Platform Depended Certificate Generating Automatic System

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Abstract. Nowadays, the problems related to the generation of certificates through conventional techniques have given rise to a vast variety of certificate generation systems, which have also helped to cut down on the time required to generate certificates. Certificates are the part of institutions/organizations which will be provided to the participants as a part of their excellence in the curricular or co-curricular activities. To create certificates for the events where the number of participants is greater it would be a hectic task to design each certificate manually. Moreover, if the certificate is lost it will be difficult to redesign. So, to find the optimal solution for this problem, we use automatic certificate generation. Automatic Certificate generation is one of the methods through which certificates can be generated with ease. The idea presented in this paper will enable the user to generate certificates which will save time, reduce hustles and can arrange, manage certificates in an orderly manner.

Keywords: Certificate · Certificate template · Certificate generation · MATLAB

1 Introduction

At the present moment, the usage of computer software is all over the world. With the initiation of computer science knowledge, various organizations are accomplishing their daily activities more skillfully [2, 8]. To alleviate the work, generation systems can be utilized by various universities to simplify the distribution of digital certificates. This system generates all participant certificates in a handy document format and verifies the participant information from the Access database.

The main objective of our procedure is to make it easier for agents working in various categories who are not familiar with data maintenance. From this maintained data, one can generate a vast number of different certificates and this procedure is called "AUTOMATIC CERTIFICATE GENERATION".

MATLAB is a powerful, versatile tool and hence this software is used in our project. It is a proficient method that can be automated and completed in a short period of time. Since the certificates are generated using specific rules and algorithms, it allows for greater customization. The process of automatically creating certificates, such as digital certificates, using software is known as automatic certificate generation. The certificates

generated are more efficient than those from the other online certificate providers. One can avail numerous benefits from automatic certificate generation. The certificate can be sent by the user to the appropriate participant. The user can easily change the font size and color. Furthermore, it is very useful for generating large certificates spontaneously.

Generally, Google Forms, Word Docs, and Microsoft Tools are used for generating the certificates. It is a time-consuming process, and the design customization is very limited, whereas the Automatic Generation System ensures an efficient way to generate certificates using huge details and provides a larger number of certificates, and does so in a user-friendly manner without making it complex, reducing the manual errors. The Certificates that are generated in this procedure are with increased efficiency, enhanced accuracy, security and improved scalability [3–5].

2 Literature Survey

Ahmed Dalhatu Yusuf et al. [6] has proposed a system that allows the end-user by pressing a few buttons and entering text from the GUI system to define certificate template and template format without the need for XML knowledge, verify the certificate, and generate one or more certificates simultaneously and instantly.

Srushti A. Shimpi et al. [1] has been suggested for generating the students' grade reports. The database technology and credit-based grading system that underpin this system are its major foundations (CBGS). The system is intended for use by a variety of businesses, educational institutions, and colleges. The system's development focuses on describing tables with columns/rows & sub-columns, sub-rows, rules of data selection for determining students' credits and grades as well as summarizing exam data, specific tables, columns/rows, and formatting the data in the destination document. The system uses the university database to retrieve the exam information for the students and creates the gadget sheets and mark sheets for each student in a portable document format that ensures document authenticity and allows for simple verification.

Dejan Gjorgjevikj et al. [7] has been put forth in an effort to generate reports as efficiently as possible. An Applicative System for Generating Reports from Templates (ASGRT) is a straightforward yet effective architectural layout that aims to empower more seasoned administrators and make report generation from databases simple for average end users. With the help of the provided software, custom reports may be created with varied levels of flexibility and convenience of use.

3 Flow Chart

See Fig. 1.

