# Advanced Method of Certificate Generation with Mail Automation

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**Abstract:** *An all-new era of software-based intelligent Robotic Process Automation (RPA) has arisen in recent years. The automation of repeated and time-consuming tasks for any organization is becoming more efficient & suitable. Automation of Certificate generation has lots of profits. RPA is an approach to organization workflow automation, in which the program implements the user manipulation to achieve the desired output in the Graphical User Interface. Due to the freshness of this kind of automation, there are no definitions of potentiality, concept, technology, and so on. We use software bots to perform operations with the relevant data. The certificate generation is used to generate multiple copies of certificates with the given data as provided in the MS Excel.*
**Keywords:** *RPA, Automation, Software bots, Organization workflow automation, MS Excel.*

## 1. INTRODUCTION:

Robotic process automation is a modernistic approach to organization workflow automation. Repeated tasks are skipped, such as manual entry of data. In robotic process automation, each program communicates as a typical user does and interact through an existing user interface. There is no need for replacing the IT systems as the simulation of user actions are done through the current user interface and not through the physical environment. The implementation of Robotic Process Automation is quick as there is no use of the IT systems to carry out the workflow. It is possible to remove the bot and return the task, which is processing to the user by changing the steps of automation. RPA naturally rises the operational performance and lowers the costs with quite a modification in the technology. Bots are designed to work 24/7 with their assigned tasks.

The bot is capable of modifying its rules of operation, and the software bots perform their tasks without any errors. RPA is used to create bots that satisfy frequently repeated tasks. It is the crucial feature of Robotic Process Automation. With the increase in loads of essential data, people make lots of errors, whereas the software bots will continue to function reliably. RPA has an enormous effect on many organizations where RPA saves time for different workflows. The decision-making is done by the bot, where there is no inclusion of social support to finish a task. The bot follows specific rules and regulations which are specified and fixed. The software bot is capable of making decisions concerning the flow of processing. The bot once created, can be deployed in any number of systems.

## 2. CERTIFICATE GENERATION USING ROBOTIC PROCESS AUTOMATION:

Our paper, **"ADVANCED METHOD OF CERTIFICATE GENERATION WITH MAIL AUTOMATION"** mainly focuses on time-saving. It reduces human resource, which eliminates the generation of certificates through humans. The bot finishes the certificate creation within fraction of seconds for any number of people with sending them their respective documents individually through the mail.

Mail Automation plays a vital role in this project. The participant's mail IDs are collected in a spreadsheet, and the mail IDs are inputted into the mail automation command. This command sends the particular certificate of that participant to his/her mail ID and also stores a copy of all the documents in a separate folder in PDF format. Robotic Process Automation provides more accessibility for users to automate complex processes using software bots.

## 3. ARCHITECTURE:

At first, we gather all the data of the people using a spreadsheet in MS Excel. Then, we create a bot in the Automation Anywhere Enterprise Client and read the fields in the spreadsheet. Then, by using appropriate commands from the commands tab, we insert the respective participant's details into the certificate template which resides in a Word document and convert it into the PDF format. At last, by using the Email Automation command, the certificates are circulated to the respective participant's through their Mail IDs. The Architecture of our project is depicted below.

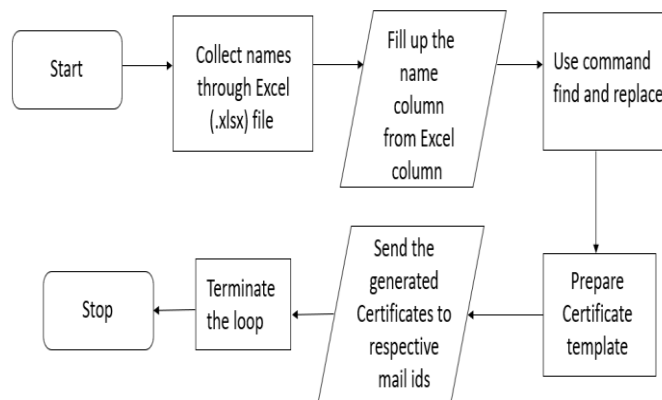Fig. 1. Architecture diagram for certificate automation



