMMARY

<i>Groups</i>	<i>n</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
Irena_asli1	500	27	0.054	0.05118637
Data baru1	500	27	0.054	0.05118637
Irena_asli3	500	14	0.028	0.02727054
Irena_asli4	500	28	0.056	0.05296994
Irena_asli5	500	25	0.050	0.04759519
Irena_asli6	500	16	0.032	0.03103808

ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
<i>Groups</i>	0.3817	5	0.0763	1.7531	0.1191	2.2171
<i>Error</i>	130.362	2994	0.0435			
<i>Total</i>	130.7437	2999				

STATISTIK CITRA TANDA TANGAN TIRUAN
RESPONDEN IV IRENA

SUMMARY

<i>Groups</i>	<i>n</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
Irena_palsu1	500	19	0.038	0.036629259
Irena_palsu2	500	4	0.008	0.007951904
Irena_palsu3	500	0	0	0
Irena_palsu4	500	0	0	0
Irena_palsu5	500	8	0.016	0.015775551
Irena_palsu6	500	0	0	0

ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
<i>Groups</i>	0.5617	5	0.1123	11.1669	1.107E-10	2.2171
<i>Error</i>	30.118	2994	0.0101			
<i>Total</i>	30.6797	2999				

Karena F-statistik > F-critical maka tolak Ho
Dilakukan Uji Lanjutan Tukey HSD (Honestly Significant Different)

MS Error = 0.010059452
Df error/v/N-k = 2994
Q value (from table) = 4.03

HSD 0.018076203

<i>Treatment</i>	Mean	Difference from 1st	Difference from 2nd	Difference from 3rd	Difference from 4th	Difference from 5th
Irena_asli2	0.076	*				
Irena_asli1	0.054	0.022	*			
Irena_asli5	0.050	0.026	0.004	*		
Irena_asli6	0.032	0.044	0.022	0.018	*	
Irena_asli3	0.028	0.048	0.026	0.022	0.004	*
Irena_asli4	0.020	0.056	0.034	0.030	0.012	0.008

SUMMARY

<i>Groups</i>	<i>n</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
Irena_asli1	500	27	0.054	0.051186373
Data baru1	500	27	0.054	0.051186373
Irena_asli3	500	14	0.028	0.027270541
Irena_asli4	500	28	0.056	0.05296994
Irena_asli5	500	25	0.05	0.04759519
Irena_asli6	500	16	0.032	0.031038076

ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Groups	0.3817	5	0.0763	1.7531	0.1191	2.2171
Error	130.362	2994	0.0435			
Total	130.7437	2999				

**ANALISA STATISTIK CITRA TANDA TANGAN ASLI
RESPONDEN V SUTRISNO**

SUMMARY

<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
Sutrisno1	500	35	0.07	0.06523
Sutrisno2	500	48	0.096	0.086958
Sutrisno3	500	15	0.03	0.029158
Sutrisno4	500	15	0.03	0.029158
Sutrisno5	500	26	0.052	0.049395
Sutrisno6	500	26	0.052	0.049395

ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
<i>Groups</i>	1.587	5	0.3174	6.1572	1.1E-05	2.2171
<i>Error</i>	154.338	2994	0.0515			
<i>Total</i>	155.925	2999				

STATISTIK CITRA TANDA TANGAN TIRUAN
RESPONDEN V SUTRISNO

SUMMARY

<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
Sutrisno11	500	4	0.008	0.007952
Sutrisno22	500	0	0	0
Sutrisno33	500	10	0.02	0.019639
Sutrisno44	500	8	0.016	0.015776
Sutrisno5	500	11	0.022	0.021559
Sutrisno6	500	15	0.03	0.029158

