

Method of Robotic Process Automation in Invoice Processing and Mailing: Implementation

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Abstract: Robotic process automation (RPA) is a software technology used to automate various processes. With RPA, software users create software robots, or “bots”, which will learn, mimic, then execute rules-based business processes. RPA automation enables users to make bots by observing human digital actions. Show your bots what to try to, then allow them to do the work. Robotic Process Automation software bots can interact with applications or system the way people do except that RPA bots can operate round the clock, nonstop, much faster and with 100% reliability and precision. This paper demonstrates complete assessment on RPA bots. RPA bot is created using Automation Anywhere and is used for invoice automation.

Keywords: Robotic Process Automation (RPA), Invoice automation, Mailing, RPA tools, Automation anywhere.

1. Introduction

Robotic process automation (RPA) could also be a software technology that makes it easy to form, deploy, and manage software robots that emulate human’s actions interacting with digital systems and software. rather like people, software robots can do things like understand what’s on a screen, complete the right keystrokes, navigate systems, identify and extract data, and perform an honest range of defined actions. But software robots can love faster and more consistently than people, without the need to urge up and stretch or take a snack. Robotic process automation streamlines workflows, which makes organizations more profitable, flexible, and responsive. It also increases employee satisfaction, engagement, and productivity by removing mundane tasks from their workdays.

RPA is non-invasive and should be rapidly implemented to accelerate digital transformation. And it’s ideal for automating workflows that involve legacy systems that lack APIs, virtual desktop infrastructures (VDIs), or database access.

2. Literature Survey

Surendhiran Tamilalagan [1] expressed Invoice management is a function within the organization related to the allocation of funds and is responsible for processing the invoice process for transactions between the seller and the distributor. As with all other financial processes, invoice management has become a formal challenge for organizations. The department handling the process cannot overcome this problem as the maximum

number of invoices should always be considered based on raw material of various kinds. Invoice process management is also known as Process Document in RPA technology, which reflects the automated process of capturing the flow of business process with a high degree of accuracy.

Sagar Sahu, Sania Salwekar, Atharva Pandit, Manoj Patil [2] described during this paper recent effort to develop an automotive application to remodel invoice process in Finance operations. As a main example of the technology’s potential for driving potency, Robotic method Automation (RPA) are often applied to variety of finance and accounting operations, invoice process. RPA DataBot will automatize information input, error reconciliation, and a few of the decision-making needed by finance employees once process invoices. At an equivalent time, automation is ready to limit errors in such processes and scale back the necessity for manual exception handling. UiPath’s RPA DataBot ar able to perpetually monitor a zealous folder wherever invoices ar saved by staff (or alternative DataBot) in PDF format. Once robots find the presence of associate degree invoice within the folder, they start to extract info from the document. victimization intelligent Optical Character Recognition (OCR) and tongue process capabilities, DataBot are able to scan out the knowledge that’s visible on the invoice.

Jorge Ribeiro, Rui Lima, Tiago Eckhardt, Sara Paiva [3] presented Associate in Nursing investigation on RPA with AI for ERP-related processes. it had been supported the analysis of knowledge researched in digital libraries on the online (corporate websites and tools, blogs, etc.), also as in scientific digital libraries. a group of proprietary tools (UiPath, Kofax, Automation anyplace and WinAutomation) and Opensource tools (AssistEdge and Automagica) were known, and for every of them a characterization of their RPA options, their integration with ERPs and support for ERPs was created. we tend to conclude that almost all of the proprietary tools implement algorithms related to the objectives of AI, like recognition, optimisation, classification and extraction of information from either RPA documents or processes. It conjointly enhances their optimisation and exploration of the data by the users of those applications. The AI techniques and algorithms that these tools implement, target pc vision (image recognition victimisation for instance Artificial Neural

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Networks), applied math strategies, call trees, neural networks for classification and prediction, formal logic and implementation of techniques related to text mining, tongue process and recommendation systems.

J. Chacón-Montero, A. Jiménez-Ramírez, J.G. Enríquez [4] In the article, the authors have implemented RPA in various processes and its results is discussed. It was observed that RPA in these processes is 78% more effective than humans doing the same job. The RPA bot is also tested. A virtual environment is created and the RPA bot is tested in this virtual environment. Creating a virtual testing environment saves money and other resources.

Nataliya Yatskiv, Solomiya Yatskiv, Anatoliy Vasylyk [5] suggested the use of AI with RPA for software testing. Using AI increase productivity and save resources. Computer Vision is used for recognizing objects and collecting its data. RPA tools are divided depending on their functionality and AI support level. The major tools are included in: Excel automation and macros, Programmable solution bots, Self-learning tools, cognitive automation tools.