## 4. FLOWCHART:



Fig. 2. Flowchart diagram for certificate automation

1) First, we have to collect the details (such as Name, Email ID etc) of each participant in the Excel spreadsheet.
2) Then we have to create a variable which stores the values of each participant that is extracted from the Excel spreadsheet.
3) The bot starts its execution. The name, date and event fields in the Certificate template in the Word document are filled or replaced with the respective details using the **file and replace commands** in the Word document.
4) Then, the Word document is converted into a PDF and the PDF is sent to the respective participant via the **Mail Automation command** in the Automation Anywhere Enterprise Client.
5) The steps 3,4 & 5 are repeated until all the certificates are generated and mailed to the participants.
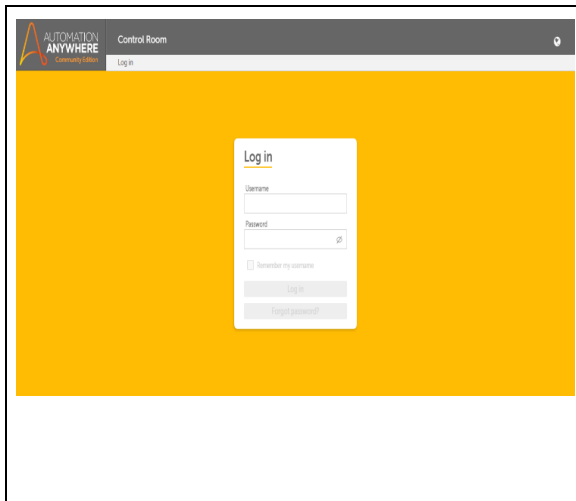6) At last, the bot execution stops.

## 5. PICTORIAL REPRESENTATION:

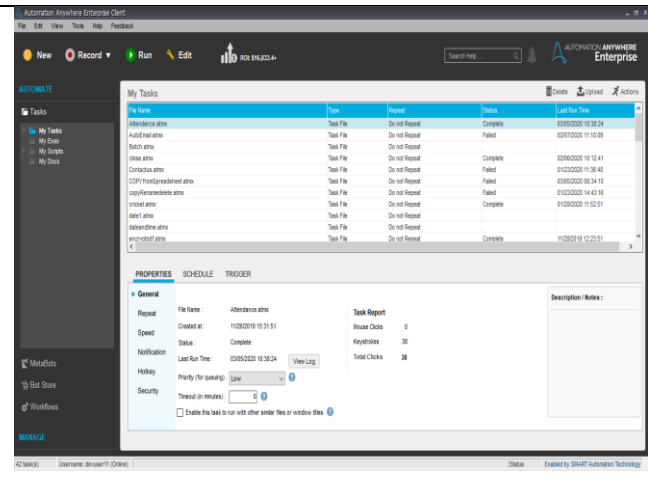

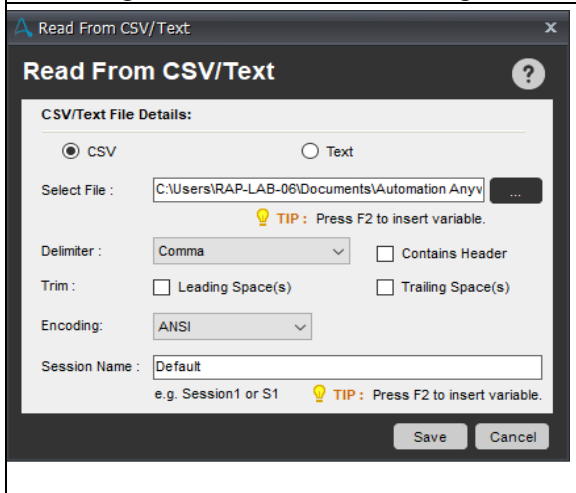| Fig. 3. Control Room for Login | Fig. 4. Client can create bot here after login |
|---|---|