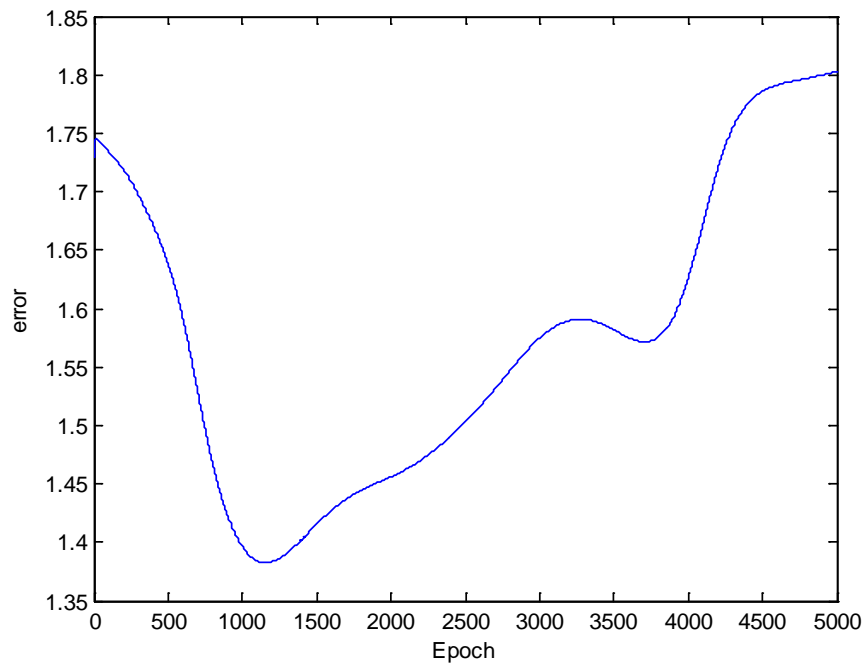
ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	0.284	5	0.0568	3.6223	0.0029	2.2171
Within Groups	46.948	2994	0.0157			
Total	47.232	2999				

