***Best Enlist Final Project - Certificate Generator***

In this final project I have made use of some of the best python libraries. The first one is OpenCV which is imported as cv2 as we can see in the code and the other one is openpyxl.

OpenCV is this huge open-source library used in computer vision and machine learning and image processing. In this project I have used OpenCV for image processing especially so that we can print test on a particular certificate template. OpenCV makes the whole job so simple that we must use just a command to have some specified text to be printed on an image.

Openpyxl is another Python library which is used to operate (read/ write) Excel (xlsx/xlsm/xltx/xltm) files. This is used in this project to read the excel files which contain the details of the student to whom the certificate is to be generated.

Certificate generators are used mostly as an event generally involves lot of participants and handwritten certificates for each one of them is almost a heck of a task. So, by making use of these libraries and creating a particular template/image on to which the details are to be printed we can write a simple script in Python which helps us in combining all the work to be done and makes the job easier. In this project the excel file should contain name of the student, gender, certificate number, mentor name and the project manager name to be read and printed on to the image. The sample template and excel file as we can see are uploaded in the folder with the Python script. This script is for this template only as we must mention the coordinates (position on the template) for every detail of the student. So, if we want any change in the template, we need to change the coordinates also in the script.

Firstly, as we can see in the script the libraries are imported. Next the variables are created which are to be used later in the script. The first three variables are for the paths where the specific files are in the system. Template is for the main certificate template, excel\_file consists of the details of the students, and the output\_path is to where the output certificates are to be downloaded after running the script. The next three variables are used for the details to be printed on the template (font\_size, color, thickness). And next comes the coordinates for adjusting the details on to the template perfectly. Now we will load the details workbook as workbook and pick the active sheet as workbook\_sheet. Then there is the for loop in range 2 to 3 as the workbook contains only one name. Inside the for loop the values of each column(j) for a particular row(i) will be loaded into the variables. The next 5 to 6 lines is where we check if the student is male or female and the text string are loaded in correspondence to that. img variable is the image template which is loaded using the command in OpenCV imread(). Next, we choose the font theme and get the text\_size using other OpenCV commands getTextSize(). Next I adjusted the commands as to where the details are to be written in the template using the putText() command for each detail of the student. Finally we use the imwrite() command to write the details onto a particular template and download the certificates to the output path.