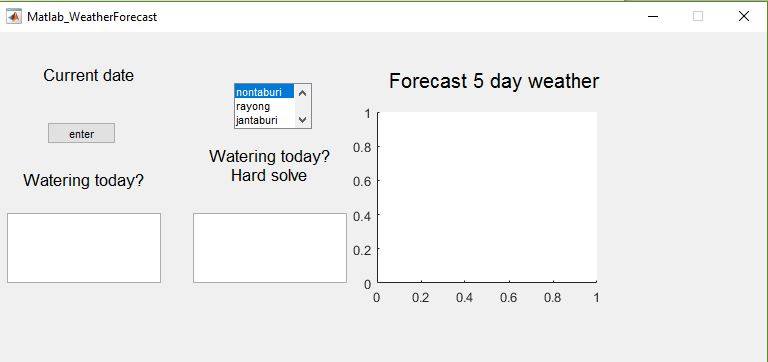
**แบบฟอร์มการส่งงาน**

**หน้าจอของโปรแกรมหลัก**



**การกำหนดชื่อ (Tag)**

1. **pushbutton1** ปุ่มกดเพื่อเริ่มการวิเคราะห์
2. **listbox** กล่องเลือกจังหวัด
3. **water** label แสดงว่าจะรดน้ำต้นไม้ไหม จากการพยากรณ์ 5 วัน
4. **water2** label แสดงว่าจะรดน้ำต้นไม้ไหม จากการพยากรณ์อากาศแบบย้อนหลัง 4 ปี
5. **axe2** แสดงกราฟการพยากรณ์ 5 วัน

**การดึงข้อมูลจาก wunderground.com**

1. **URL ที่ดึงจากเว็บ**

**รับค่าพยากรณ์อากาศ 5 วัน**

[http://api.wunderground.com/api/b728a7436f25b9f2/forecast10day/q/TH/Nonthaburi.json](http://api.wunderground.com/api/b728a7436f25b9f2/forecast10day/q/CA/San_Francisco.json)  นนทบุรี

[http://api.wunderground.com/api/b728a7436f25b9f2/forecast10day/q/TH/Rayong.json](http://api.wunderground.com/api/b728a7436f25b9f2/forecast10day/q/CA/San_Francisco.json)  ระยอง

[http://api.wunderground.com/api/b728a7436f25b9f2/forecast10day/q/TH/Chanthaburi.json](http://api.wunderground.com/api/b728a7436f25b9f2/forecast10day/q/CA/San_Francisco.json)   จันทบุรี

**รับค่าพยากรณ์อากาศแบบย้อนหลัง 4 ปี ปีละ 2 วัน** (เพื่อให้ไม่เกิน 10 request ใน 1 นาที) โดย เอาวันปัจจุบัน(14)และย้อนหลัง 1 วัน(13) ของ 4 ปีที่แล้ว

[http://api.wunderground.com/api/b728a7436f25b9f2/history\_20160314/q/](http://api.wunderground.com/api/b728a7436f25b9f2/history_20060405/q/CA/San_Francisco.json)[TH/Nonthaburi.json](http://api.wunderground.com/api/b728a7436f25b9f2/forecast10day/q/CA/San_Francisco.json)  วันที่ 14/03/2016

[http://api.wunderground.com/api/b728a7436f25b9f2/history\_20160314/q/](http://api.wunderground.com/api/b728a7436f25b9f2/history_20060405/q/CA/San_Francisco.json)[TH/Nonthaburi.json](http://api.wunderground.com/api/b728a7436f25b9f2/forecast10day/q/CA/San_Francisco.json)  วันที่ 13/03/2016

[http://api.wunderground.com/api/b728a7436f25b9f2/history\_20160314/q/](http://api.wunderground.com/api/b728a7436f25b9f2/history_20060405/q/CA/San_Francisco.json)[TH/Nonthaburi.json](http://api.wunderground.com/api/b728a7436f25b9f2/forecast10day/q/CA/San_Francisco.json)  วันที่ 14/03/2015

[http://api.wunderground.com/api/b728a7436f25b9f2/history\_20160314/q/](http://api.wunderground.com/api/b728a7436f25b9f2/history_20060405/q/CA/San_Francisco.json)[TH/Nonthaburi.json](http://api.wunderground.com/api/b728a7436f25b9f2/forecast10day/q/CA/San_Francisco.json)  วันที่ 13/03/2015