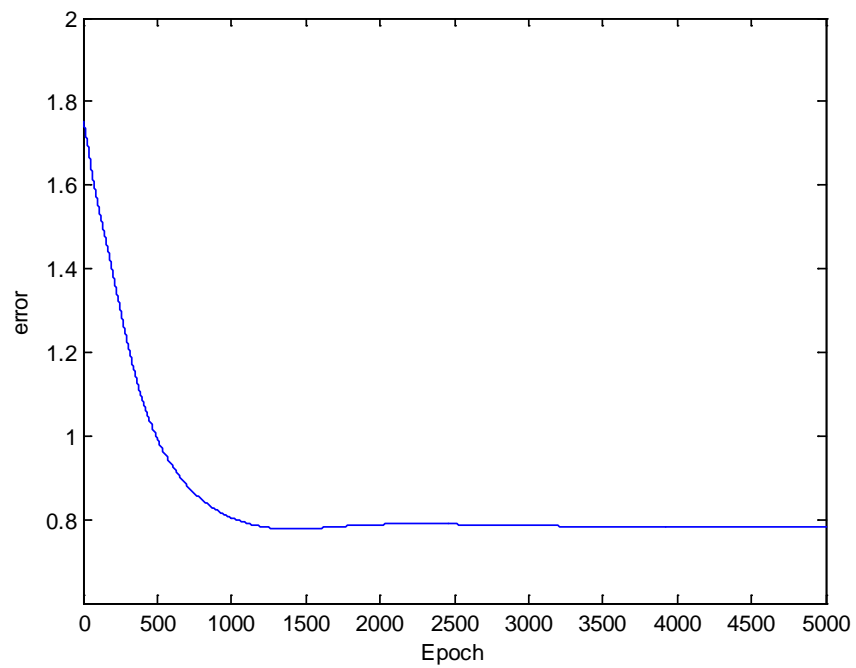
LAMPIRAN F
GRAFIK PELATIHAN

1. PERCOBAANI

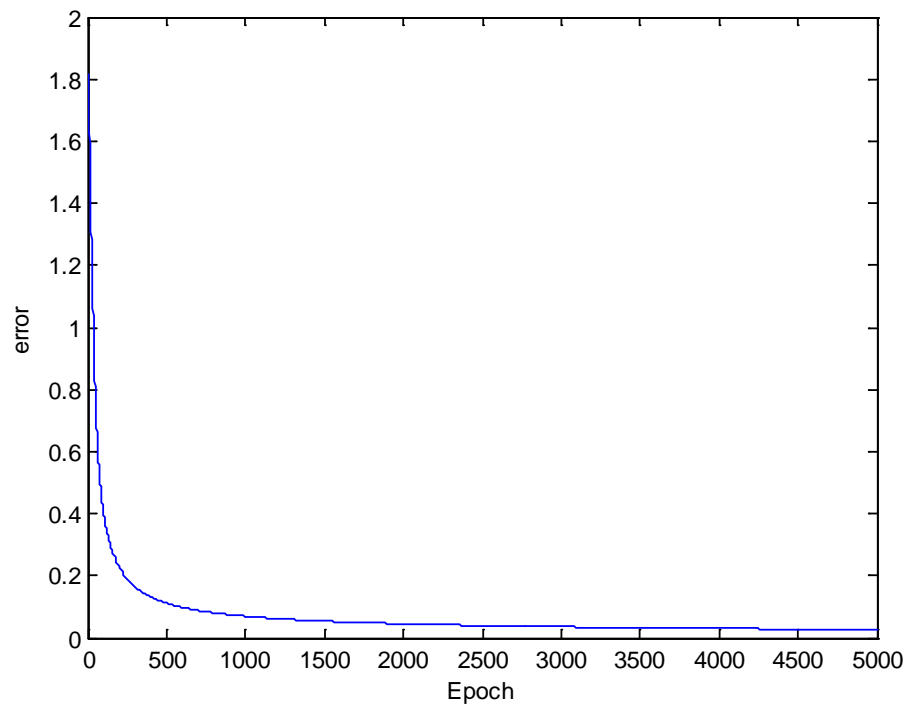
Responden 2



