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## LAMPIRAN

### Lampiran 1 Tampilan Sistem Prediksi Bus

#### 1. Tampilan Pelatihan Sistem

pelatihan

Halaman Depan Penguujian Prediksi

**Bobot**  
 Random  Load Bobot

**Pelatihan**  
Load Data: BDR/1  
Load Bobot Pelatihan  
Simpan Bobot Simpan Jaringan

**Hidden Layer**  
Jumlah Neuron: 100  
Fungsi Aktivasi: Sigmoid Biner

**Output Layer**  
Jumlah Neuron: 1  
Fungsi Aktivasi: Sigmoid Biner

**Parameter**  
Training Func.: traingdx  
Error Goal: 1e-6  
Epochs: 1000  
Learning Rate: 0.1

LT	Tahun	Bulan	Tanggal	Hari	Waktu	Jumlah Penumpang (actual)	Jumlah Penumpang (predicted)
----	-------	-------	---------	------	-------	---------------------------	------------------------------

#### 2. Tampilan Penguujian Sistem

penguujian

Halaman Depan Pelatihan Prediksi

**Penguujian**  
Load Data: BDR/1  
Load Jaringan Penguujian  
Reset

LT	Tahun	Bulan	Tanggal	Hari	Waktu	Jumlah Penumpang (actual)	Jumlah Penumpang (predicted)
----	-------	-------	---------	------	-------	---------------------------	------------------------------

### 3. Tampilan Prediksi Sistem

The screenshot shows a web application window titled "prediksi". The main interface is divided into a control panel on the left and a data table on the right. The control panel, labeled "Prediksi", contains input fields for "Tanggal" (01-Jan-2020), "Hari" (Rabu), and "Waktu" (10:30:00). Below these are buttons for "Load Data" (with a dropdown menu showing "BDR/2"), "Load Jaringan" (with a dropdown menu showing "Pilih Tanggal"), "Prediksi", and "Reset". The data table on the right has columns for "LT", "Tahun", "Bulan", "Tanggal", "Hari", "Waktu", and "Jumlah Penumpang (predicted)". A single row of data is visible: "1", "BDR/2", "2020", "Januari", "1", "Rabu", "10:30:00", and "71". A "UICalendar" dialog box is open over the table, displaying a calendar for January 2021. The date "24" is highlighted in yellow. The dialog box includes "Clear all", "OK", and "Cancel" buttons.

## Lampiran 2 Syntax Program

### Pelatihan.m

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

% Last Modified by GUIDE v2.5 04-Aug-2020 18:39:14

% Begin initialization code - DO NOT EDIT
gui_Singleton = 1;
gui_State = struct('gui_Name',       mfilename, ...
    'gui_Singleton',  gui_Singleton, ...
    'gui_OpeningFcn', @pelatihan_OpeningFcn, ...
    'gui_OutputFcn',  @pelatihan_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 pelatihan is made visible.
function pelatihan_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 pelatihan (see VARARGIN)

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

% Update handles structure
guidata(hObject, handles);
movegui(hObject, 'center');

warning off all;

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

% --- Outputs from this function are returned to the command line.
function varargout = pelatihan_OutputFcn(hObject, eventdata,
handles)
% varargout  cell array for returning output args (see VARARGOUT);
% hObject    handle to figure
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Get default command line output from handles structure
varargout{1} = handles.output;

% --- Executes on button press in pushbutton1.
function pushbutton1_Callback(hObject, eventdata, handles)
% hObject    handle to pushbutton1 (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    structure with handles and user data (see GUIDATA)

% menampilkan menu "browse file"
[nama_file, nama_path] = uigetfile('*.*xlsx');

```

```

% jika ada file yg dipilih maka akan mengeksekusi perintah di
bawah ini
if ~isequal(nama_file,0)
    % mereset button2
    set(handles.uitable1,'Data',[],'RowName',{' ' ' ' ' '})

    % membaca data dari file excel
    sheet = get(handles.popupmenu1,'Value');
    [~,~,data] =
xlsread(fullfile(nama_path,nama_file),sheet','','basic');
    data = data(2:end,:);
    data_tabel = data(8:1007,:);
    % menampilkan data pada tabel

set(handles.uitable1,'Data',data_tabel,'RowName',1:size(data_tabel
,1))
    % menyimpan variabel2 pada lokasi handles (lokasi penyimpanan
    % variabel di matlab) supaya bisa dipanggil oleh pushbutton
lain
handles.data = data;
handles.data_tabel = data_tabel;
handles.nama_file = nama_file;
handles.nama_path = nama_path;
guidata(hObject, handles)

% mereset button2
if get(handles radiobutton1,'Value')
    set(handles.pushbutton2,'Enable','on')
    set(handles.pushbutton3,'Enable','off')
    set(handles.pushbutton4,'Enable','off')
    set(handles.pushbutton5,'Enable','off')
else
    set(handles.pushbutton2,'Enable','off')
    set(handles.pushbutton3,'Enable','off')
    set(handles.pushbutton4,'Enable','off')
    set(handles.pushbutton5,'Enable','on')
end
else
    % jika tidak ada file yg dipilih maka akan kembali
    return
end

% --- Executes on selection change in popupmenu1.
function popupmenu1_Callback(hObject, eventdata, handles)
% hObject      handle to popupmenu1 (see GCBO)
% eventdata    reserved - to be defined in a future version of
MATLAB
% handles      structure with handles and user data (see GUIDATA)

% Hints: contents = cellstr(get(hObject,'String')) returns
popupmenu1 contents as cell array
%           contents{get(hObject,'Value')} returns selected item from
popupmenu1

```

```

try
    % mereset button2
    set(handles.uitable1, 'Data', [], 'RowName', {' ' ' ' ' '})

    % memanggil variabel2 yg ada di lokasi handles
    nama_file = handles.nama_file;
    nama_path = handles.nama_path;

    % membaca data dari file excel
    sheet = get(handles.popupmenu1, 'Value');
    [~,~,data] =
xlsread(fullfile(nama_path,nama_file),sheet,'','basic');
    data = data(2:end,:);
    data_tabel = data(8:1007,:);
    % menampilkan data pada tabel

set(handles.uitable1, 'Data', data_tabel, 'RowName', 1:size(data_tabel
,1))
    % menyimpan variabel2 pada lokasi handles (lokasi penyimpanan
% variabel di matlab) supaya bisa dipanggil oleh pushbutton
lain
handles.data = data;
handles.data_tabel = data_tabel;
guidata(hObject, handles)