[http://api.wunderground.com/api/b728a7436f25b9f2/history\_20160314/q/](http://api.wunderground.com/api/b728a7436f25b9f2/history_20060405/q/CA/San_Francisco.json)[TH/Nonthaburi.json](http://api.wunderground.com/api/b728a7436f25b9f2/forecast10day/q/CA/San_Francisco.json)  วันที่ 14/03/2014

[http://api.wunderground.com/api/b728a7436f25b9f2/history\_20160314/q/](http://api.wunderground.com/api/b728a7436f25b9f2/history_20060405/q/CA/San_Francisco.json)[TH/Nonthaburi.json](http://api.wunderground.com/api/b728a7436f25b9f2/forecast10day/q/CA/San_Francisco.json)  วันที่ 13/03/2014

[http://api.wunderground.com/api/b728a7436f25b9f2/history\_20160314/q/](http://api.wunderground.com/api/b728a7436f25b9f2/history_20060405/q/CA/San_Francisco.json)[TH/Nonthaburi.json](http://api.wunderground.com/api/b728a7436f25b9f2/forecast10day/q/CA/San_Francisco.json)  วันที่ 14/03/2013

[http://api.wunderground.com/api/b728a7436f25b9f2/history\_20160314/q/](http://api.wunderground.com/api/b728a7436f25b9f2/history_20060405/q/CA/San_Francisco.json)[TH/Nonthaburi.json](http://api.wunderground.com/api/b728a7436f25b9f2/forecast10day/q/CA/San_Francisco.json)  วันที่ 13/03/2013

1. **ตัวแปรที่ดึงจาก response**

**รับค่าพยากรณ์อากาศ 5 วัน**

**qpf\_allday** ปริมาณน้ำฝน ในหน่วย cm

**รับค่าพยากรณ์อากาศ 5 วัน**

**dailysummary.rain** ค่าน้ำฝนในวันนั้น(ไม่ทราบหน่วย)

**โค้ดสำหรับการตัดสินใจ**

**รับค่าพยากรณ์อากาศ 5 วัน**QPF 5 day

a=get(handles.listbox,'Value');  
base\_url='http://api.wunderground.com/api/b728a7436f25b9f2/forecast10day/q/TH/';  
 if (a==1)  
 set(handles.print\_mount,'String','Nontaburi');  
 provice\_url='Nonthaburi.json';  
 elseif(a==2)  
 set(handles.print\_mount,'String','Rayong');  
 provice\_url='Rayong.json';  
 else  
 set(handles.print\_mount,'String','Chantaburi');  
 provice\_url='Chanthaburi.json';  
 end  
 Url=[base\_url,provice\_url]  
  
dataForecast = webread(Url)  
valForecast = dataForecast.forecast;  
  
  
  
 Rain=[dataForecast.forecast.simpleforecast.forecastday(1).qpf\_allday.mm;...  
 dataForecast.forecast.simpleforecast.forecastday(2).qpf\_allday.mm;...  
 dataForecast.forecast.simpleforecast.forecastday(3).qpf\_allday.mm;...  
 dataForecast.forecast.simpleforecast.forecastday(4).qpf\_allday.mm;...  
 dataForecast.forecast.simpleforecast.forecastday(5).qpf\_allday.mm;...  
 ];  
  
  
  
 plot(1:5,Rain);  
 xlabel('days');  
 ylabel('qbf');  
  
  
  
  
  
  
 if Rain(1)>1  
 set(handles.water,'String','don''t wathering');  
 else  
 set(handles.water,'String','Wathering today ');  
 end

**รับค่าพยากรณ์อากาศแบบย้อนหลัง 4 ปี ปีละ 2 วัน**Rain in Past

formatOut = 'yyyymmdd';  
  
date = datestr(now,formatOut);  
yearStr = [date(1),date(2),date(3),date(4)];  
month = [date(5),date(6)];  
day = [date(7),date(8)];  
yearInt = str2num(yearStr);  
  
dayInt = str2num(day);  
  
count = 0;  
for k=1:2  
  
 yearInt = yearInt - 1;  
 tempStr = int2str(yearInt);  
  
 if day > 1  
  
 url = ['http://api.wunderground.com/api/b728a7436f25b9f2/history\_',tempStr,month,day1,'/q/TH/',provice\_url];  
 dataRainPast = webread(url);  
 valRainPast = dataRainPast.history.dailysummary.rain;  
 pastWheater=['time=',tempStr,'day =', day1,'RainValue= ',valRainPast,'\n']  
 url = ['http://api.wunderground.com/api/b728a7436f25b9f2/history\_',tempStr,month,day1,'/q/TH/',provice\_url];  
 dataRainPast = webread(url);  
 valRainPast = dataRainPast.history.dailysummary.rain;  
 pastWheater=['time=',tempStr,'day =', day2,'RainValue= ',valRainPast,'\n']  
 if valRainPast == 1  
 count = count + 1;  
 end  
 else  
  
