### **MATLAB PROJECT REPORT**



#### **PROJECT TOPIC: -**

**Automatic Certificate Generation Using MATLAB** 

## Significance of your project:

- This program is used for generating certificates collecting participants' data from excel sheets.
- This program can help save time and hustles and can arrange and manage certificates in an orderly manner.
- Analysis and presentation of large data sets is a tedious task in applications such as Big Data, IoT, and sensors-actuators modeling. The project presented here can be extended and customized for analysis and reports generation in these applications.
- certificates generated by the program can be saved in a folder with a unique filename

#### Module and libraries used:

- 1. xlsread(filename) reads the first worksheet in the Microsoft\* Excel\* spreadsheet workbook named filename and returns the numeric data in a matrix.
- 2. imread(filename) reads the image from the file specified by filename, inferring the format of the file from its contents. If filename is a multi-image file, then imread reads the first image in the file.
- 3. insertText(<u>I</u>, position, text) returns a truecolor image with text inserted. The input image, <u>I</u>, can be either a truecolor or grayscale image.
- 4. Etc

#### **Procedure:**

- 5. Read an Excel sheet containing details. Text is read from the file separately from numbers
- 6. Read blank certificate image
- 7. Obtain topics from the txt variable which are in 3rd column
- 8. combine names and topics
- 9. obtain positions to insert on the image, MSPaint or any image editor
- 10. Provide parameters for function inserttext
- 11. Font size is 22 and opacity of box is 0 means 100% transparent
- 12. generate and save files with .png extension

#### **MATLAB Code:**

```
clc
clear all
close all
home
                                                                                   (Registration_Details.xls';
filename =
[num,txt] = xlsread(filename)
len=length(txt)
blankimage = imread(
                                                                                              (Certificate_Blank.jpg');
for i=1:len
  for j= 2:2
    text_names(i,j)=txt(i,j)
  end
end
for i=1:len
  for j = 3:3
   text_topic(i,j)=txt(i,j)
  end
end
for i=2:len
    text all=[text names(i,2) text topic(i,3)]
     position = [100 258;120 416];
    RGB = insertText(blankimage,position,text_all,'FontSize',22,'BoxOpacity',0);
   figure
    imshow(RGB)
   end
```

```
Editor - C:\Users\priya\Untitled1001.m
   Untitled1001.m × +
                                                                                                          Location of the xls file
                     % Clear command window.
 2 -
        {\tt clear} \  \, {\tt \underline{all}} \  \, {\tt \$} \  \, {\tt Clear} \  \, {\tt variables} \  \, {\tt and} \  \, {\tt functions} \  \, {\tt from} \  \, {\tt memory}
 3 -
        close all % closes all the open figure windows
                                                                                         t\Registration_Details.xls
 5 -
                                                                                                                           \ \mbox{\tt \$} Read Excel sheet containing details. Text is read from the file
        [num,txt] xisread(filename) % seperately from numbers

lenelength(txt) % obtain length of text in excel or number of certificates to be generated
                                                                                                                           Location of the Blank Certificate
                            % This code provides scalability
                                                                                                      \Certificate_Blank.jpg'; % Read blank certificate image
10 -
        blankimage = imread
11 -
      for i=1:len
12 -
             for j= 2:2
13 -
                  text_names(i,j)=txt(i,j)
14 -
15 -
         % Obtain names from the txt variable which are in 2nd column
17 - 🗐 for i=1:1en
18 -
             for j= 3:3
19 -
               text topic(i,j) txt(i,j)
20 -
21 -
22
        % Obtain topics from the txt variable which are in 3rd column
23
         %Ignore first row which is heading
25 - for i=2:len
26 -
                  text_all=[text_names(i,2) text_topic(i,3)]
                                                                          % combine names and topics
                   position = [250 258;130 400];
                                                                           % obtain positions to insert on image, MSPaint or any image editor
                 RGB = insertText(blankimage,position,text_all,'FontSize',22,'BoxOpacity',0);
29
                 %Provide parameters for function insertText
30
                 %Font size is 22 and opacity of box is 0 means 100% transparent
31 -
                figure
                  imshow(RGB) %Obtain and display figure in color
```

