# Robotic Process Automation of Reports Segregation using Uipath

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***Abstract-*** There are many repetitive processes in an organization, starting from a regular mail check to many big issues. Employees are being hired to work on these repetitive tasks which involve lots of human work, time and cost. To avoid the more cost and time involved in a process, Automation of the repetitive tasks are necessary, Automation is the process of completing particular tasks without human intervention in an error free and fast manner. Introducing artificial robots with the help of machine learning and artificial intelligence and completing human tasks without their intervention is said to be Robotic Process Automation and is also known asRPA. UiPath is the tool used for completing the RPA tasks in minimizing the performance over heads, cost incurred by the organization and increase the efficiency of the organization with the help of software robots that can be configured to perform repetitive tasks like segregating the data of various fields in an organization and sending the data with the particular stake holdersetc. With the help of UiPath tool, many repetitive tasks of the organization can be automated and thus, helping the human strength to be involved in some other process for better use.

***Keywords-*** IT automation, UIPATH, Robotics, Vendor skill management.

## I. INTRODUCTION

IT automation is the utilization of guidelines to make a rehashed procedure that replaces an IT expert's manual work in server farms and cloud deployments. Software tools, systems and apparatuses direct the errands with least overseer intercession. The extent of IT automation ranges from single activities to discrete successions and, eventually, to a self-governing IT arrangement that takes activities in light of client conduct and other occasion triggers. IT automation is unique in relation to coordination, yet usually, the terms are utilized together. Automation achieves an undertaking over and over without human mediation. Arrangement is a more extensive idea wherein the client organizes mechanized assignments into a durable procedure or work process for IT and the business. For instance, an IT overseer empowers remaining task at hand scaling with mechanized occurrence creation, working framework (OS) introduces and capacity provisioning. They arrange the automation undertakings in a work process with a particular request of activities for each errand. Arrangement can likewise incorporate consents and jobs authorization, endorsement doors and the sky is the limit from there. IT automation depends on software tools to characterize and direct a recommended arrangement of point by point activities that are conjured physically or by an outside trigger, for example, an adjustment in IT limitrequest.

IT automation replaces a progression of activities and reactions between a chairman and the IT condition. For instance, an IT automation stage, for example, Microsoft Windows PowerShell, joins cmdlets, factors and different segments into a content to emulate the arrangement of directions and steps that an overseer would conjure one line at any given moment through the order line interface (CLI) to arrangement a virtual machine (VM) or actualize a reinforcement procedure. A more mind boggling IT automation result can be accomplished by consolidating various contents into an arrangement. These constrained extension automation forms are most useful when they supplant an errand that a head needs to perform as often as possible. Administrators don't spare much, assuming any, time via computerizing a repetition activity made once every month. Robotizing a repetition activity that happens different times each day, nonetheless, altogether builds a chairman's the ideal opportunity for different undertakings that require basic leadership and appraisal aptitudes. Undertaking class IT framework automation tools trigger activities in light of limits and other situational conditions in the IT condition. Propelled IT automation tools regulate the design of frameworks, software and other foundation parts; perceive unapproved or surprising changes; and naturally take remedial activities. For instance, if an outstanding task at hand quits reacting, this triggers the computerized ventures to restart it on an alternate server that has accessible ability to run it. When IT automation is set to authorize a coveted condition of setups, the instrument will identify changes in a server's arrangement that are out of spec and reestablish it to the rightsettings.

## II. RELATED WORK

The related work on the web scratching strategies includes in this paper the different viewpoints, for example, unique web scratching semantic levels and the nostalgic methodology has been incorporated. This paper gives the examination on human feeling mining where screen scratching assumes the significant job. The most widely recognized accessible tools and systems are been utilized by numerous clients which are

free and simple to utilize. Utilizations the calculation to clarify UiPath utilizing Tree alter separate coordinating calculation. The issue of figuring the tree alter remove between trees is a variety of the exemplary string alter separate issue for extricating information. The creators have an investigation on the strategies of web content mining and relate web scratching tools that are accessible. As this paper comprises numerous themes under information mining which gives the unmistakable thought on the diverse accessible systems under information mining and we can contrast this and web scratching. The creator of in this paper the creator has ascertained the aggregate assessed estimation of web scrubbers in enterprises which has an overview as 68% is utilized for web based business and web-based social networking, rest of which is advanced news distributing and online indexes. As the expansion being used of web increasingly and of the clients tend to utilize long range informal communication destinations .The papers, has embraced the web scratching strategies in the web promoting field which likewise clarifies the communitarian separating methods for web scratching with favored usage advertisements. As the scratching has utilization in adverting field this has turned out to be imperative in learning different strategies.