 url = ['http://api.wunderground.com/api/b728a7436f25b9f2/history\_',tempStr,month,day1,'/q/TH/',provice\_url];  
 dataRainPast = webread(url);  
 valRainPast = dataRainPast.history.dailysummary.rain;  
  
 pastWheater=['time=',tempStr,'day =', day1,'RainValue= ',valRainPast,'\n']  
 url = ['http://api.wunderground.com/api/b728a7436f25b9f2/history\_',tempStr,month,day1,'/q/TH/',provice\_url];  
 dataRainPast = webread(url);  
 valRainPast = dataRainPast.history.dailysummary.rain;  
  
 pastWheater=['time=',tempStr,'day =', day3,'RainValue= ',valRainPast,'\n']  
 set(handles.print\_mount,'String',pastWheater);  
  
 if valRainPast == 1  
 count = count + 1;  
 end  
  
 end  
  
end  
  
if count > 4  
 set(handles.water2,'String','don''t wathering');% wash  
else  
 set(handles.water2,'String','wathering'); % not wash  
end

1. **โค้ดสำหรับประมวลผลแต่ละ callback**

function varargout = Matlab\_WeatherForecast(varargin)  
gui\_Singleton = 1;  
gui\_State = struct('gui\_Name', mfilename, ...  
 'gui\_Singleton', gui\_Singleton, ...  
 'gui\_OpeningFcn', @Matlab\_WeatherForecast\_OpeningFcn, ...  
 'gui\_OutputFcn', @Matlab\_WeatherForecast\_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 Matlab\_WeatherForecast is made visible.  
function Matlab\_WeatherForecast\_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 Matlab\_WeatherForecast (see VARARGIN)  
  
% Choose default command line output for Matlab\_WeatherForecast  
handles.output = hObject;  
  
% Update handles structure  
guidata(hObject, handles);  
  
% UIWAIT makes Matlab\_WeatherForecast wait for user response (see UIRESUME)  
% uiwait(handles.figure1);  
  
  
  
% --- Outputs from this function are returned to the command line.  
function varargout = Matlab\_WeatherForecast\_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;  
  
  
  
function date1\_Callback(hObject, eventdata, handles)  
% hObject handle to date1 (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 date1 as text  
% str2double(get(hObject,'String')) returns contents of date1 as a double  
  
  
% --- Executes during object creation, after setting all properties.  
function date1\_CreateFcn(hObject, eventdata, handles)  
% hObject handle to date1 (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 water\_Callback(hObject, eventdata, handles)  
% hObject handle to water (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 water as text  
% str2double(get(hObject,'String')) returns contents of water as a double  
  
  
% --- Executes during object creation, after setting all properties.  
function water\_CreateFcn(hObject, eventdata, handles)  
% hObject handle to water (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 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)

## QPF 5 day

a=get(handles.listbox,'Value');  
base\_url='http://api.wunderground.com/api/b728a7436f25b9f2/forecast10day/q/TH/';  
 if (a==1)  
 set(handles.print\_mount,'String','Nontaburi');  
 provice\_url='Nonthaburi.json';  
 elseif(a==2)  
 set(handles.print\_mount,'String','Rayong');  
 provice\_url='Rayong.json';  
 else  
 set(handles.print\_mount,'String','Chantaburi');  
 provice\_url='Chanthaburi.json';  
 end  
 Url=[base\_url,provice\_url]  
  
dataForecast = webread(Url)  
valForecast = dataForecast.forecast;  
  
 Rain=[dataForecast.forecast.simpleforecast.forecastday(1).qpf\_allday.mm;...  
 dataForecast.forecast.simpleforecast.forecastday(2).qpf\_allday.mm;...  
 dataForecast.forecast.simpleforecast.forecastday(3).qpf\_allday.mm;...  
 dataForecast.forecast.simpleforecast.forecastday(4).qpf\_allday.mm;...  
 dataForecast.forecast.simpleforecast.forecastday(5).qpf\_allday.mm;...  
 ];  
  
 plot(1:5,Rain);  
 xlabel('days');  
 ylabel('qbf');  
  
 if Rain(1)>1  
 set(handles.water,'String','don''t wathering');  
 else  
 set(handles.water,'String','Wathering today ');  
 end