#### **COMMAND WINDOW:**

```
Command Window
  Warning: Could not start Excel server for import, 'basic' mode will be used. Refer to HELP XLSREAD for more information.
  > In xlsread (line 187)
    In <u>Untitled1001</u> (<u>line 6</u>)
  num =
     NaN
        3
        4
        5
        6
  txt =
                                                                 'Topic'
      'S1 No'
                 'Resource Persons'
                 'Vijaykumar Sajjanar, BLDEA's CET,...'
'Ravi M Hatti , BLDEA's CET, Vijay...'
                                                                'Electromagnetics and Antenna Design'
                                                                 'Matlab for Electromagnetics'
      1.1
                 'Achyut Yaragal , BLDEA's CET, Vij...'
                                                                'Simulink '
                  'Rajinder Math, , BLDEA's CET, Vi...'
                                                                'Image processing basics'
                  'Rajinder Math, Ravi hatti , Achyut...'
                                                                'Handson Matlab for Image processing'
                  'Suresh Dwivedi'
                                                                'Electronics forvou'
  len =
  text names =
      [] 'Resource Persons'
  text names =
             'Resource Persons'
      11
            'Vijaykumar Sajjanar, BLDEA's CET, Vijayapur'
      []
  text_names =
      []
             'Resource Persons'
             'Vijaykumar Sajjanar, BLDEA's CET, Vijayapur'
      - [1]
            'Ravi M Hatti , BLDEA's CET, Vijayapur'
      11
  text_names =
             'Resource Persons'
      []
            'Vijaykumar Sajjanar, BLDEA's CET, Vijayapur'
      []
           'Ravi M Hatti , BLDEA's CET, Vijayapur'
'Achyut Yaragal , BLDEA's CET, Vijayapur'
      []
      []
  text_names =
            'Resource Persons'
      []
             'Vijaykumar Sajjanar, BLDEA's CET, Vijayapur'
      []
            'Ravi M Hatti , BLDEA's CET, Vijayapur'
      - [1
            'Achyut Yaragal , BLDEA's CET, Vijayapur'
      F1
           'Rajinder Math, , BLDEA's CET, Vijayapur'
      []
f_{\underline{x}} text_names =
```

```
Command Window
  text_names =
            'Resource Persons'
       []
            'Vijaykumar Sajjanar, BLDEA's CET, Vijayapur'
       []
            'Ravi M Hatti , BLDEA's CET, Vijayapur'
            'Achyut Yaragal , BLDEA's CET, Vijayapur'
'Rajinder Math, , BLDEA's CET, Vijayapur'
          'Rajinder Math,Ravi hatti , Achyut yaragal and Vijaykuma...'
       []
  text_names =
       []
            'Resource Persons'
       []
            'Vijaykumar Sajjanar, BLDEA's CET, Vijayapur'
            'Ravi M Hatti , BLDEA's CET, Vijayapur'
            'Achyut Yaragal , BLDEA's CET, Vijayapur'
           'Rajinder Math, , BLDEA's CET, Vijayapur'
            'Rajinder Math, Ravi hatti , Achyut yaragal and Vijaykuma...'
       []
          'Suresh Dwivedi'
  text_topic =
      [] []
                  'Topic'
  text_topic =
            []
                   'Topic'
          []
                   'Electromagnetics and Antenna Design'
      []
  text_topic =
          []
                  'Topic'
            []
                  'Electromagnetics and Antenna Design'
                  'Matlab for Electromagnetics'
  text_topic =
                   'Topic'
            п
      [1
                   'Electromagnetics and Antenna Design'
       []
            []
          []
                  'Matlab for Electromagnetics'
       []
      []
                  'Simulink '
  text_topic =
                   'Topic'
            []
                   'Electromagnetics and Antenna Design'
       [1
            F1
                   'Matlab for Electromagnetics'
       П
            - [1
                   'Simulink '
       []
            []
                  'Image processing basics'
      []
            []
  text_topic =
                   'Topic'
            []
                   'Electromagnetics and Antenna Design'
      []
            []
                   'Matlab for Electromagnetics'
       []
            []
                   'Simulink '
       [1
            []
       []
            []
                   'Image processing basics'
       []
          []
                  'Handson Matlab for Image processing'
f_{\bar{x}} text_topic =
```

```
text_topic =
       [] [] 'Topic'
       [] 'lopic'
[] [] 'Electromagnetics and Antenna Design'
[] [] 'Matlab for Electromagnetics'
[] [] 'Simulink'
[] [] 'Image processing basics'
[] [] 'Handson Matlab for Image processing'
[] [] 'Electronics foryou'
   text_all =
        'Vijaykumar Sajjanar, BLDEA's CET, Vijayapur' 'Electromagnetics and Antenna Design'
   text_all =
        'Ravi M Hatti , BLDEA's CET, Vijayapur' 'Matlab for Electromagnetics'
   text_all =
        'Achyut Yaragal , BLDEA's CET, Vijayapur' 'Simulink'
   text_all =
        'Rajinder Math, , BLDEA's CET, Vijayapur' 'Image processing basics'
   text all =
        'Rajinder Math,Ravi hatti , Achyut yaragal and Vijaykuma...' 'Handson Matlab for Image processing'
  text_all =
        'Suresh Dwivedi' 'Electronics foryou'
fx >>
```

# **Provided Inputs:**

• Excel sheet of registration Details .

	Resource Persons	Topic
		Electromagnetics and Antenna Design
	, , , ,	Matlab for Electromagnetics
	,	Simulink
		Image processing basics
		Handson Matlab for Image processing
6	Suresh Dwivedi	Electronics foryou

• Blank certificate image

# ARDENT



This Certificate is proudly presented to

for completing course in matlab for mechanical engineers, and presented talk on

#### **Output:**

Generated Certificates.





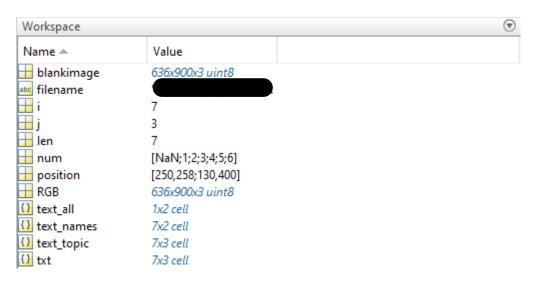








### Workspace.



#### **Errors And Difficulties:**

- Typing mistakes were observed.
- Using Image Processing tools were hectic.
- errors in input arguments were found due to being unfamiliar with new functions.
- Alignment of the registration details while inserting the text in the certificate was a lengthy process.