4 Implementation

The proposed system fetches the participant details, which are to be displayed on the certificate. A customized blank certificate is created for filling the participant details. Both are uploaded into MATLAB. The MATLAB program is written so that the details of
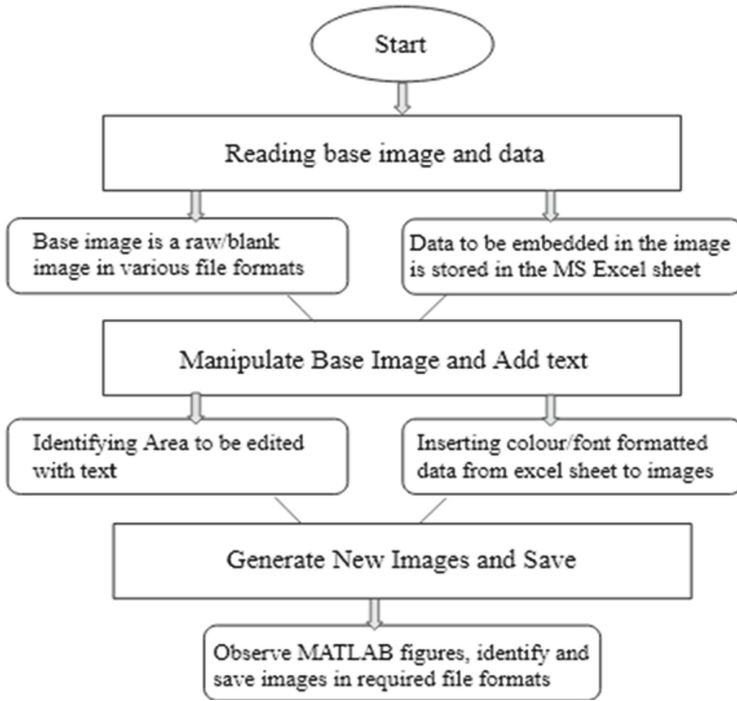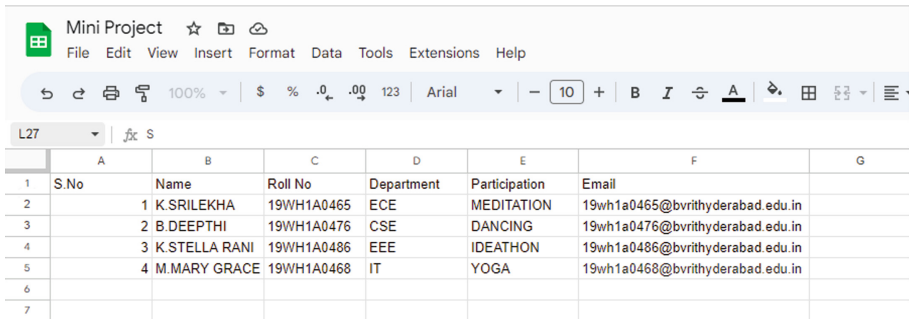
Fig. 1. Flowchart

every participant will get inserted in the certificate and they will be mailed automatically to the provided mail ID of each participant. The position, color, font size and font style can be changed accordingly. Running the program will generate the certificates. The implementation of this project, Automatic Certificate Generation, is divided into three main steps.

4.1 Collection of Details

The first step of the implementation of our project is to collect all the details of the participants into an Excel sheet. If there are more participants, we can get all the details through the Google form, and that form can be converted into an Excel sheet. We can create as many columns as we want, and the important thing is that all the details of the columns we create must be present in the generated certificate (Fig. 2).

4.2 Creating Blank Template

A blank certificate **or** template is created using any one of the applications like (Fig. 3).

Photoshop, PhotoPea, etc. In this customised blank certificate, we need to leave some empty spaces so that the participant details, which are in the excel sheet, can be inserted into it. We need to be careful while leaving the blank spaces because the number of columns in the excel sheet must be equal to the number of columns in the created
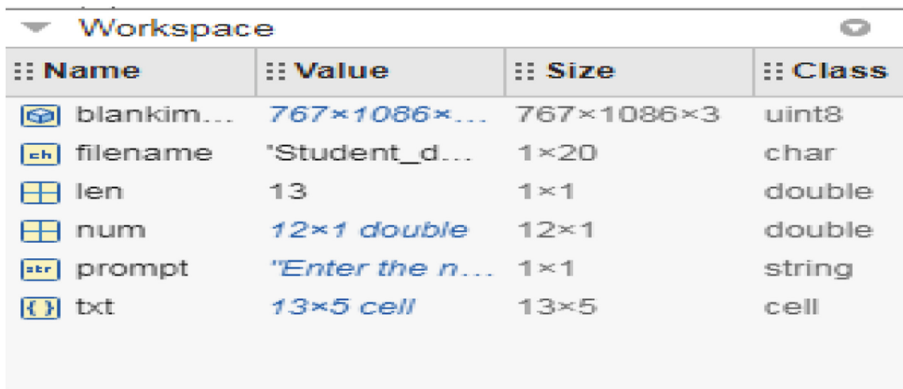
Fig. 2. Details in Excel Sheet