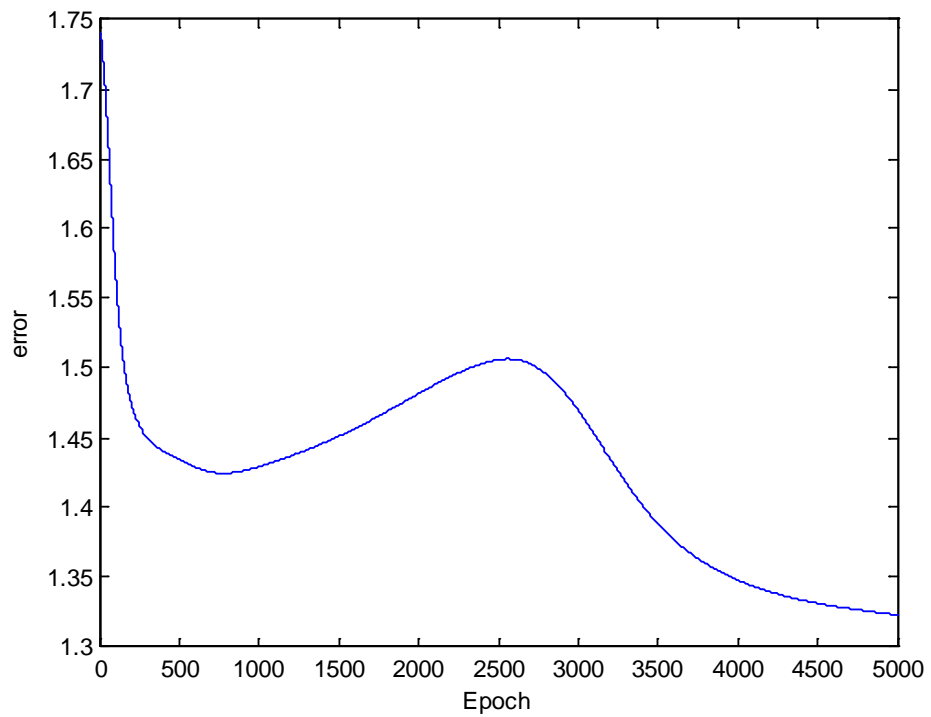
Responden 3



Responden 4

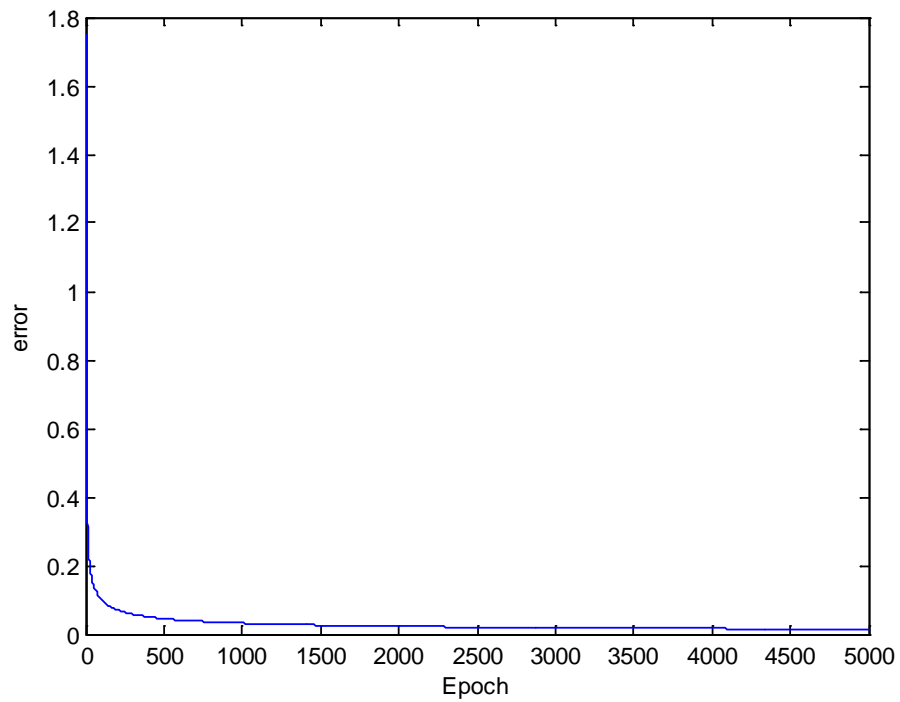


Responden 5

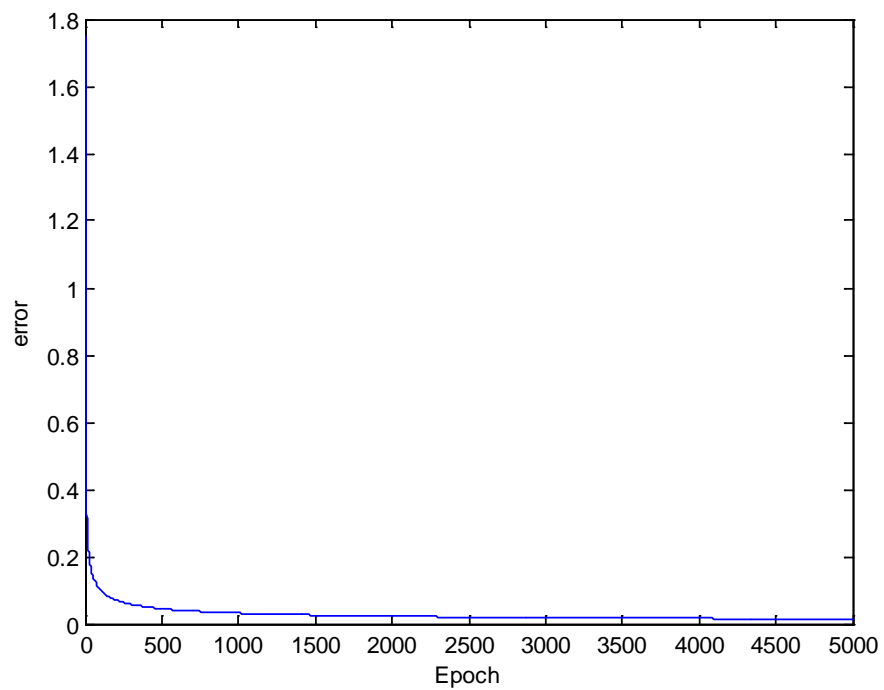