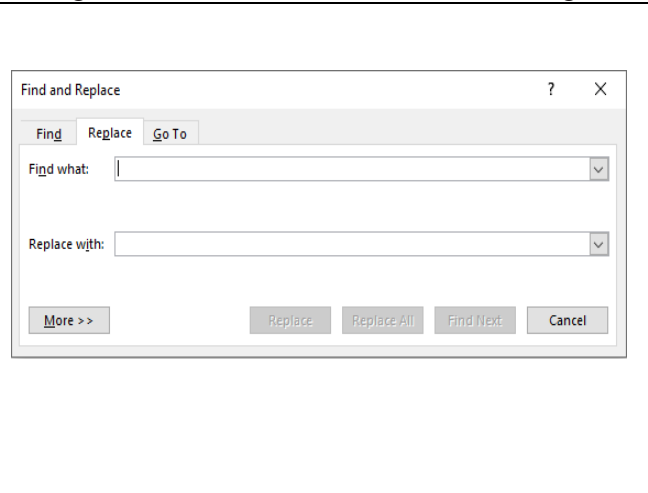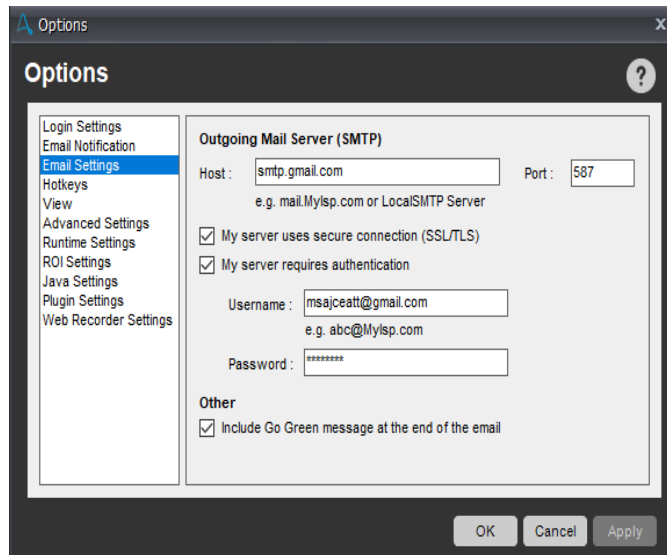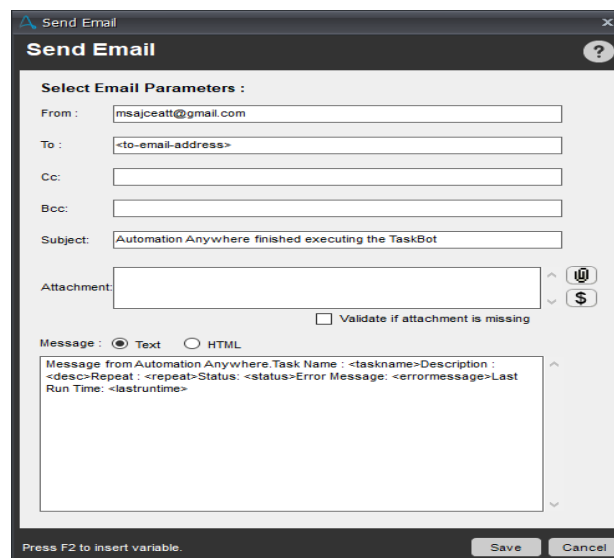| Fig. 6. Find and replace in MS Word | Fig.5.Reading the CSV file |
|---|---|

Fig.7.Email Configuration tab



Fig.8.Sending Email

# 6. APPLICATIONS OF RPA:

## 6.1 Operational activities in sales:
It includes duplicate data, invoice generation and delivery, smooth update Customer Relationship Management (CRM), etc. By handling lots of data for the sales activity, that data can generate duplicate data for this scenario that **"Software Bot"** will handle these activities on their own. For example, RPA can make invoices available to customers much faster than the human performance without any mistakes.