    % mereset button2
    if get(handles.radiobutton1, 'Value')
        set(handles.pushbutton2, 'Enable', 'on')
        set(handles.pushbutton3, 'Enable', 'off')
        set(handles.pushbutton4, 'Enable', 'off')
        set(handles.pushbutton5, 'Enable', 'off')
    else
        set(handles.pushbutton2, 'Enable', 'off')
        set(handles.pushbutton3, 'Enable', 'off')
        set(handles.pushbutton4, 'Enable', 'off')
        set(handles.pushbutton5, 'Enable', 'on')
    end

catch
    return
end

% --- Executes during object creation, after setting all
properties.
function popupmenu1_CreateFcn(hObject, eventdata, handles)
% hObject    handle to popupmenu1 (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    empty - handles not created until after all
CreateFcns called

% Hint: popupmenu 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 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 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)

% membaca parameter JST
jumlah_neuron1 = str2double(get(handles.edit1,'String'));

val1 = get(handles.popupmenu2,'Value');
switch val1
    case 1
        fungsi_aktivasil = 'logsig';
    case 2
        fungsi_aktivasil = 'tansig';
end

val2 = get(handles.popupmenu3,'Value');

```

```

switch val2
    case 1
        fungsi_aktivasi2 = 'logsig';
    case 2
        fungsi_aktivasi2 = 'purelin';
    case 3
        fungsi_aktivasi2 = 'tansig';
end

val4 = get(handles.popupmenu4, 'Value');
switch val4
    case 1
        fungsi_pelatihan = 'traingdx_manual';
    case 2
        fungsi_pelatihan = 'traingdx';
    case 3
        fungsi_pelatihan = 'traingd';
    case 4
        fungsi_pelatihan = 'trainlm';
end

% memanggil variabel2 yg ada di lokasi handles
data = handles.data;
data_tabel = handles.data_tabel;

% membaca data jumlah penumpang
jumlah_penumpang = zeros(size(data,1),1);
for k = 1:size(data,1)
    jumlah_penumpang(k,1) = data{k,7};
end

% melakukan normalisasi data
max_data = max(jumlah_penumpang);
min_data = min(jumlah_penumpang);

[m,n] = size(jumlah_penumpang);
data_norm = zeros(m,n);
for x = 1:m
    for y = 1:n
        data_norm(x,y) = 0.1+0.8*(jumlah_penumpang(x,y) -
min_data)/(max_data-min_data);
    end
end

% menyusun data latih dan target latih
jumlah_data_latih = 1000;
jumlah_hari_latih = 8;
data_latih_norm = zeros(jumlah_data_latih,jumlah_hari_latih);
target_latih_asli = zeros(jumlah_data_latih,jumlah_hari_latih);
for m = 1:jumlah_data_latih
    for n = 1:jumlah_hari_latih
        data_latih_norm(m,n) = data_norm(m+n-1);
        target_latih_asli(m,n) = jumlah_penumpang(m+n-1);
    end
end
end

```

```

target_latih_asli = target_latih_asli(:,end);
target_latih_asli = target_latih_asli';
data_latih = data_latih_norm;
data_latih_norm = data_latih(:,1:end-1);
target_latih_norm = data_latih(:,end);

data_latih_norm = data_latih_norm';
target_latih_norm = target_latih_norm';
save target_latih_norm target_latih_norm

% membangun arsitektur jaringan syaraf tiruan backpropagation
net = newff(minmax(data_latih_norm), [jumlah_neuron1
1], {fungsi_aktivasi1, ...
fungsi_aktivasi2}, fungsi_pelatihan);

% jika menggunakan bobot random maka
if get(handles.radiobutton1, 'Value')
    % bobot diinisialisasi secara acak
    bobot_hidden = net.IW{1,1};
    bobot_keluaran = net.LW{2,1};
    bias_hidden = net.b{1,1};
    bias_keluaran = net.b{2,1};
    % menyimpan variabel2 bobot pada lokasi handles agar dapat
    dipanggil oleh
    % pushbutton yg lain
    handles.bobot_hidden = bobot_hidden;
    handles.bobot_keluaran = bobot_keluaran;
    handles.bias_hidden = bias_hidden;
    handles.bias_keluaran = bias_keluaran;
    guidata(hObject, handles)
else
    % jika load bobot maka
    % memanggil bobot yg ada di lokasi handles
    net.IW{1,1} = handles.bobot_hidden;
    net.LW{2,1} = handles.bobot_keluaran;
    net.b{1,1} = handles.bias_hidden;
    net.b{2,1} = handles.bias_keluaran;
end

val3 = get(handles.popupmenu5, 'Value');
switch val3
    case 1
        error_goal = 1e-6;
    case 2
        error_goal = 1e-5;
    case 3
        error_goal = 1e-4;
end

jumlah_epoch = str2double(get(handles.edit5, 'String'));
laju_pembelajaran = str2double(get(handles.edit6, 'String'));

net.trainParam.goal = error_goal;
net.trainParam.epochs = jumlah_epoch;

```

```

net.trainParam.lr = laju_pembelajaran;

% pelatihan jaringan
net = train(net,data_latih_norm,target_latih_norm);

% membaca hasil pelatihan
nilai_keluaran = sim(net,data_latih_norm);
save nilai_keluaran nilai_keluaran

% menghitung nilai MSE dan MAPE hasil pelatihan
nilai_mse = mse(nilai_keluaran,target_latih_norm);
diff = nilai_keluaran-target_latih_norm;
nilai_mape =
(100/numel(diff))*(sum(sum(abs(diff)/target_latih_norm)));

% melakukan denormalisasi terhadap hasil pelatihan
nilai_keluaran = round(abs((nilai_keluaran-0.1)*(max_data-
min_data)/0.8)+min_data);

% menampilkan hasil pelatihan pada tabel
for k = 1:size(data_tabel,1)
    data_tabel{k,8} = nilai_keluaran(k);
end
set(handles.uitable1,'Data',data_tabel,'RowName',1:size(data_tabel
,1))

% menampilkan grafik MSE hasil pelatihan
figure
plot(target_latih_asli,'o-','LineWidth',2,'MarkerSize',4)
hold on
grid on
plot(nilai_keluaran,'o-','LineWidth',2,'MarkerSize',4)
hold off
title(['Grafik Hasil Pelatihan JST dg MSE =
',num2str(nilai_mse),...
    ' dan MAPE = ',num2str(nilai_mape),'%'])
xlabel('Urutan data')
ylabel('Jumlah Penumpang')
legend('Target Asli','Hasil Pelatihan')