Fig. 3. Blank certificate

certificate, leaving the mail ID column because that column is used to send the generated certificate to their respective mail IDs.

4.3 Generating the Certificate

Initially, upload the Excel sheet and blank certificate into MATLAB. The number of empty spaces in the certificate and the positions where the participant details are to be placed are taken as input from the user. When we run the code, in the command window it will ask the user to enter the number of spaces and then the text will get inserted at the position pointed out by the user. The font style and size of the text can be varied easily in the code. The certificates are created now and mailed to their respective mail

IDs in PDF format, which is very easy to view, download and share. The time taken for generating single certificate was only 1.5s (Figs. 4, 5, 6, 7).

Name	Value	Size	Class
blankim...	767×1086×...	767×1086×3	uint8
filename	"Student_d...	1×20	char
len	13	1×1	double
num	12×1 double	12×1	double
prompt	"Enter the n...	1×1	string
txt	13×5 cell	13×5	cell

Fig. 4. Workspace


```
Command Window
Enter the number of blanks
4

X =

   546.6297
   462.1282
   781.3559
   521.5922


Y =
|
   335.4899
   382.4352
   379.3055
   416.8617

   546.6297   335.4899
   462.1282   382.4352
   781.3559   379.3055
   521.5922   416.8617
```
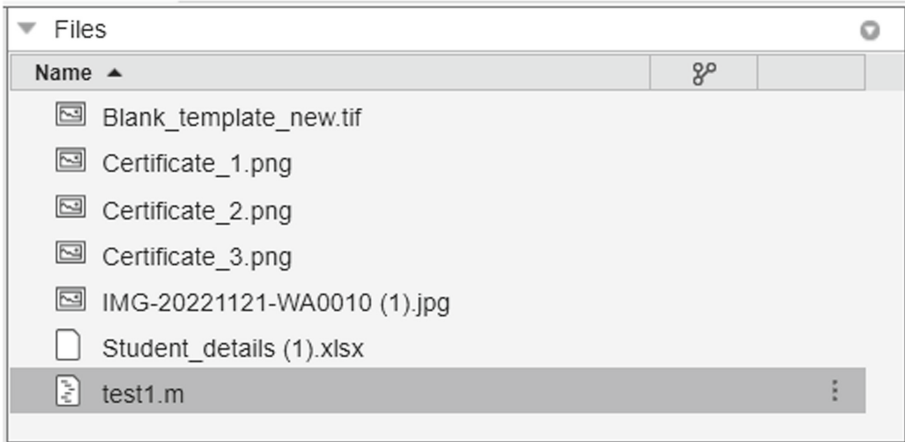
Fig. 5. Command Window

Fig. 6. Working Environment

Fig. 7. Generated Certificate

5 Conclusion

The automatic certificate generation process has revolutionized the way organizations store, manage and distribute certificates. It is a convenient and cost-efficient way to manage certificates, eliminating the need for manual data entry and manual certificate distribution. Automated certificate generation also helps to reduce the risk of errors and

prevents the need for manual proofreading. The process of automated certificate genera-
tion is simple and straightforward. It involves the use of a software program to generate
certificates quickly and accurately. This software can be used to generate certificates for
multiple recipients in a single process. Additionally, automation of the certificate gener-
ation process enables organizations to easily manage and store certificates, eliminating
the need for manual storage and management. It eliminates the need for manual data
entry and manual certificate distribution, and it is a cost-effective solution for organiza-
tions. Overall, automatic certificate generation is an ideal solution for organizations that
need to generate and distribute certificates quickly and accurately.

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