## Rain in Past

formatOut = 'yyyymmdd';  
  
date = datestr(now,formatOut);  
yearStr = [date(1),date(2),date(3),date(4)];  
month = [date(5),date(6)];  
day = [date(7),date(8)];  
yearInt = str2num(yearStr);  
  
dayInt = str2num(day);  
  
day1 = int2str(dayInt);  
day2 = int2str(dayInt-1);  
day3 = int2str(dayInt+1);  
  
  
count = 0;  
for k=1:2  
  
 yearInt = yearInt - 1;  
 tempStr = int2str(yearInt);  
  
 if day > 1  
  
 url = ['http://api.wunderground.com/api/b728a7436f25b9f2/history\_',tempStr,month,day1,'/q/TH/',provice\_url];  
 dataRainPast = webread(url);  
 valRainPast = dataRainPast.history.dailysummary.rain;  
 pastWheater=['time=',tempStr,'day =', day1,'RainValue= ',valRainPast,'\n']  
 url = ['http://api.wunderground.com/api/b728a7436f25b9f2/history\_',tempStr,month,day1,'/q/TH/',provice\_url];  
 dataRainPast = webread(url);  
 valRainPast = dataRainPast.history.dailysummary.rain;  
  
 pastWheater=['time=',tempStr,'day =', day2,'RainValue= ',valRainPast,'\n']  
 if valRainPast == 1  
 count = count + 1;  
 end  
 else  
  
 url = ['http://api.wunderground.com/api/b728a7436f25b9f2/history\_',tempStr,month,day1,'/q/TH/',provice\_url];  
 dataRainPast = webread(url);  
 valRainPast = dataRainPast.history.dailysummary.rain;  
  
 pastWheater=['time=',tempStr,'day =', day1,'RainValue= ',valRainPast,'\n']  
  
  
 url = ['http://api.wunderground.com/api/b728a7436f25b9f2/history\_',tempStr,month,day1,'/q/TH/',provice\_url];  
 dataRainPast = webread(url);  
 valRainPast = dataRainPast.history.dailysummary.rain;  
  
 pastWheater=['time=',tempStr,'day =', day3,'RainValue= ',valRainPast,'\n']  
 set(handles.print\_mount,'String',pastWheater);  
  
 if valRainPast == 1  
 count = count + 1;  
 end  
  
 end  
  
end  
  
if count > 4  
 set(handles.water2,'String','don''t wathering');% wash  
else  
 set(handles.water2,'String','wathering'); % not wash  
end  
  
  
  
% --- Executes on button press in rayong.

function rayong\_Callback(hObject, eventdata, handles)  
% hObject handle to rayong (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 rayong  
  
  
% --- Executes on button press in nontaburi.  
function nontaburi\_Callback(hObject, eventdata, handles)  
% hObject handle to nontaburi (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 nontaburi  
  
  
% --- 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  
  
  
% --- Executes on selection change in popupmenu8.  
  
  
% --- Executes during object creation, after setting all properties.  
  
  
function water2\_Callback(hObject, eventdata, handles)  
% hObject handle to water2 (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 water2 as text  
% str2double(get(hObject,'String')) returns contents of water2 as a double  
  
  
% --- Executes during object creation, after setting all properties.  
function water2\_CreateFcn(hObject, eventdata, handles)  
% hObject handle to water2 (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 listbox.  
function listbox\_Callback(hObject, eventdata, handles)  
% hObject handle to listbox (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 listbox contents as cell array  
% contents{get(hObject,'Value')} returns selected item from listbox  
a=get(handles.listbox,'Value');  
  
 if (a==1)  
 set(handles.print\_mount,'String','Nontaburi');  
  
 elseif(a==2)  
 set(handles.print\_mount,'String','Rayong');  
  
 else  
 set(handles.print\_mount,'String','Chantaburi');  
  
 end  
  
% --- Executes during object creation, after setting all properties.  
  
function listbox\_CreateFcn(hObject, eventdata, handles)  
% hObject handle to listbox (see GCBO)  
% eventdata reserved - to be defined in a future version of MATLAB  
% handles empty - handles not created until after all CreateFcns called  
  
% Hint: listbox 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 print\_mount\_Callback(hObject, eventdata, handles)  
% hObject handle to print\_mount (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 print\_mount as text  
% str2double(get(hObject,'String')) returns contents of print\_mount as a double  
  
  
% --- Executes during object creation, after setting all properties.  
function print\_mount\_CreateFcn(hObject, eventdata, handles)  
% hObject handle to print\_mount (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