## III. ROBOTIC PROCESSAUTOMATION

Robotic process automation (RPA) is the use of software with artificial intelligence (AI) and machine learning capabilities to handle high volume, repeatable tasks that previously required humans to perform. These tasks can include queries, calculations and maintenance of records and transactions. RPA technology, sometimes called a software robot or bot, mimics a human worker, logging into applications, entering data, calculating and completing tasks, and loggingout.

RPA software isn't part of an organization's IT infrastructure. Instead, it sits on top of it, enabling a company to implement the technology quickly and efficiently all without changing the existing infrastructure and systems.

### THE EVOLUTION OF RPA

Although the term "robotic process automation" can be traced to the early 2000s, it had been developing for a number of years previously. RPA evolved from three key technologies: screen scraping, workflow automation and artificial intelligence.

**Screen Scraping** is the process of collecting screen display data from a legacy application so that the data can be displayed by a more modern user interface. The advantages of **workflow automation** software, which eliminates the need for manual data entry and increases order fulfillment rates, include increased speed, efficiency and accuracy. Lastly, **artificial intelligence** involves the ability of computer systems to perform tasks that normally require human intervention andintelligence.

### APPLICATIONS OFRPA

Some of the top applications of RPA include:

a. **Customer service:** RPA can help companies offer better customer service by automating contact center tasks, including verifying e-signatures, uploading scanned documents and verifying information for automatic approvals or rejections.

b. **Accounting:** Organizations can use RPA for general accounting, operational accounting, transactional reporting andbudgeting.

c. **Financial services:** Companies in the financial services industry can use RPA for foreign exchange payments, automating account openings and closings, managing audit requests and processing insurance claims.

d. **Healthcare:** Medical organizations can use RPA for handling patient records, claims, customer support, account management, billing, reporting andanalytics.

e. **Human resources:** RPA can automate HR tasks, including on boarding and off boarding, updating employee information and timesheet submissionprocesses.

f. **Supply chain management:** RPA can be used for procurement, automating order processing and payments, monitoring inventory levels and trackingshipments.

## IV. UIPATH

Robotic Process Automation is one of the most in demand fields in the IT industry today. Companies are always looking for solutions to automate their small processes so that the human strength involved in those processes can be put to better use someplace else. This demand for RPA has led to the development of a number of tools that are both licensed and open source. Many such tools are now available on the market. Some of the popular RPA toolsare:

a. Automation Anywhere
b. BluePrism
c. UiPath
d. OpenSpan
e. WorkFusion

For this work, UiPath has been selected as it offers a lot of flexibility and is easy to use.

### UiPATH

UiPath is an enterprise computing platform dedicated to automating business processes. It provides process modelling, change management, deployment management, access control, remote execution and scheduling, execution monitoring, auditing, and analytics in full compliance with the enterprise security and governance best practices.

UiPath offers a variety of modules for automating a number of processes:

f. UiPathStudio

UiPath Studio is the highly visual productivity environment where business users can model end-to- end business processes into a process diagram with simple drag-and-drop functionality. Advanced error checking and history visibility ensure flawless execution and detailed project monitoring.

g. UiPathOrchestrator

UiPath Orchestrator is a scalable RPA server, fully integrated and equipped with centralized instrumentality for enterprise class management, security, compliance, support, and auditability. Our Orchestrator records everything the robots do through log files and transforms them into advanced analytics.

h. UiPath Front OfficeRobots

UiPath Front Office Robot is the agent-assisted robot that shares the same workstation with human employees and assists them to automatically execute business activities.

i. UiPath Back Office Robots

UiPath Back Office Robot is the autonomous software robot programmed to run unattended, independent from humaninteraction.

Types of UiPath Automation Desktop Automation

If you just copy a few fields from an application and paste them into another application, import sales data from an Excel spreadsheet and fill out an online form, it is already time-consuming, tedious, and error-prone. It is time to automate this process. The question is not if rule-based tasks should be automated, but what does it take to automatethem?