3. RPA Tools

Automation Anywhere: Automation Anywhere is a well-known RPA vendor that provides robust and easy-to-use capabilities for automating any complex business process. This utility combines all of the essential features. It blends RPA with cognitive features such as language comprehension and unstructured data reading. It is a web-based management system that allows businesses to govern and manage end-to-end automated business processes. It enables the automation of a wide range of tasks, ranging from simple Windows settings to advanced networking and remote database processes.

UiPath: UiPath is a powerful Robotic Process Automation solution for automating desktop and web applications. It allows multinational corporations to create and deploy a robotic workforce for their businesses. The nicest part about UiPath is that it has a community edition with drag-and-drop functionality. As a result, people with no programming experience can utilize UiPath to automate processes. People can use the community edition for free to learn, practice, and deploy RPA.

Blue Prism: Blue Prism is an RPA tool that provides businesses with a virtual workforce. It enables enterprises to quickly and cost-effectively automate manual, repetitive, and rule-based business operations. It has drag-and-drop functionality for automating activities. Blue Prism is made on the Microsoft .NET Framework. It automates any application and supports any platform (mainframe, Windows, WPF, Java, web, etc.) presented in an exceedingly type of ways that (terminal aper, thick shopper, skinny shopper, browser, Citrix and net services). it's been designed for a multi-environment readying model (development, test, staging, and production) with each physical and logical access controls. Blue Prism RPA software system includes a centralised unleash management interface and method amendment distribution model providing high levels of visibility and management. further management is provided to the business via a centralised model for method

development and re-use. Blue prism records each system login, amendment in management action, and selections and actions taken by the robots to spot statistics and period operational analytics.

Pega: Pega is a robotic process automation (RPA) solution that may be used to automate repetitive operations in a workflow. It adds the ability to automate processes using current apps' user interfaces. User activities are automated to speed up manual tasks.

WorkFusion: WorkFusion is a cloud computing platform that provides software as a service (SaaS). It automates data stream monitoring and aids in the management of crowd-sourced personnel from worldwide talent markets. To assure the accuracy of the job produced, WorkFusion employs statistical quality control.

Rapise by Inflectra is primarily a check automation system specializing in testing complicated applications like MS Dynamics, Salesforce, SAP. currently in its seventh version, Rapise provides support for hybrid business situations and may automatize internet, Desktop, and Mobile applications. With Rapise, checkers and engineers will hook up with the programme of the applications underneath test, simulating the user actions to finish the business tasks. whereas Rapise is friendly each for programmers associated non-developers and is out there as an on-premise answer.

4. Proposed Solution

As previously indicated, RPA companies such as UiPath, Automation Anywhere, Blue Prism, and others were present. We chose Automation Anywhere because it provided all of the functionality we were looking for. IQ Bot, PDF Extract Field, and Optional Character Recognition were among the possibilities (OCR). We chose the PDF Extract option since we thought it was the most appropriate for our needs.

A. Methods Used

PDF Extract Field: The PDF extract field is the mechanism we utilized to extract data from PDF files. This is a complex yet simple approach for extracting data from PDF files. To use this strategy, the bot must be educated or told as to where to look for the data that must be entered into the excel sheet. After teaching the bot where to look for data, it takes each invoice pdf as input and stores the data in a variable, which is then provided to another function, which assists in putting the data from the variable into the excel sheet.

Excel Advanced: We used the Excel Advanced feature to perform operations in the excel spreadsheet. This method includes a number of distinct functions that can be used to execute various actions on the spreadsheet.

Email: This is a feature in the software platform that includes several functions that are useful for managing various functions when sending an email.

B. Process

The procedure entails the use of a series of diverse functions in order to complete the tasks. The process involves the following steps:

1. Create an excel spreadsheet with relevant headers.
2. Begin a for Each loop in a folder to open each invoice file, then feed it to the following function, the PDF Extract field.
3. Teach the bot to extract data and store it in variables.
4. Insert the data from the variables into the excel sheet, then close the excel document using the various functions from the Excel Advanced method.
5. After the loop is finished, send the excel file to the relevant recipient using Gmail.

The credentials for the Gmail account from which the email must be sent must be stored in the software platform's credential locker. The credentials must then be used to send an email. This method of storing credentials is preferable over storing them in variables because it keeps the credentials secure and private.

5. Conclusions

This article contains a briefing about what is RPA? What are its components and how to use and implement them for better outcome. In this paper we have discussed the struggles and difficulties in manually processing invoices referring multiple sources.

We have highlighted the various RPA tools available and their applications. Since Automation Anywhere satisfies our requirement, we chose it. Later we have a detailed description about the various methods of extracting data from the invoices

and the process of the working bot.

Robotic Process Automation (RPA) is the optimal solution for replacing repetitive human actions and activities. This paper finally tells how automation anywhere can be used to replace manual invoice processing and mailing using PDF extract field and excel advance. By doing we can increase the accuracy and efficiency by a large extent and save ample amount of time.

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