% mereset button2
set(handles.pushbutton3,'Enable','on')
set(handles.pushbutton4,'Enable','on')

% menyimpan variabel2 pada lokasi handles (lokasi penyimpanan
% variabel di matlab) supaya bisa dipanggil oleh pushbutton lain
handles.net = net;
guidata(hObject, handles)

% --- Executes on selection change in popupmenu2.
function popupmenu2_Callback(hObject, eventdata, handles)
% hObject    handle to popupmenu2 (see GCBO)

```

```

% eventdata reserved - to be defined in a future version of
MATLAB
% handles structure with handles and user data (see GUIDATA)

% Hints: contents = cellstr(get(hObject,'String')) returns
popupmenu2 contents as cell array
% contents{get(hObject,'Value')} returns selected item from
popupmenu2

% --- Executes during object creation, after setting all
properties.
function popupmenu2_CreateFcn(hObject, eventdata, handles)
% hObject handle to popupmenu2 (see GCBO)
% eventdata reserved - to be defined in a future version of
MATLAB
% handles empty - handles not created until after all
CreateFcns called

% Hint: popupmenu 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 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 selection change in popupmenu3.
function popupmenu3_Callback(hObject, eventdata, handles)
% hObject      handle to popupmenu3 (see GCBO)
% eventdata    reserved - to be defined in a future version of
MATLAB
% handles      structure with handles and user data (see GUIDATA)

% Hints: contents = cellstr(get(hObject,'String')) returns
popupmenu3 contents as cell array
%           contents{get(hObject,'Value')} returns selected item from
popupmenu3

% --- Executes during object creation, after setting all
properties.
function popupmenu3_CreateFcn(hObject, eventdata, handles)
% hObject      handle to popupmenu3 (see GCBO)
% eventdata    reserved - to be defined in a future version of
MATLAB
% handles      empty - handles not created until after all
CreateFcns called

% Hint: popupmenu 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

function edit6_Callback(hObject, eventdata, handles)
% hObject    handle to edit6 (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 edit6 as text
%     str2double(get(hObject,'String')) returns contents of
edit6 as a double

% --- Executes during object creation, after setting all
properties.
function edit6_CreateFcn(hObject, eventdata, handles)
% hObject    handle to edit6 (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 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)

% memanggil variabel2 bobot yg ada pada lokasi handles
bobot_hidden = handles.bobot_hidden;
bobot_keluaran = handles.bobot_keluaran;
bias_hidden = handles.bias_hidden;
bias_keluaran = handles.bias_keluaran;

% menampilkan menu "save file"
[nama_file,~] = uiputfile({'*.mat'});

```

```

% jika ada file yg disimpan maka akan mengeksekusi perintah di
bawah ini
if ~isequal(nama_file,0)
    % menyimpan variabel2 bobot

save(nama_file, 'bobot_hidden', 'bobot_keluaran', 'bias_hidden', 'bias
_keluaran');
else
    % jika tidak ada file yg disimpan maka akan kembali
    return
end

% --- 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)

% menampilkan menu "save file"
[nama_file,~] = uiputfile({'*.mat'});

% memanggil variabel net yg ada pada lokasi handles
net = handles.net;

% jika ada file yg disimpan maka akan mengeksekusi perintah di
bawah ini
if ~isequal(nama_file,0)
    % menyimpan variabel net_keluaran
    save(nama_file, 'net');
else
    % jika tidak ada file yg disimpan maka akan kembali
    return
end

% --- Executes on selection change in popupmenu4.
function popupmenu4_Callback(hObject, eventdata, handles)
% hObject    handle to popupmenu4 (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: contents = cellstr(get(hObject,'String')) returns
popupmenu4 contents as cell array
%         contents{get(hObject,'Value')} returns selected item from
popupmenu4

% --- Executes during object creation, after setting all
properties.
function popupmenu4_CreateFcn(hObject, eventdata, handles)
% hObject    handle to popupmenu4 (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB

```



```

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

% Hint: popupmenu 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 selection change in popupmenu5.
function popupmenu5_Callback(hObject, eventdata, handles)
% hObject    handle to popupmenu5 (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: contents = cellstr(get(hObject,'String')) returns
popupmenu5 contents as cell array
%       contents{get(hObject,'Value')} returns selected item from
popupmenu5

% --- Executes during object creation, after setting all
properties.
function popupmenu5_CreateFcn(hObject, eventdata, handles)
% hObject    handle to popupmenu5 (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    empty - handles not created until after all
CreateFcns called

% Hint: popupmenu 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 radiobutton1.
function radiobutton1_Callback(hObject, eventdata, handles)
% hObject    handle to radiobutton1 (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hint: get(hObject,'Value') returns toggle state of radiobutton1

% mereset button2
set(handles.radiobutton1,'Value',1)

```

```

set(handles.radiobutton2,'Value',0)

set(handles.pushbutton1,'Enable','on')
set(handles.pushbutton2,'Enable','off')
set(handles.pushbutton3,'Enable','off')
set(handles.pushbutton4,'Enable','off')
set(handles.pushbutton5,'Enable','off')

set(handles.edit1,'String','100')
set(handles.edit5,'String','1000')
set(handles.edit6,'String','0.1')

set(handles.popupmenu1,'Value',1)
set(handles.popupmenu2,'Value',1)
set(handles.popupmenu3,'Value',1)
set(handles.popupmenu4,'Value',1)
set(handles.popupmenu5,'Value',1)

set(handles.uitable1,'Data',[],'RowName',{' ' ' ' ' '})

% --- Executes on button press in radiobutton2.
function radiobutton2_Callback(hObject, eventdata, handles)
% hObject    handle to radiobutton2 (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hint: get(hObject,'Value') returns toggle state of radiobutton2

% mereset button2
set(handles.radiobutton1,'Value',0)
set(handles.radiobutton2,'Value',1)

set(handles.pushbutton1,'Enable','on')
set(handles.pushbutton2,'Enable','off')
set(handles.pushbutton3,'Enable','off')
set(handles.pushbutton4,'Enable','off')
set(handles.pushbutton5,'Enable','off')

set(handles.edit1,'String','100')
set(handles.edit5,'String','1000')
set(handles.edit6,'String','0.1')

set(handles.popupmenu1,'Value',1)
set(handles.popupmenu2,'Value',1)
set(handles.popupmenu3,'Value',1)
set(handles.popupmenu4,'Value',1)
set(handles.popupmenu5,'Value',1)

set(handles.uitable1,'Data',[],'RowName',{' ' ' ' ' '})

