MINI PROJECT (2020-21)

Automatic Certificate Generator

(Mid-Term Report)

GLA University

INSTITUTE OF ENGINEERING AND TECHNOLOGY

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Abstract

In this using python script automates the process of generating multiple certificates for a given list of people from a template image file. This script will take care of the generation of certificate for different people using txt file as an input of names and coordinates of template. To explain it in a better way, say you need to provide digital certificates for any purpose, so create a template for a certificate. It autogenerates the certificates of any event of the individual candidates. Generating certificate of participation of each attendee can be cumbersome and hard work. Automating this job can easily save tons of time and manual work. We have made this automation possible and quicker than ever. This script can make thousands of certificates with as simple input as just a name. Our algorithm's quickest runtime is just seconding to generate a single certificate and with minimum possible memory consumption.

INTRODUCTION

1.1-GENERAL INTRODUCTION OF TOPIC

This project automatic certificate generator using python and OpenCV implements a classic version of Certificate generator. In this the python script automates the process of generating multiple certificates for a given list of people from a template image file. To explain it in a better way, say you need to provide digital certificates for any purpose, so you create a template for a certificate, this script will take care of the generation of certificate for different people using txt file as an input of names and we also modify coordinate of another txt file. This certificate generator includes two.txt files one for name of the candidate with date and another for co-ordinates files. after all this we run the python code and it will fetch all the details from these txt files and will generate our certificate.

1.2-AREAS OF COMPUTER SCIENCE:

1- COMPUTER VISION

2-PROGRAMMING LANGUAGES

3-COMPUTER GRAPHICS

4-NUMERIC ANALYSIS

1.4 HARDWARE REQUIREMENTS

PROCESSOR USED: Intel Pentium or above

OPERATING SYSTEM: Win 7 or above

RAM: 4GB or above

HARDWARE DEVICES: Computer or Laptop System

HARD DISK: 256GB or above

SOFTWARE REQUIREMENTS

- TECHNOLOGY USED: OpenCV, PIL (Python Image Library)
- LANGUAGE USED: PYTHON3

2-PROBLEM DEFINATION

I am a core-committee member of the University Coding Club, and hence we organize many competitions, workshops or events where we need to provide a certificate of participation to the users. So, we require to generate large number of certificates for these competitions.

3-OBJECTIVE:

Automatic Certificate Generator aims to generate the large number of digital certificates for many competitions, workshops and events.

It also aims to ease the manual work as a university or other institute members to distribute certificates to the participants using python script (Open CV) that automates the process of generating certificates from given template. Simply edit the input and output file for the CSV input and template image and the generated certificates files and run it.

4-IMPLEMENTATION DETAILS

We make this project by making two sets which is set coordinates and generate certificate so in set coordinate we set the coordinates of name and date and in case pf generate certificate we select text file of names and change default date and generate multiple certificates.

And, we required to implement various libraries such as PIL, OpenCV, csv, OS, NumPy. This library played an important role for automation of certificates.

PIL (Python Image Library) is used Image font, Image draw and Image.it is used for opening, manipulating and saving many different image file formats.

OpenCV is the huge open-source library for computer vision, machine learning, and image processing and now it plays a major role in real-time operation which is very important in today's systems. By using it, one can process images and videos to identify objects, faces, or even the handwriting of a human.

The CSV module implements classes to read data in CSV format. It allows programmers to say, “write this data in the format. the CSV formats understood by other applications or define their own special-purpose CSV formats.

The OS module allows interaction with the Operating System, either generically or specific to a OS.

NUMPY is a Python package. It stands for 'Numerical Python'. It is a library consisting of multidimensional array objects and a collection of routines for processing of array.

PROGRESS

1- Part 1 is completed

Install Python idle all libraries and modules in the system

Such as PIL, NumPy, csv, OpenCV, cv2, OS

2- Part 2 is completed

Download template for certificate

Create text files of names and coordinates in the system.