## 6.2 Procure to pay:
It is naturally based on the interaction between the purchasing department and the accounts paying department. Bots can actually handle them proficiently, thereby cross-checking that transactions are well aligned by consistent data.

## 6.3 Portal queries:

Portals are basic arbitrator between organizations and suppliers. The plural is essential in that which highlights the convenience of data integration. Bots can be used to link all your portals, employees with direct access to the collected data.

### 6.4 Data extraction:

Data extraction is the nightmare of monotony for the employees. Well, even though RPA cannot prevent all the difficulty, a minimum of it will alleviate it. As a result of its capability of essential pattern recognition, and since it can convert any text into editable and searchable machine-encoded text, it highly reduces the necessity for manual data entry. So, there are fewer errors and produces rapid results.

### 6.5 Reconciliation:

The primary intention of accounting records reconciliation is that your files can be error-free. By comparison of documents, e.g., the cash book and the bank statement, the procedure is supposed to confirm the dependability of the records. Bots will perform information extraction from bank statements, thereby augmenting the probability of correct comparisons. By matching orders, bots will even reconcile purchase orders with delivery notes. By doing so, they guarantee the compatibility of orders and deliveries.

### 6.6 Price comparison:

*Software bots will keep track of unsteady costs. Bots will mechanically extract knowledge for the best rating from different websites. For example, comparing the price of a particular mobile in Flipkart & Amazon.*

### 6.7 Data management:

Relevant information comes from a range of sources that have to be compelled to be placed along and analysed systematically. The top results should be passed on to the business executives in the due time. This involves plenty of careful processes, paying attention to an embarrassment of details. For humans, this is often long and stressful. The software bots, on the other hand, will screw it faster and accurately.

### 6.8 Payroll management:

Collecting data required for the payroll processes has been the most time-consuming task. The information needs to be standardized after it has been captured. Implementing RPA in payroll management creates a single source of truth a over any organization.

As data validation is an elongated process, checking each field with expense records and others, it can be automated using RPA. Then, the bot will validate the whole database, thus avoiding errors. RPA in payroll can be used to schedule and accomplish repeated tasks in a single click, thus neglecting the efforts.

### 6.9 Auto-generation of reports:

Much unlikeable as they will be, regular reports are very necessary for a business, so that the executives and also the lower-level workers will keep track of, and cooperate with what happens within a company.

Software bots are ready not only to place necessary information but also distribute them as they reach everyone. It definitely eases the struggle of compliance.

### 6.10 Customer service operations:

Customer service is one of the complicated activities in a company. The Man-Machine collaboration may immensely improve the client satisfaction, whereas at the same time, creating the tasks less nerve-wracking for the employees.

The repetitive, simple and high-frequency tasks like modifying the client profiles can be automated which reduces the client's wait time and permitting your employees to take advantage of their human-specific communication skills.

## 7. SAMPLE OUTPUT:



Fig.9.Sample certificate

## 8. CONCLUSION:

In this article, the problems in manual certificate generation are reduced and the new method of certificate creation and distribution based on Robotic Process Automation is implemented. The process not only includes certificate creation but also the circulation of those certificates to the appropriate participants via their Email ID's through the Mail Automation command. Our idea is to decrease the time-consumption and manual works of people by replacing their operations with a bot. The bot finishes the execution within a fraction of second for any number of participants and distributes the certificates in the form of a PDF file. The loop is terminated after all the participants certificates are generated and they are distributed to each participant. This efficient RPA automation reduces the errors that are done by the manual work.

Therefore, the proposed method is the most efficient & reliable. It eliminates the manual work with RPA software and abate the time-consumption.

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