% --- 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)

% menampilkan menu "browse file"
[nama_file,nama_path] = uigetfile({'*.mat'});

% jika ada file yg dipilih maka akan mengeksekusi perintah di
bawah ini
if ~isequal(nama_file,0)
    % load file bobot
    load(fullfile(nama_path,nama_file))
    % menyimpan variabel2 bobot pada lokasi handles
    % agar dapat dipanggil oleh pushbutton lain
    handles.bobot_hidden = bobot_hidden;
    handles.bobot_keluaran = bobot_keluaran;
    handles.bias_hidden = bias_hidden;
    handles.bias_keluaran = bias_keluaran;
    guidata(hObject, handles)

    % mereset button2
    set(handles.pushbutton2,'Enable','on')
    set(handles.pushbutton3,'Enable','off')
    set(handles.pushbutton4,'Enable','off')
else
    % jika tidak ada file yg dipilih maka akan kembali
    return
end

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

% menutup halaman pelatihan
close all;
% membuka halaman depan
guidata(halaman_depan);

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

% menutup halaman pelatihan
close all;

```

```

% membuka halaman pengujian
guidata(pengujian);

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

% menutup halaman prediksi
close all;
% membuka halaman prediksi
guidata(prediksi);

```

### **Pengujian.m**

```

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

% Last Modified by GUIDE v2.5 04-Aug-2020 17:44:46

```

```

% Begin initialization code - DO NOT EDIT
gui_Singleton = 1;
gui_State = struct('gui_Name',       mfilename, ...
                  'gui_Singleton',  gui_Singleton, ...
                  'gui_OpeningFcn', @penguajian_OpeningFcn, ...
                  'gui_OutputFcn',  @penguajian_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 pelatihan is made visible.
function penguajian_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 pelatihan (see VARARGIN)

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

% Update handles structure
guidata(hObject, handles);
movegui(hObject, 'center');

warning off all;

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

% --- Outputs from this function are returned to the command line.
function varargout = penguajian_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

```



```

%         contents{get(hObject,'Value')} returns selected item from
popupmenu1

try
    % mereset button2
    set(handles.uitable1,'Data',[],'RowName',{' ' ' ' ' ' ' '})

    % memanggil variabel2 yg ada di lokasi handles
    nama_file = handles.nama_file;
    nama_path = handles.nama_path;

    % membaca data dari file excel
    sheet = get(handles.popupmenu1,'Value');
    [~,~,data] =
xlsread(fullfile(nama_path,nama_file),sheet,'','basic');
    data = data(1002:end,:);
    data_tabel = data(8:end,:);
    % menampilkan data pada tabel

set(handles.uitable1,'Data',data_tabel,'RowName',1:size(data_tabel
,1))
    % menyimpan variabel2 pada lokasi handles (lokasi penyimpanan
% variabel di matlab) supaya bisa dipanggil oleh pushbutton
lain
    handles.data = data;
    handles.data_tabel = data_tabel;
    guidata(hObject, handles)

    % mereset button2
    set(handles.pushbutton5,'Enable','on')
    set(handles.pushbutton2,'Enable','off')
catch
    return
end

% --- Executes during object creation, after setting all
properties.
function popupmenu1_CreateFcn(hObject, eventdata, handles)
% hObject    handle to popupmenu1 (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    empty - handles not created until after all
CreateFcns called

% Hint: popupmenu 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)

% memanggil variabel2 yg ada di lokasi handles
data = handles.data;
data_tabel = handles.data_tabel;
net = handles.net;

% membaca data jumlah penumpang
jumlah_penumpang = zeros(size(data,1),1);
for k = 1:size(data,1)
    jumlah_penumpang(k,1) = data{k,7};
end

% melakukan normalisasi data
max_data = max(jumlah_penumpang);
min_data = min(jumlah_penumpang);

[m,n] = size(jumlah_penumpang);
data_norm = zeros(m,n);
for x = 1:m
    for y = 1:n
        data_norm(x,y) = 0.1+0.8*(jumlah_penumpang(x,y) -
min_data)/(max_data-min_data);
    end
end

% menyusun data uji dan target uji
jumlah_data_uji = size(data_norm,1)-7;
jumlah_hari_uji = 8;
data_uji_norm = zeros(jumlah_data_uji,jumlah_hari_uji);
target_uji_asli = zeros(jumlah_data_uji,jumlah_hari_uji);
for m = 1:jumlah_data_uji
    for n = 1:jumlah_hari_uji
        data_uji_norm(m,n) = data_norm(m+n-1);
        target_uji_asli(m,n) = jumlah_penumpang(m+n-1);
    end
end

target_uji_asli = target_uji_asli(:,end);
target_uji_asli = target_uji_asli';
data_uji = data_uji_norm;
data_uji_norm = data_uji(:,1:end-1);
target_uji_norm = data_uji(:,end);

data_uji_norm = data_uji_norm';
target_uji_norm = target_uji_norm';

% membaca hasil pengujian
nilai_keluaran = sim(net,data_uji_norm);

% menghitung nilai MSE dan MAPE hasil pengujian
nilai_mse = mse(nilai_keluaran,target_uji_norm);
diff = nilai_keluaran-target_uji_norm;

```



```

nilai_mape =
(100/numel(diff))*(sum(sum(abs(diff)/target_uji_norm)));

% melakukan denormalisasi terhadap hasil pengujian
nilai_keluaran = round(abs((nilai_keluaran-0.1)*(max_data-
min_data)/0.8)+min_data);

% menampilkan hasil pelatihan pada tabel
for k = 1:size(data_tabel,1)
    data_tabel{k,8} = nilai_keluaran(k);
end
set(handles.uitable1,'Data',data_tabel,'RowName',1:size(data_tabel
,1))

% menampilkan grafik MSE hasil pengujian
figure
plot(target_uji_asli,'ko-','LineWidth',2,'MarkerSize',4)
hold on
grid on
plot(nilai_keluaran,'go-','LineWidth',2,'MarkerSize',4)
hold off
title(['Grafik Hasil Pengujian JST dg MSE =
',num2str(nilai_mse),...
' dan MAPE = ',num2str(nilai_mape),'%'])
xlabel('Urutan data')
ylabel('Jumlah Penumpang')
legend('Target Asli','Hasil Pelatihan')