2. PERCOBAAN II

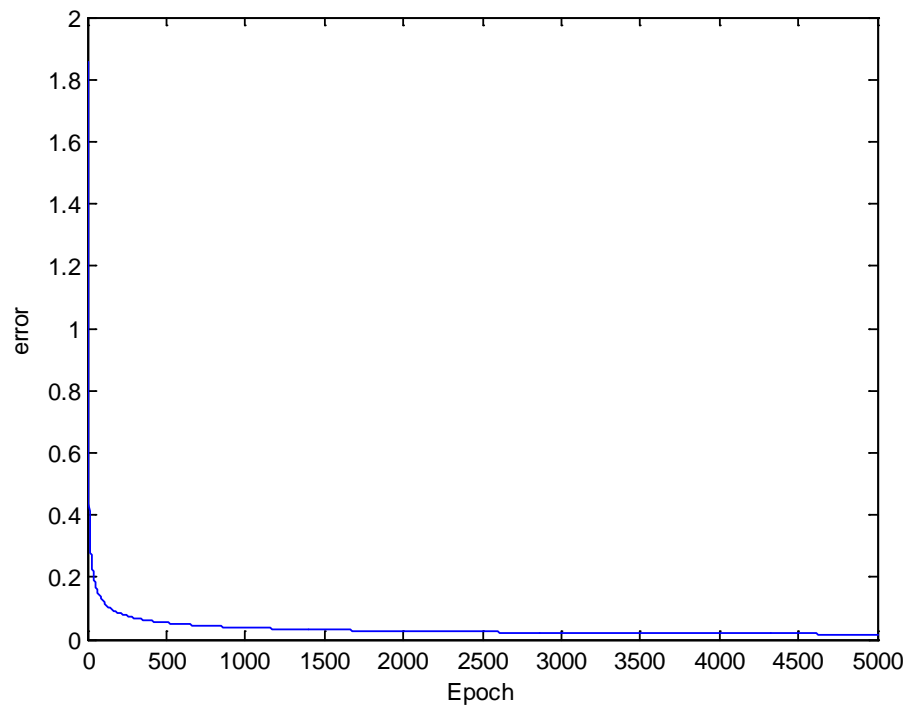
Responden 2



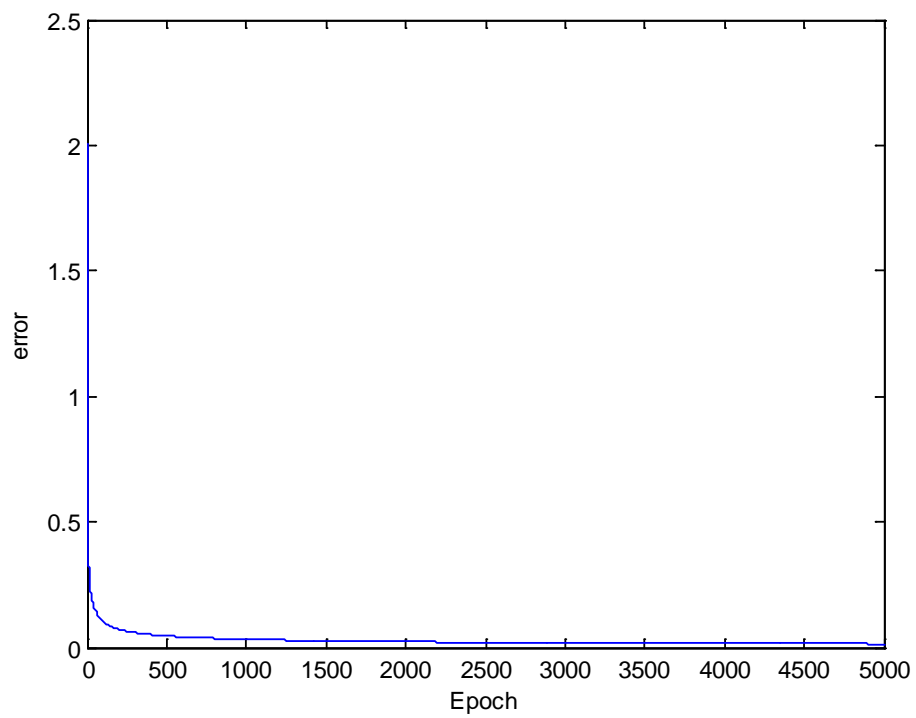
Responden 3



Responden 4

