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

% Last Modified by GUIDE v2.5 20-Nov-2021 23:08:17

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

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

% Update handles structure
guidata(hObject, handles);


screen=imread('ncu.jpg');
axes(handles.axes4);
imshow(screen);

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


% --- Outputs from this function are returned to the command line.
function varargout = project_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)
[filename, pathname] = ...
     uigetfile({'*.png';'*.jpg';'*.jpeg';'*.*'},'Select Image File');
 I=strcat(pathname,filename);

   %  figure(1);
 %imshow(I);
axes(handles.axes1);
imshow(I);
set(handles.pushbutton2,'Enable','on')
helpdlg('Image has been Loaded Successfully. Now you can extract text
 from Image  ',...
        'Load Image');


% --- 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)
```

Read Image

```
Inputimage=getimage;
```

Show image

figure(1) imshow(Inputimage); title('INPUT IMAGE WITH NOISE');

Convert to gray scale

```
if size(Inputimage,3)==3 % RGB image
Inputimage=rgb2gray(Inputimage);
end
```

Convert to binary image

```
threshold = graythresh(Inputimage);
Inputimage =~imbinarize(Inputimage,threshold);
```

Remove all object containing fewer than 30 pixels

```
Inputimage = bwareaopen(Inputimage,30);
pause(1);
```

Label connected components

```
[L Ne]=bwlabel(Inputimage);

propied=regionprops(L,'BoundingBox');
%imshow(~Inputimage);
hold on
for n=1:size(propied,1)
 rectangle('Position',propied(n).BoundingBox,'EdgeColor','g','LineWidth',2)
end
hold off
pause (1);
```

Objects extraction

```
m=ocr(Inputimage);
disp(m.Text);
edit1text = m.Text;

set(handles.edit1,'string',edit1text);
```

Convert Text to Speech

caUserInput = m.Text; caUserInput = char(caUserInput); % Convert from cell to string. NET.addAssembly('System.Speech'); obj = System.Speech.Synthesis.SpeechSynthesizer; obj.Volume = 100; Speak(obj, caUserInput);

```
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 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)




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)

% 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)
```

Read Image

```
Inputimage=getimage;
```

Convert to gray scale

```
if size(Inputimage,3)==3 % RGB image
Inputimage=rgb2gray(Inputimage);
end
```

Convert to binary image

```
threshold = graythresh(Inputimage);
Inputimage =~imbinarize(Inputimage,threshold);
```

Remove all object containing fewer than 30 pixels

```
Inputimage = bwareaopen(Inputimage,30);
pause(1);
```

Label connected components

```
[L Ne]=bwlabel(Inputimage);

propied=regionprops(L,'BoundingBox');
%imshow(~Inputimage);
hold on
for n=1:size(propied,1)
 rectangle('Position',propied(n).BoundingBox,'EdgeColor','g','LineWidth',2)
end
hold off
pause (1);
```

Objects extraction

```
m=ocr(Inputimage);
disp(m.Text);
```

Convert Text to Speech

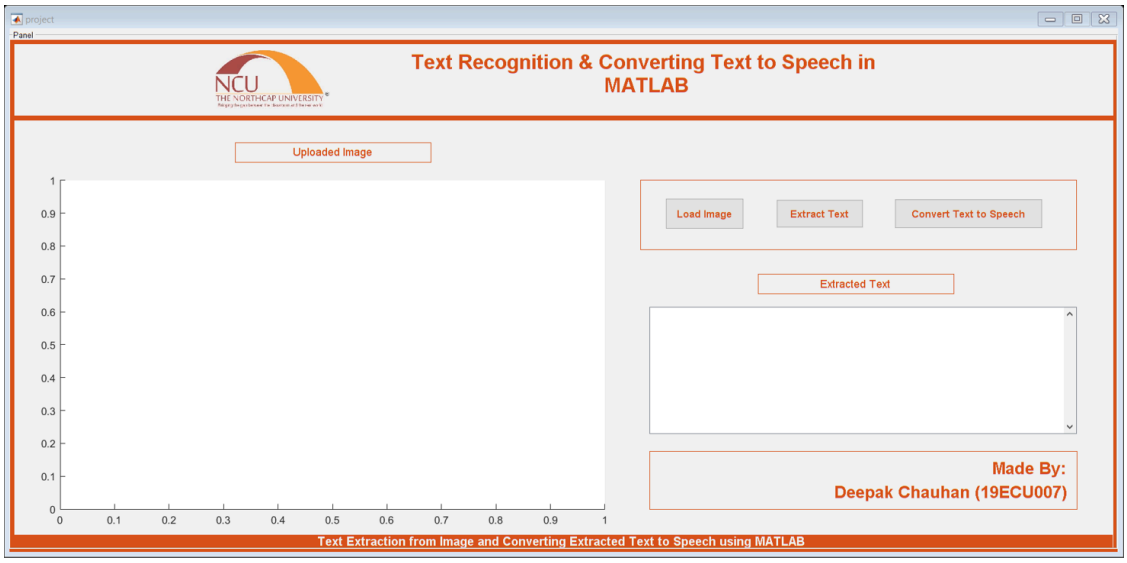
```
caUserInput = m.Text;
caUserInput = char(caUserInput); % Convert from cell to string.
NET.addAssembly('System.Speech');
obj = System.Speech.Synthesis.SpeechSynthesizer;
obj.Volume = 100;
Speak(obj, caUserInput);


% --- Executes during object creation, after setting all properties.

function axes4_CreateFcn(hObject, eventdata, handles)
```

```
% hObject    handle to axes4 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
 called

% Hint: place code in OpeningFcn to populate axes4
```



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