% --- 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)

% mereset button2
set(handles.pushbutton2,'Enable','off')
set(handles.pushbutton5,'Enable','off')

set(handles.popupmenu1,'Value',1)

set(handles.uitable1,'Data',[],'RowName',{' ' ' ' ' '})

% --- 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)

% menampilkan menu "browse file"
[nama_file,nama_path] = uigetfile({'*.mat'});

```

```

% jika ada file yg dipilih maka akan mengeksekusi perintah di
bawah ini
if ~isequal(nama_file,0)
    % load file bobot
    load(fullfile(nama_path,nama_file))
    % menyimpan variabel net pada lokasi handles
    % agar dapat dipanggil oleh pushbutton lain
    handles.net = net;
    guidata(hObject, handles)

    % mereset button2
    set(handles.pushbutton2,'Enable','on')
else
    % jika tidak ada file yg dipilih maka akan kembali
    return
end

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

% menutup halaman pengujian
close all;
% membuka halaman depan
guidata(halaman_depan);

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

% menutup halaman pengujian
close all;
% membuka halaman pelatihan
guidata(pelatihan);

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

% menutup halaman pengujian
close all;
% membuka halaman prediksi

```

```
guidata(prediksi);
```

## Prediksi.m

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

% Last Modified by GUIDE v2.5 24-Jan-2021 19:31:13

% Begin initialization code - DO NOT EDIT
gui_Singleton = 1;
gui_State = struct('gui_Name',       mfilename, ...
    'gui_Singleton',  gui_Singleton, ...
    'gui_OpeningFcn', @prediksi_OpeningFcn, ...
    'gui_OutputFcn',  @prediksi_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 prediksi is made visible.
function prediksi_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 prediksi (see VARARGIN)

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

% Update handles structure
guidata(hObject, handles);
movegui(hObject, 'center');

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

% --- Outputs from this function are returned to the command line.
function varargout = prediksi_OutputFcn(hObject, eventdata,
handles)
% varargout  cell array for returning output args (see VARARGOUT);
% hObject    handle to figure
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Get default command line output from handles structure
varargout{1} = handles.output;

% --- Executes on button press in pushbutton1.
function pushbutton1_Callback(hObject, eventdata, handles)
% hObject    handle to pushbutton1 (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    structure with handles and user data (see GUIDATA)

% menampilkan menu "browse file"
[nama_file, nama_path] = uigetfile({'*.mat'});

% jika ada file yg dipilih maka akan mengeksekusi perintah di
bawah ini
if ~isequal(nama_file,0)
    % load file bobot

```

```

        load(fullfile(nama_path,nama_file))
        % menyimpan variabel net pada lokasi handles
        % agar dapat dipanggil oleh pushbutton lain
        handles.net = net;
        guidata(hObject, handles)

        % mereset button2
        set(handles.pushbutton5, 'Enable', 'on')
    else
        % jika tidak ada file yg dipilih maka akan kembali
        return
    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)

% mereset button2
set(handles.pushbutton1, 'Enable', 'off')
set(handles.pushbutton3, 'Enable', 'off')
set(handles.pushbutton5, 'Enable', 'off')

set(handles.popupmenu1, 'Value', 1)
set(handles.uitable1, 'Data', [], 'RowName', {'' ' ' ' ' ' '})

set(handles.edit1, 'String', '')
set(handles.edit2, 'String', '')
set(handles.edit3, 'String', '')

% --- 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)

% membaca tahun, bulan, dan tanggal pada GUI
str = get(handles.edit1, 'String');
date_vec = datevec(str);

tahun = date_vec(1);
bulan = date_vec(2);
tanggal = date_vec(3);

hari = datetime(tahun, bulan, tanggal, 'Format', 'eeee');
switch char(hari)
    case 'Sunday'
        hari = 'Minggu';
    case 'Monday'

```

```

        hari = 'Senin';
    case 'Tuesday'
        hari = 'Selasa';
    case 'Wednesday'
        hari = 'Rabu';
    case 'Thursday'
        hari = 'Kamis';
    case 'Friday'
        hari = 'Jumat';
    case 'Saturday'
        hari = 'Sabtu';
end

% menampilkan hari pada edit text
set(handles.edit2, 'String', hari)

% membaca trayek pada GUI
val = get(handles.popupmenu1, 'Value');
switch val
    case 1
        waktu = '09:30:00';
    case 2
        waktu = '16:00:00';
    case 3
        waktu = '13:30:00';
    case 4
        waktu = '10:30:00';
    case 5
        waktu = '16:00:00';
end

% menampilkan waktu pada edit text
set(handles.edit3, 'String', waktu)

% memanggil variabel2 yg ada di lokasi handles
data = handles.data;
net = handles.net;

% membaca data jumlah penumpang
jumlah_penumpang = zeros(size(data,1),1);
for k = 1:size(data,1)
    jumlah_penumpang(k,1) = data{k,7};
end

% melakukan normalisasi data
max_data = max(jumlah_penumpang);
min_data = min(jumlah_penumpang);

[m,n] = size(jumlah_penumpang);
data_norm = zeros(m,n);
for x = 1:m
    for y = 1:n
        data_norm(x,y) = 0.1+0.8*(jumlah_penumpang(x,y) -
min_data)/(max_data-min_data);
    end
end

```

```

end

% menyusun data uji dan target uji
jumlah_data_uji = size(data_norm,1)-7;
jumlah_hari_uji = 8;
data_uji_norm = zeros(jumlah_data_uji,jumlah_hari_uji);
target_uji_asli = zeros(jumlah_data_uji,jumlah_hari_uji);
for m = 1:jumlah_data_uji
    for n = 1:jumlah_hari_uji
        data_uji_norm(m,n) = data_norm(m+n-1);
        target_uji_asli(m,n) = jumlah_penumpang(m+n-1);
    end
end

data_uji = data_uji_norm;
data_uji_norm = data_uji(end,1:end-1);
data_uji_norm = data_uji_norm';

% membaca hasil pengujian
nilai_keluaran_norm = sim(net,data_uji_norm);

% membaca durasi hari prediksi
t1 = datetime(2019,12,31);
t2 = datetime(tahun,bulan,tanggal);

if t1<t2
    dt = between(t1,t2,'Days');
    dt = char(dt);
    for k = 1:numel(dt)
        if isequal(dt(k),'d')
            dt(k) = '';
        end
    end
    dt = str2double(dt);

    for n = 1:dt
        data_uji_norm = [data_uji_norm(end-5:end);...
            nilai_keluaran_norm];
        nilai_keluaran_norm = sim(net,data_uji_norm);
    end

    % melakukan denormalisasi terhadap hasil pelatihan
    nilai_keluaran = round(abs((nilai_keluaran_norm-0.1)*(max_data-
min_data)/0.8)+min_data);

% menampilkan hasil prediksi pada tabel
LT = get(handles.popupmenu1,'Value');
switch LT
    case 1
        LT = 'BDR/1';
    case 2
        LT = 'AKDP/1';
    case 3
        LT = 'AKAP/1';
    case 4