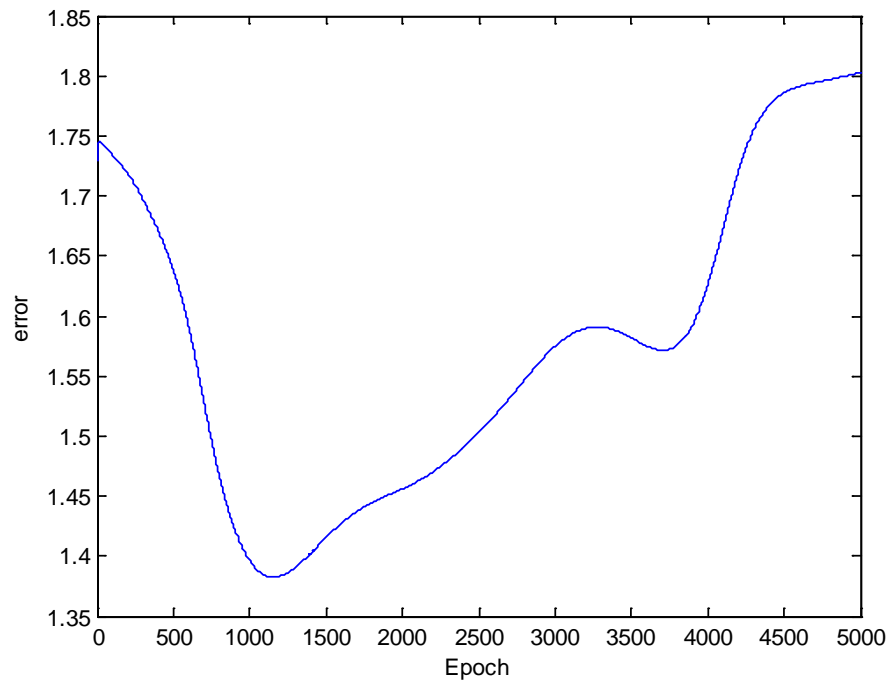


Responden 5

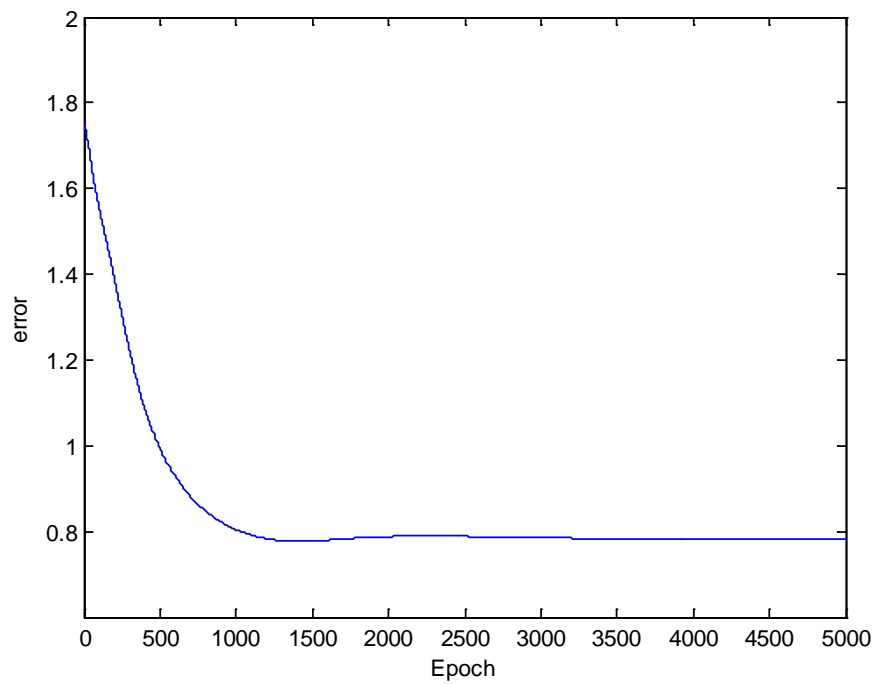


3. PERCOBAAN III

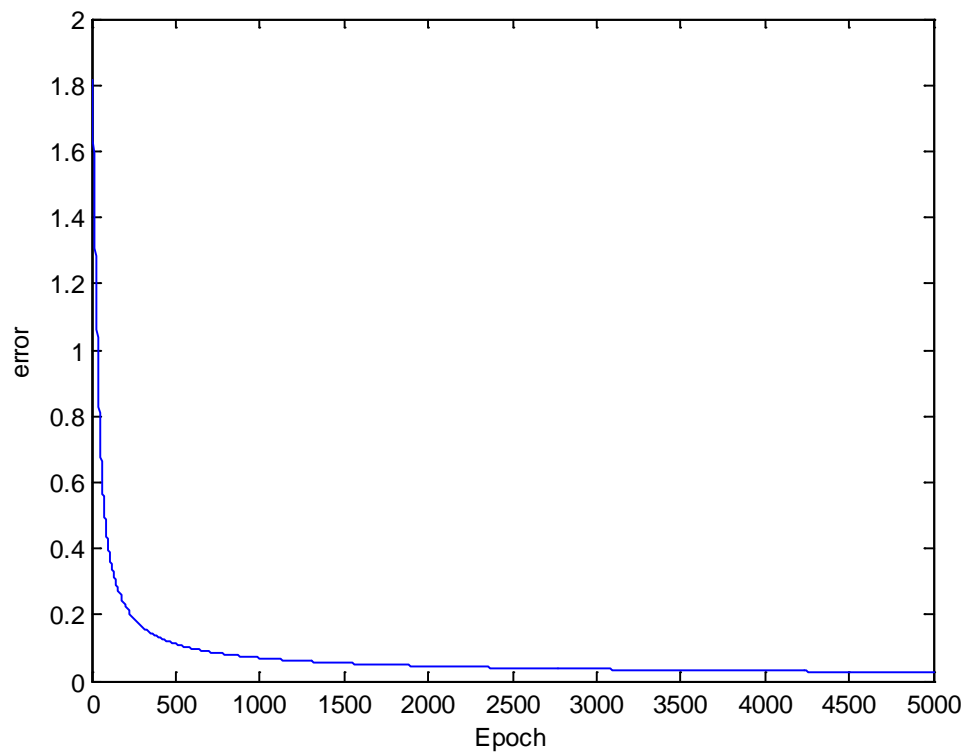