CODE OF THE PROGRAMME

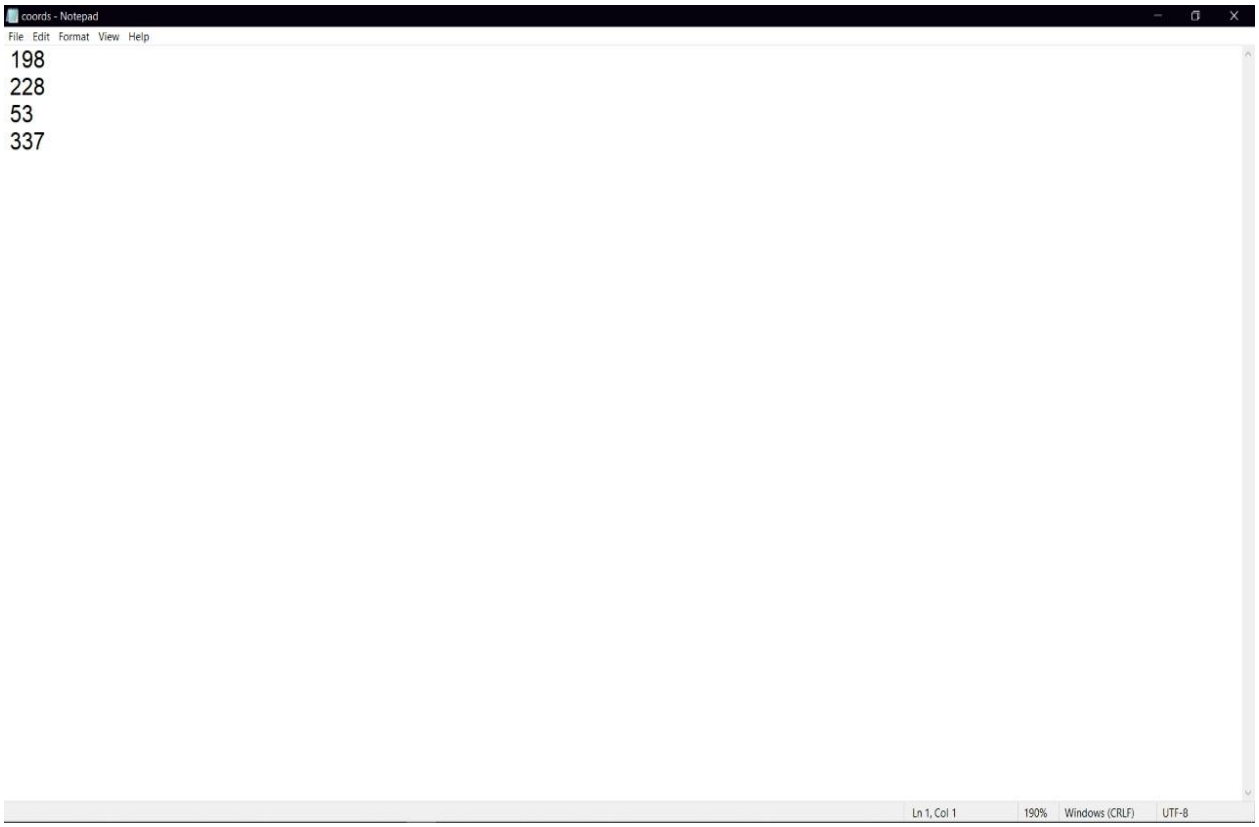
```
from PIL import ImageFont, ImageDraw, Image
import cv2
import numpy as np
import os
import csv

f = open("names.txt","r")
names_list = f.read().split("\n")
#print(names_list)

f1 = open("coords.txt","r")
coordinates = f1.read().split("\n")

flag=True

for i in range(len(names_list)):


    name_to_print = names_list[i]
    date_to_print = "23/03/2020"   #Change this date as per requirement

    # Load image in OpenCV
    image = cv2.imread("ce3.jpg")

    # Convert the image to RGB (OpenCV uses BGR)
    cv2_im_rgb = cv2.cvtColor(image,cv2.COLOR_BGR2RGB)

    # Pass the image to PIL
    pil_im = Image.fromarray(cv2_im_rgb)

    draw = ImageDraw.Draw(pil_im)
    # use a truetype font
    font = ImageFont.truetype("./fonts/MLSJN.TTF", 29)      #You can change fo
nts from list given bottom
    font1 = ImageFont.truetype("./fonts/OLDENGL.TTF", 22)

    # Draw the text
    draw.text((int(coordinates[0]), int(coordinates[1])), name_to_print, font=
font , fill='red')
    draw.text((int(coordinates[2]), int(coordinates[3])), date_to_print , font
=font1, fill='blue')
```

```
    # Get back the image to OpenCV
    cv2_im_processed = cv2.cvtColor(np.array(pil_im), cv2.COLOR_RGB2BGR)

    if flag:
        cv2.imshow('Certificate', cv2_im_processed) #Shows sample image
        flag=False
    path = ''
    cv2.imwrite('./output/'+name_to_print+'.png',cv2_im_processed)
    #os.startfile('output.png')
    cv2.waitKey(0)

    cv2.destroyAllWindows()
```