```





```

% 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

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 pushbutton4.
function pushbutton4_Callback(hObject, eventdata, handles)

```



```

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

% Hint: popupmenu 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

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

% --- 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)

uicalendar('DestinationUI', {handles.edit1, 'string'})

```

```

set(handles.pushbutton3,'Enable','on')

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

% menutup halaman prediksi
close all;
% membuka halaman depan
guidata(halaman_depan);

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

% menutup halaman prediksi
close all;
% membuka halaman pelatihan
guidata(pelatihan);

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

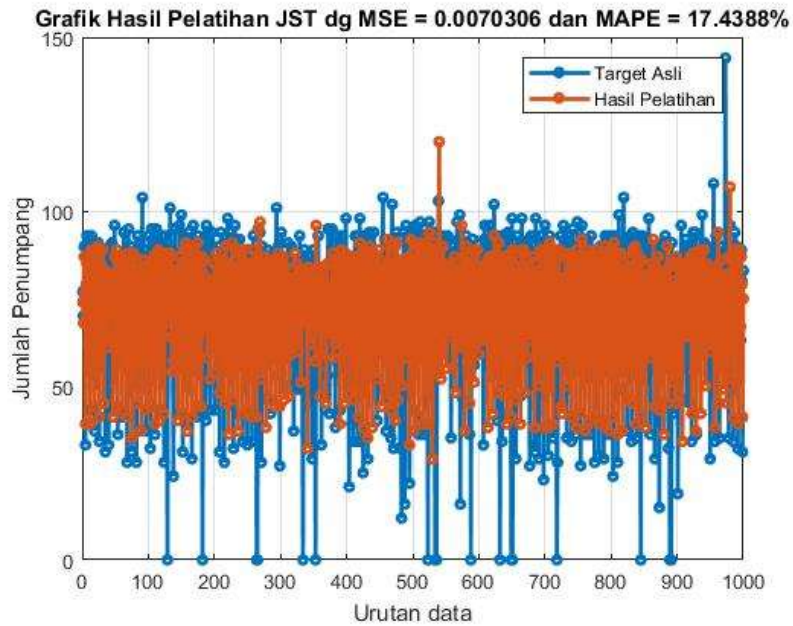
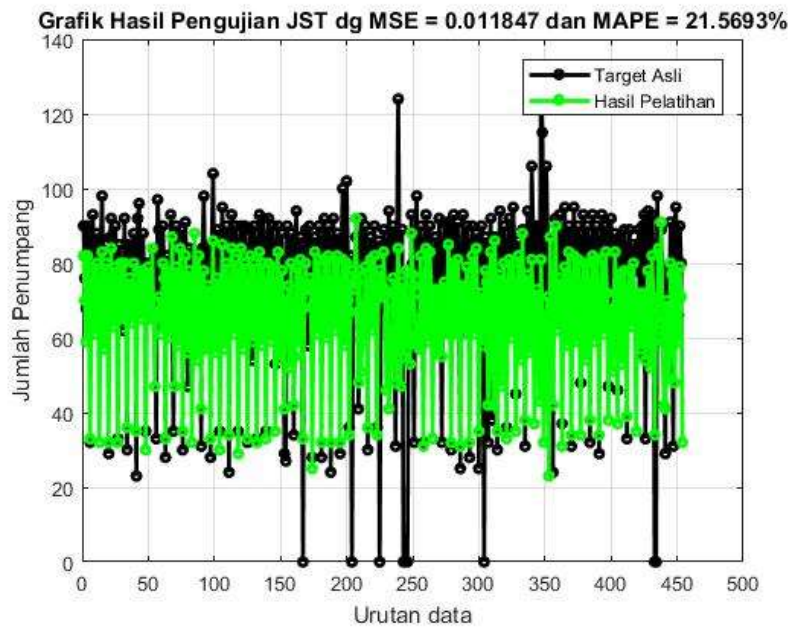
% menutup halaman prediksi
close all;
% membuka halaman pengujian
guidata(pengujian);

```

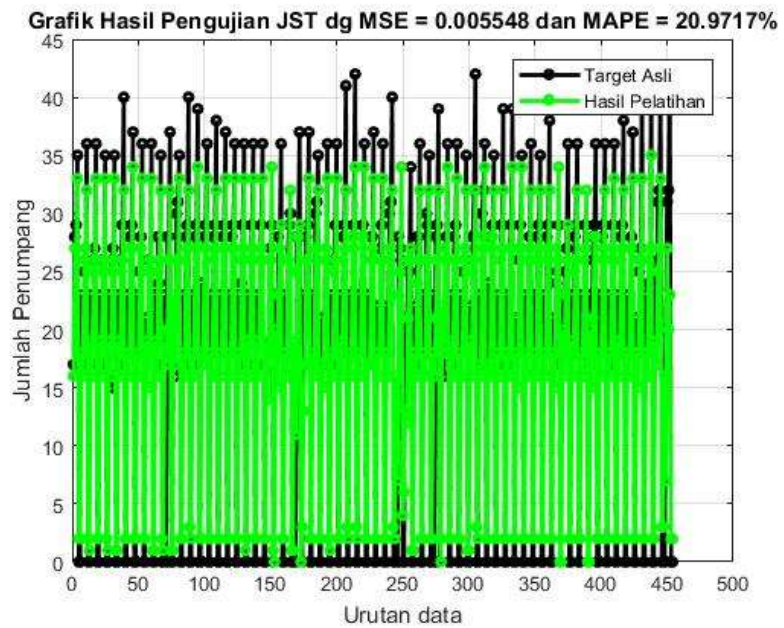
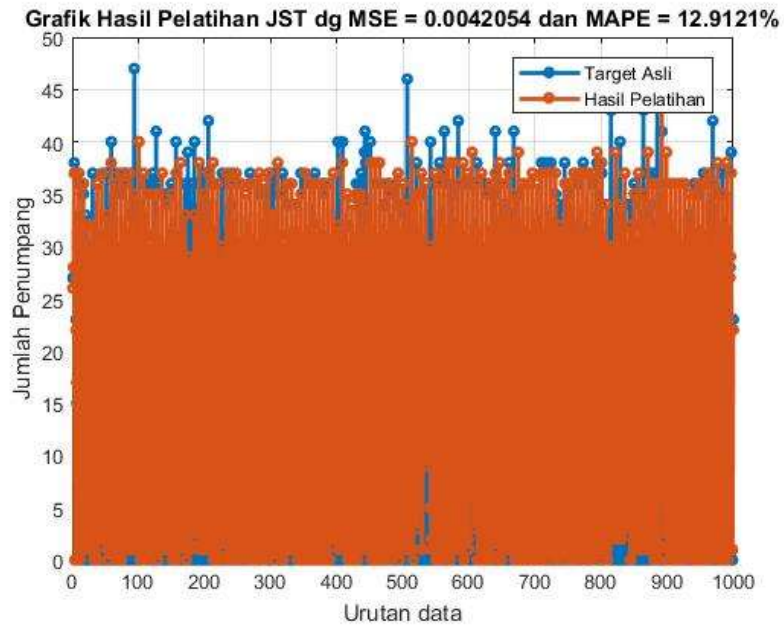
Lampiran 3