An Excel macro is a good start, but how can you fill data into another application? Even a simple macro requires programming knowledge, and you do not want to involve your IT department in simple tasks. Many businesses and IT processes are affected by repetitive, rule-based tasks that involve manipulation of the software of various applications.

UiPath Desktop introduces a visual, declarative way of describing how to automate a process, and you can use it in the same way you use a Visio diagram. When working with the presentation layer of other apps, you simply indicate on the screen what operation you need to perform. UiPath understands the UI at the logical control level and does not rely on the position of elements on screen. This makes automation much more reliable and independent of screen-size and resolution.

## V. UIPATHSTUDIO

UiPath Studio is a complete solution for application integration, and automating third-party applications, administrative IT tasks and business IT processes. One of the most important notions in Studio is the automation project.

A project is a graphical representation of a business process. It enables you to automate rule-based processes, by giving you full control of the execution order and the relationship between a custom set of steps, also known as activities in UiPath Studio. Each activity consists of a small action, such as clicking a button, reading a file or writing to a log panel.

The main types of supported projects are:

a. **Sequences** - suitable to linear processes, enabling you to smoothly go from one activity to another, without cluttering your project.
b. **Flowcharts** - suitable to a more complex business logic, enabling you to integrate decisions and connect activities in a more diverse manner, through multiple branching logicoperators.
c. **State Machines** – suitable for very large projects; they use a finite number of states in their execution which are triggered by a condition (transition) oractivity.

## VI. UIPATHROBOT

The Robot is UiPath's execution agent that enables you to run workflows built in Studio.

A Robot is installed as a Windows Service by default. As a result, the Robot can open Windows sessions (interactive or non-interactive), under the Local System account, and has all the rights of a Windows service.

Robots can also be installed in a user mode. For your Robot, this means that it has the exact same rights as the user under which it has been installed.

Regardless of the mode in which you installed the Robot, it can still be connected to Orchestrator.

The Robot is split into four components, each being dedicated to a particular task in your automations. The Robot componentsare:

- **Service** (UiPath.Service.Host.exe):
  - Manages and monitors Windows sessions and acts as a proxy between Orchestrator and the executionhosts.
  - Trusted with and manages the credentials for Robots.
- **Executor**(UiPath.Executor.exe):
  - Runs the given jobs under a Windows session (executes workflows).
  - Is aware of per-monitor DPI settings.
- **Agent** (UiPath.Agent.exe, RobotTray):
  - A WPF application which displays the available jobs in the system tray window.
  - Is a client of**Service**.
  - Can request to start or stop jobs and changesettings.
- **Command Line** (UiRobot.exe, Command line):
  - Is a client of**Service**
  - A console application that can request to start jobs and waits for their output.

**Types of Robots**

1. **Attended** - operates on the same workstation as a human, to help the user accomplish daily tasks. It is usually triggered by user events. You cannot start a process from Orchestrator on this type of Robots, and they cannot run under a locked screen. They can be started only from the Robottray.
2. **Unattended** - run unattended in virtual environments and can automate any number of processes. On top of the Attended Robot capabilities, this Robot is responsible for remote execution, monitoring, scheduling and providing support for workqueues.
3. **Non Production**- retains all the features of the Unattended Robot, but it should be used **only** for development and testingpurposes.
4. **Development** - has the features of an Unattended Robot, but it should be used only to connect your Studio to Orchestrator, for developmentpurposes.

**Connecting a Robot to Orchestrator offers the following benefits:**

1. a centralized location from which to deploy automation projects toRobots
2. an easier and centralized point for the management and monitoring of multiple Robots
3. the scheduled execution of automation processes onRobots
4. the management of queues andtransactions
5. centralized Robot logging to SQL and/or ElasticSearch

## VII. Robotic Process Automation of Reports Segregation UsingUiPath

In general terms, the word segregation means the action or state of setting someone or something apart from others. In an organization there will be an uncountable amounts of data which is segregated manually with the help of one or more than one individual or teams working to segregate the data and share it with their respective stake holders.