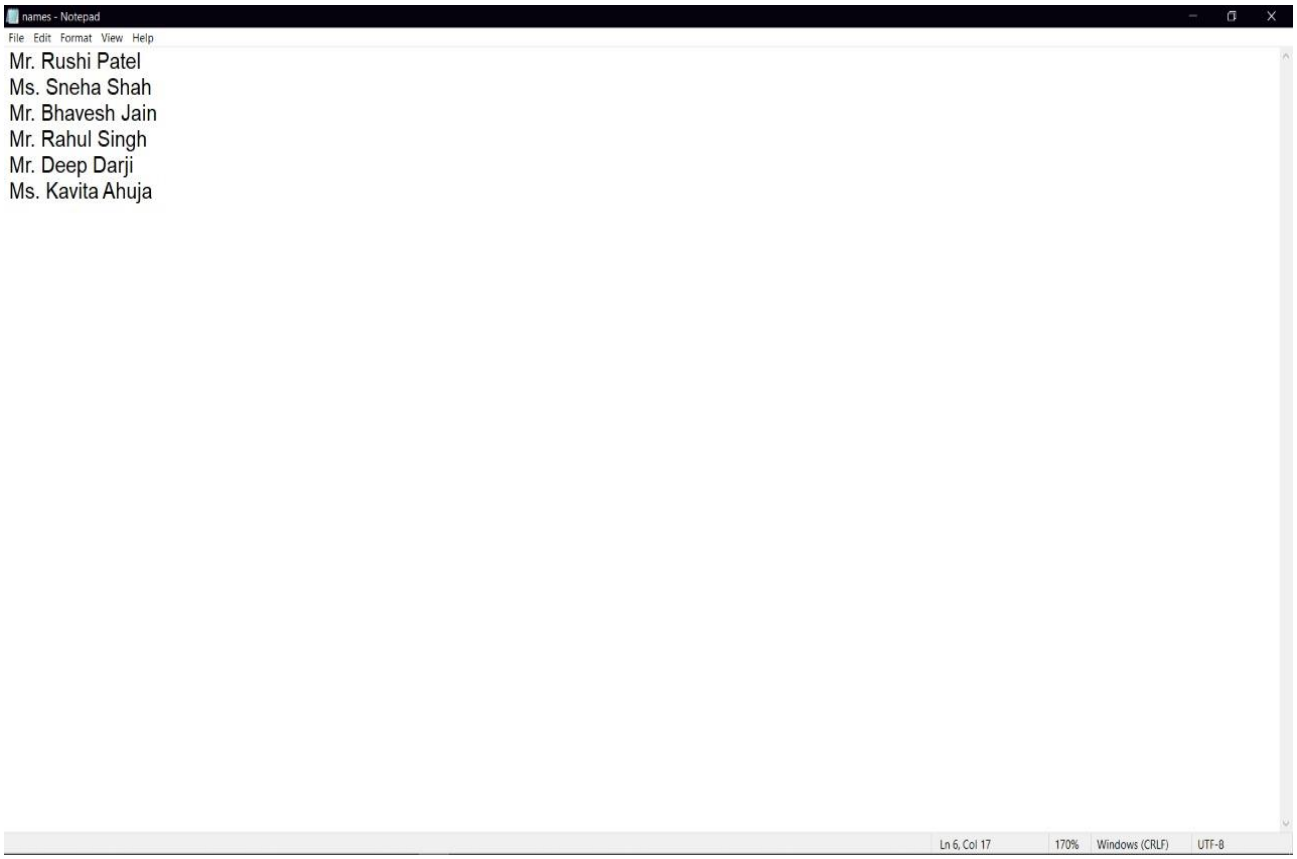
SOME SCREENSHOTS

TEMPLATE OF CERTIFICATE

CO-ORDINATES TEXT FILE



Name Of The Candidates Text File



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- www.tutorialspoint.com
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FACULTY GUIDELINE

- Miss. PRIYA AGRAWAL