Responden 2



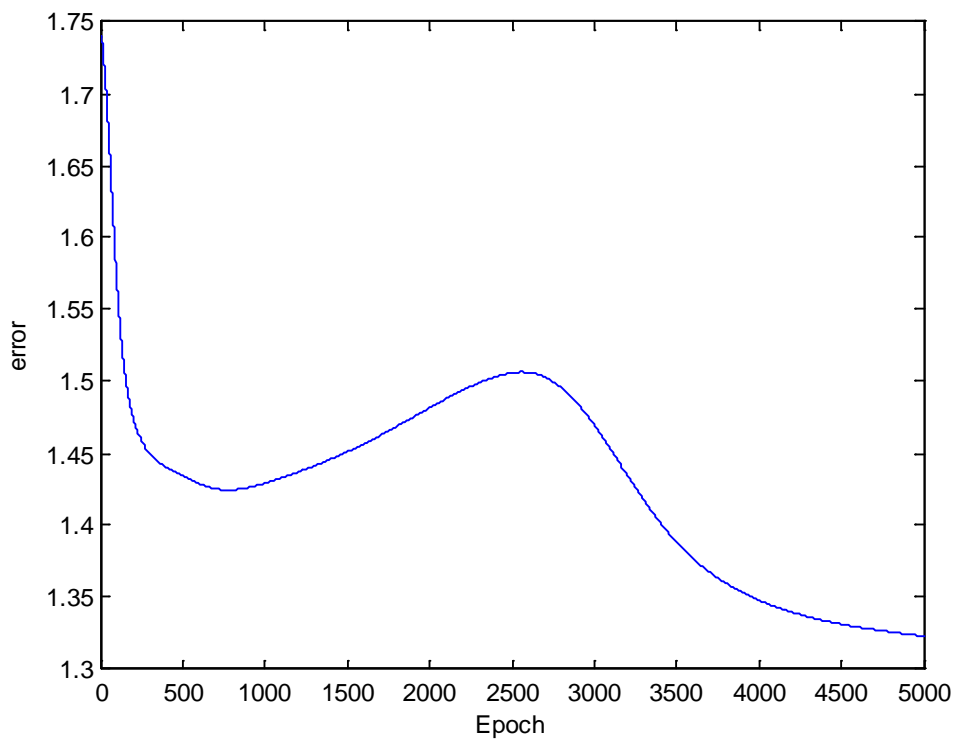
Responden 3



Responden 4

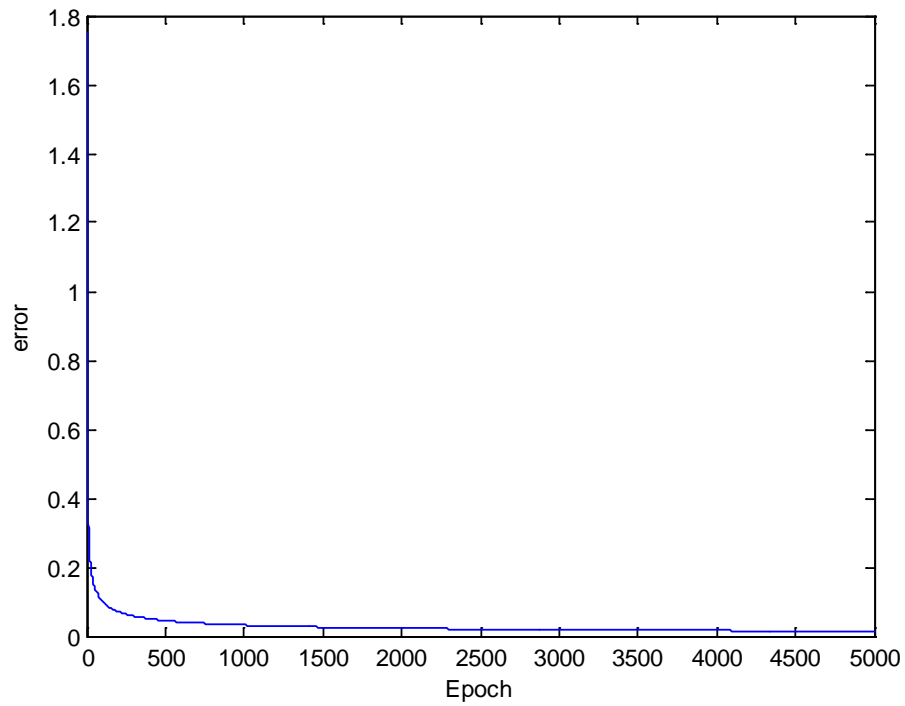


Responden 5

