Digital Object Identifier

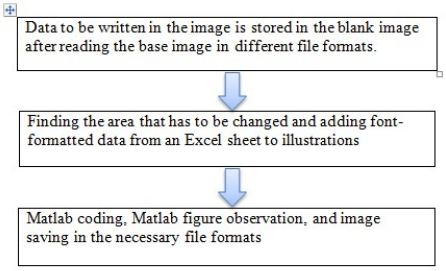
Generating certificate automatically using MATLAB

ABSTRACT The project "Automatic Certificate Generation Using MATLAB" aims to streamline and automate the process of generating certificates for various events, workshops, or programs. Traditional methods of certificate generation often involve manual efforts, leading to inefficiencies and potential errors. This project leverages the capabilities of MATLAB, a powerful numerical computing environment, to automate the certificate generation process.

I. INTRODUCTION

FIgure 1 depicts the three main steps that this project entails. The base image should be in the tif, jpg, or png format and can be any color. The program creates an image while maintaining the characteristics of the original image. The source code provided here merely adds text to the picture. The format of the data to be written might be either.xls or.xlsx. Because MS Excel is a strong statistical and mathematical tool, it is recommended. It enables internal computation and analysis of data inside the file.With basic picture editing software like MS Paint and Picture Manager, you can determine the location of the text to be added. The smallest units of an image are called pixels or picture elements. 786,432 pixels, or almost 0.79 megapixels, make up an image with a resolution of 1024 by 768.

There are as many pixel spots to be found as there are letters and numerals that need to be added to the picture. For comparable image processing tasks, it is relatively easy to alter the project code.The MATLAB figures or images that are generated can be stored in separate files or in a single file, depending on the needs. The code saves the created image by default in the.tif format with a special name. Images can also be ported to with minor programming changes into pdf file.



II. MATLAB CODE AND OUTPUT

A. CODE

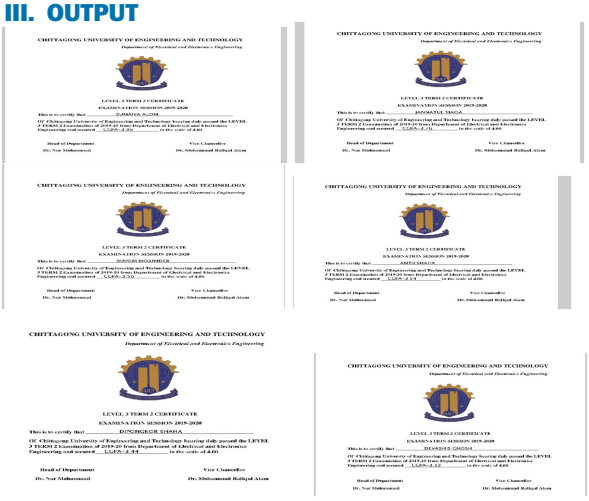
```
clc
% Clear command window.
clear all
%Clear variables and functions from memory
close all
% closes all the open figure windows
home
% Send the cursor home

filename = 'Registration_Details.xls';
[num,txt] = xlsread(filename)
% Read Excel sheet containing details.
Text is read from the file
% seperately from numbers


len=length(txt)
% obtain length of text in excel
or number of certificates
to be generated
% This code provides scalability

blankimage =
imread('Certificatef1234.tif');
% Read blank certificate image

for i=1:len
    for j= 2:2
        text_names(i,j)=txt(i,j)
    end
end
% Obtain names from the txt variable
```

```
which are in 2nd column

for i=1:len
    for j= 3:3
      text_topic(i,j)=txt(i,j)
    end
end
% Obtain topics from the txt variable
which are in 3rd column


%Ignore first row which is heading
for i=2:len
        text_all=[text_names(i,2)
        text_topic(i,3)]
        % combine names and topics

        position = [340 490;300 570];
        % obtain positions to
        insert on image, MSPaint
        or any image editor

        RGB = insertText(blankimage,
        position,text_all,'FontSize',
        17,'BoxOpacity',0);
        %Provide parameters for
        function insertText
        %Font size is 22 and
        opacity of box is 0
        means 100% transparent

        figure
        imshow(RGB)
        %Obtain and display
        figure in color

        y=i-1
        filename=['Certificate_Topic_'
        num2str(y)]
        lastf=[filename '.tif']
        saveas(gcf,lastf)
        % generate and save files
        with .tif extension
end
```

EXCEL DATA SHEET

Sl No	Student names	Topics
1	SUMAIYA ALOM	CGPA-3.96
2	JANNATUL MAOA	CGPA-3.76
3	SUVOM MOJUMDER	CGPA-3.56
4	ANTU SAHA	CGPA-3.54
5	DIPONKOR SHAHA	CGPA-3.44
6	DEVASHIS GHOSH	CGPA-3.33

III. OUTPUT



IV. ADVANTAGE OR FUTURE APPLICATIONS

Analysis and presentation of large data sets is a tedious task in applications such as Big Data, IoT and sensors-actuators modelling. The project presented here can be extended and customised for analysis and reports generation in these applications.

REFERENCES

[1] @inproceedingskrizan2014automatic, title=Automatic code generation from Matlab/Simulink for critical applications, author=Krizan, J and Ertl, L and Bradac, M and Jasansky, M and Andreev, A, booktitle=2014 IEEE 27th Canadian Conference on Electrical and Computer Engineering (CCECE), pages=1–6, year=2014, organization=IEEE

[2] https://www.electronicsforu.com/electronics-projects/software-projects-ideas/automatic-certificate-generation-matlab

Hello, It's Nishat Anjumane Salsabila. Currrently I am an un dergraduate student in the Department of Elec trical and Electronic Engineering at the CUET, Chattogram, Bangladesh. I'm quite enthusiastic about the electricity sector and want to be at the forefront of advancement and innovation there. I'm willing to collaborate and cooperate with others and have the caliberation power to accommodate. I've committed to participating in extracurricular and academic activities. I'm excited about all of the chances for success, development, and discovery that lie ahead of me as I continue on my engineering adventure. Contact:-

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