Plot hasil pengujian dan pelatihan setiap trayek sebagai berikut.

a. Trayek BDR/1

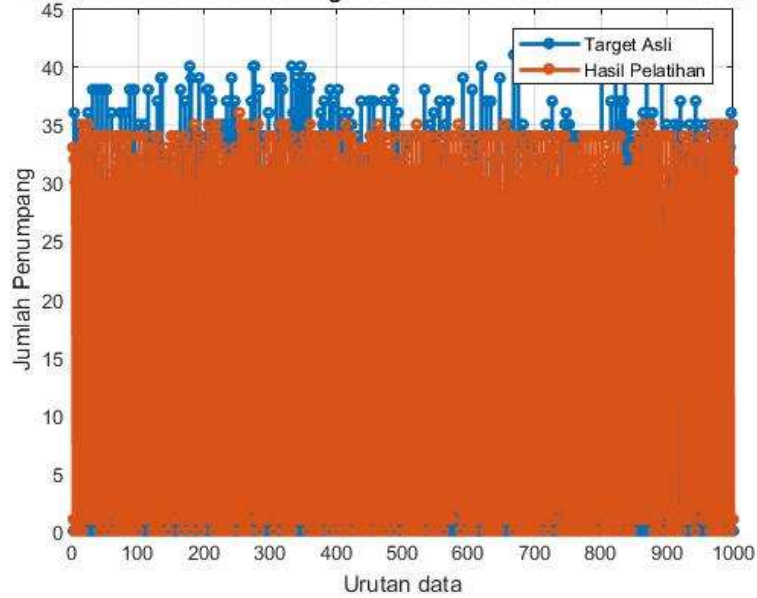


b. Trayek AKDP/1

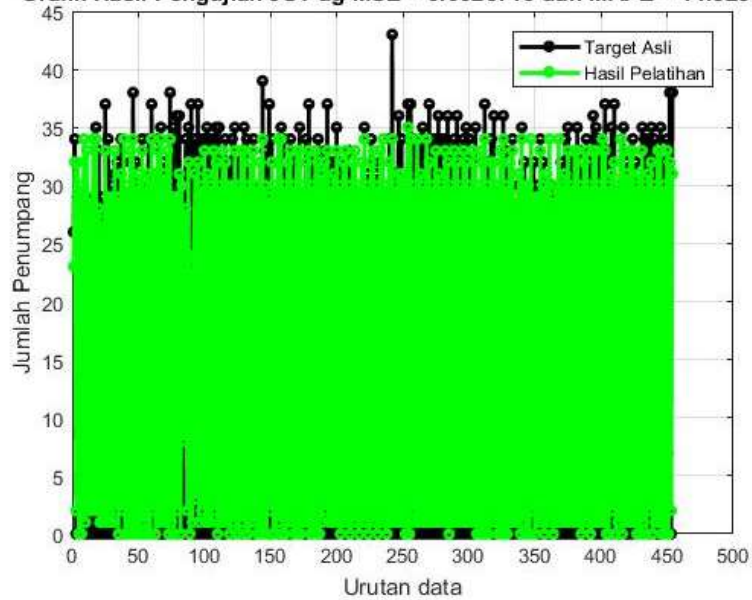


c. Trayek AKAP

Grafik Hasil Pelatihan JST dg MSE = 0.0050406 dan MAPE = 16.8987%

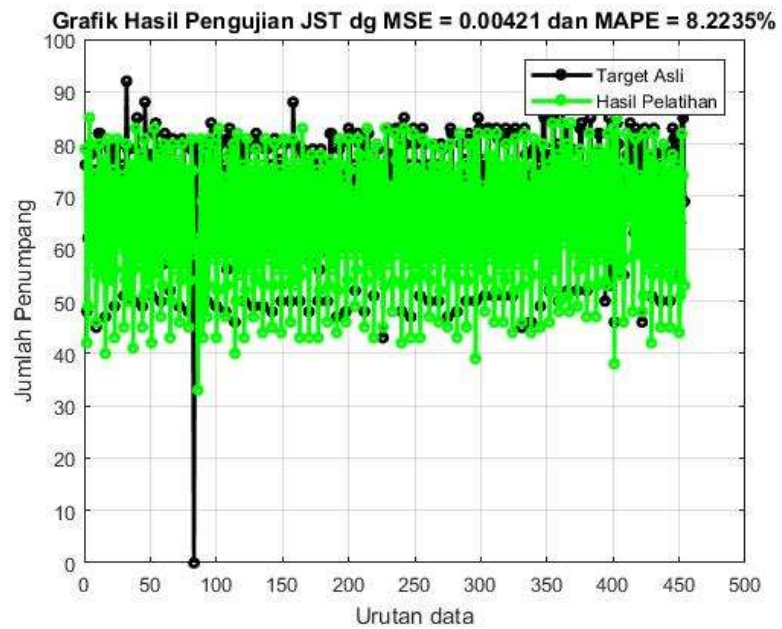
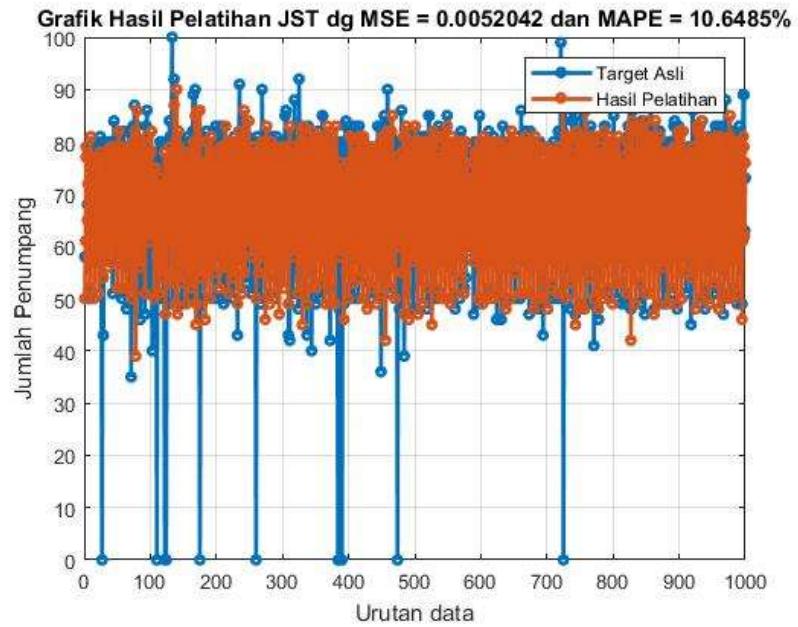