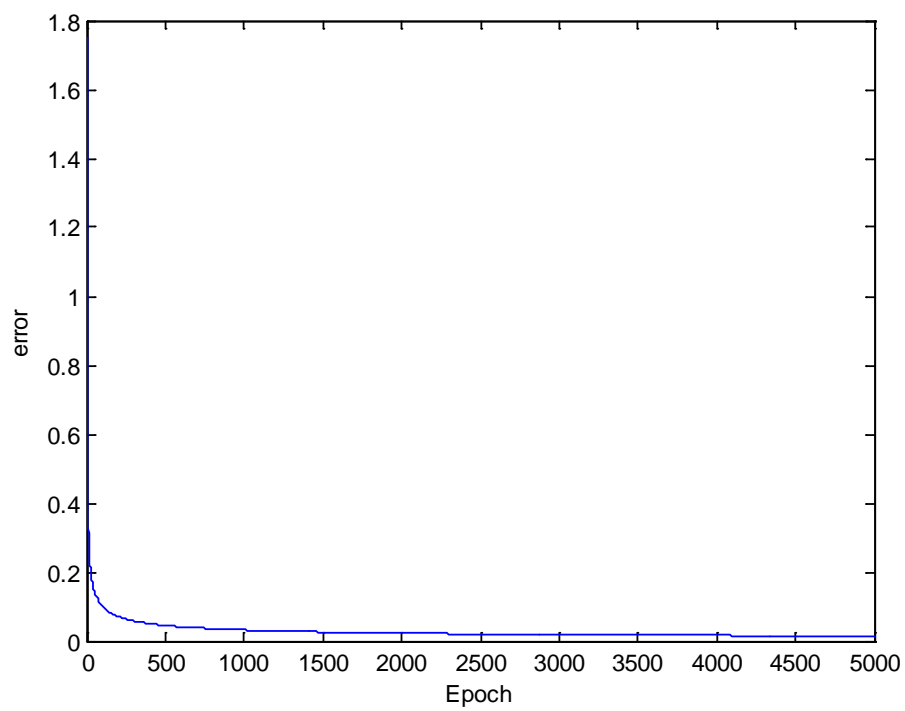


4. PERCOBAAN IV

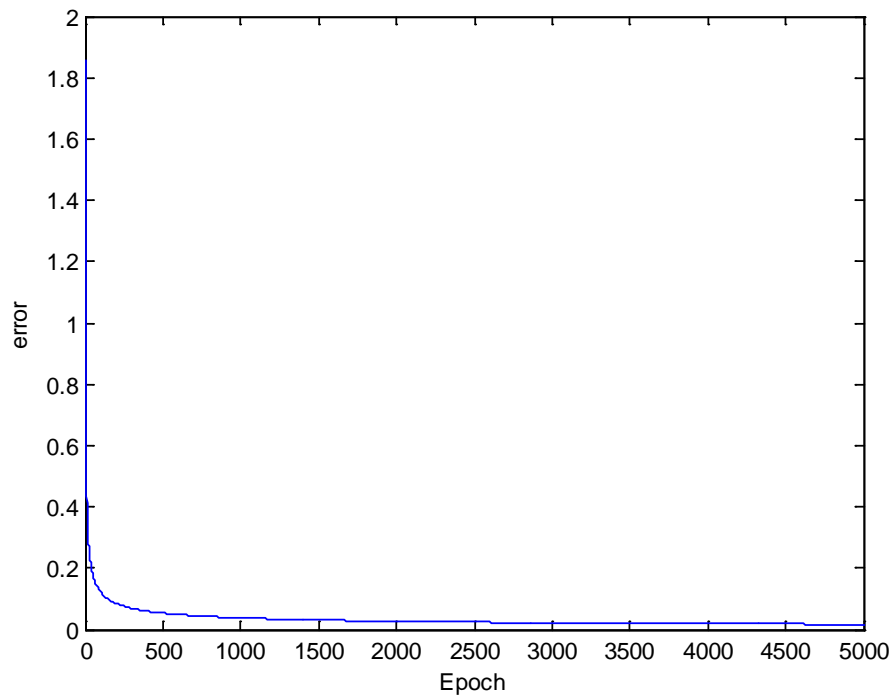
Responden 2



Responden 3



Responden 4



Responden 5