Grafik Hasil Pengujian JST dg MSE = 0.0026719 dan MAPE = 11.3297%

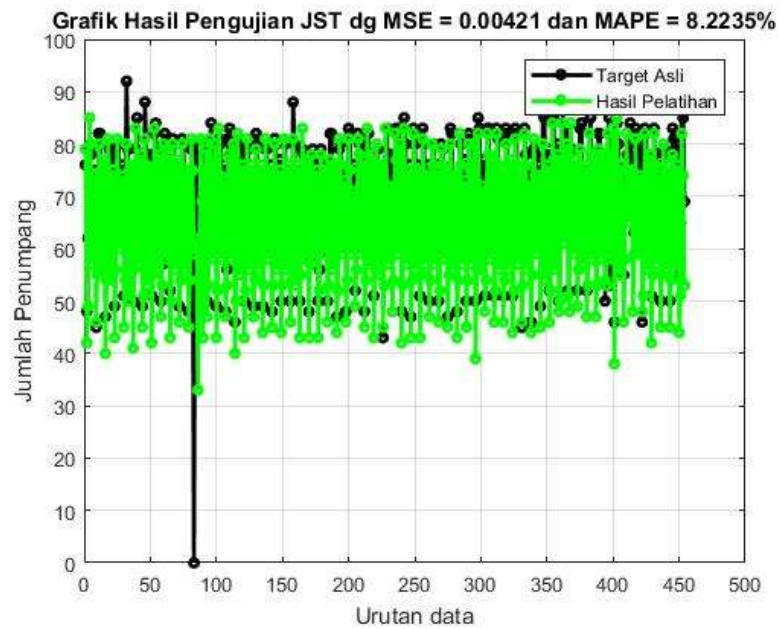
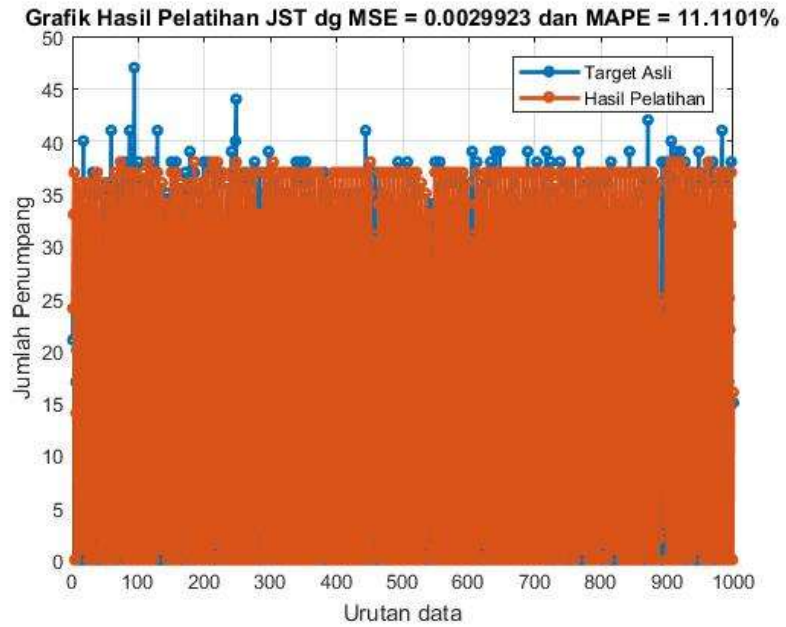




d. Trayek BDR/2



e. Trayek AKDP/2



# LEMBAR PERBAIKAN SKRIPSI

## “SISTEM PREDIKSI PENUMPANNG BUS”

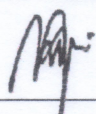
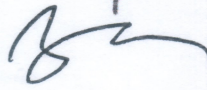

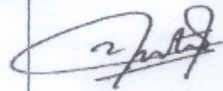
OLEH:

**ISMAYANTI**  
**D42116016**

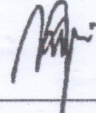
Skripsi ini telah dipertahankan pada Ujian Akhir Sarjana tanggal 7 Juli 2021.

Telah dilakukan perbaikan penulisan dan isi skripsi berdasarkan usulan dari penguji dan pembimbing skripsi.

Persetujuan perbaikan oleh tim penguji:

	Nama	Tanda Tangan
Ketua	Dr. Ir. Ingrid Nurtanio, M.T.	
Sekretaris	Dr. Indrabayu, S.T., M.T., M.Bus.Sys.	
Anggota	Elly Warni, S.T., M.T.	
	Dr. Eng. Intan Sari Areni, S.T., M.T.	

Persetujuan Perbaikan oleh pembimbing:

Pembimbing	Nama	Tanda Tangan
I	Dr. Ir. Ingrid Nurtanio, M.T.	
II	Dr. Indrabayu, S.T., M.T., M.Bus.Sys.	