This process usually involves a lot of time and more manual hard work. By using RPA techniques, using UiPath tool, the segregating of the data can be automated and the data can be passed out or sent to their respective stake holders. This not only reduces the overall time taken for obtaining the output or the final result, it even helps the associates involved in this manual segregation utilize their valuable time in more productiveworks.

There are many departments in an organization, they name the various departments in their own way. In this case, considered in an organization's point of view, the segregation of manual data of two benches i.e., **IBG** and **CDG** 's data is of large number where the data has to be sent to the individual associates and even to their respective stake holders.

## VIII. PROPOSED METHODOLOGY

In this case, lots of time is consumed in finding the right data and segregating it and sending the data via mails to their individuals or stake holders or sometimes both. This segregation and sending the data to their respective stake holders is automated. Thus by saving lots of time and by making the output fast, errorfree.

The process of Segregating IBG and CDG bench and sending it to their respective stake holders is explained in a step wise manner:

The process of segregating the associates with respective to their fields is as follows:

1) go to login page of anorganization
2) after login

gotomenu ⟶ RMGreports ⟶ Downloadreport

3) open the report (Excelsheet)
4) got to Revenue status GE column andselect
   i. Bench available for deployment
   ii. Campus- New trainees ready for deployment
   iii. Internally competency project ⟶ whoareallocated for Global Development Centre (GDC) portal development
   iv. Non available forDeployment (maternity leave, long leave, exit, Audient reviewcases)

By performing filter operation

5) now go to Employee cluster column and select
   i. Competency Business Unit –Independent Management System
   ii. SDU-HRD By performing filteroperation
6) We will take these associates in newsheet.
7) Go to BW status column whichconsists
   i. B.Vpending
   ii. POawaited
   iii. Transfer outpending
8) Will send the mail to respective Team Manager of the associates regarding the status of theassociate.

**Business Wait associate**:

The above process is being done for knowing the number of Business Wait Associates in a CDG Bench. These associates can be categorized as the ones currently not working under any project. These associates are payed salaries even when they are not into any project for days or sometimes monthstogether.

The multiple reasons are asfollows:

**a) Background Verification (B.V) pending case**:

Some of the employees will go to client location and work there. Before they start working there, they will undergo a Background verification check. The Background verification

generally will take 14 to 21 days. After taking business wait associates into another sheet we will check the BW status. In the BW status column, there is the information about the number of days of the background verification process. If the number is more than 21days then the process is being delayed and we will send the email to respective manager of the associate. In mail we will ask the reason for delay and current status of the employee and ask them to change the status of the employee if they are going to be allocated to the project. This segregation process is done for every 15days.

**b) Project OrderAwaited:**

Sometimes associates are allocated to the project but the project has not been started yet. In this case also company is paying salaries to the associates, even though they are not doing any work. The project delay can have many reasons. A mail is sent to respective TMG manager of the associate. For every 15 days we will check the status of the associate, and if there are any chances of a project with that particular associate then the manager is sent a mail to change the status of the associate to working in a particularproject.

a. Yes, and then change the status of the employee.
b. Not, ask the reason fordelay.

**c) Transfer outPending:**

There will be few associates in a company who apply for transfer to another place and they are waiting for the approval of their transfer. There are few reasons for why the associates have to wait for their transfer being approved by the manager. Some transfers are not approved because there is no vacancy for the respected post in the location in which the associate need.

Some has to be initiated by the respective manager. These associates come under transfer out pending category. The mails are sent to the respective manager of the associates in initiating the transfer.

For long considered a key strength of India's tech majors, the bench is losing its relevance even as just- in-time contract hiring is gaining popularity. More companies are hiring techies on relatively short, fixed-term contracts, rather than employing them full-time even when there are no projects.

Automation, creeping unionism, and a global closing of borders for techies have in recent times accelerated this process. So much so that the average IT company's bench strength has progressively fallen from between 8% and 10% of the billable employees to between 4% and 5% now, human resources (HR) expertsbelieve.

**What is the bench?**

In the IT industry, the bench refers to the section of a company's employees that isn't working on any project for the time being but remains on the rolls and receives regular salary.

"The best way to answer this question is with an analogy…In football or cricket there are only 11 players allowed on the pitch/ground. So there are 5/6 players out as subs ready to come on in case of injuries. These players usually sit (or at least used to) on a bench and hence the expression 'Sitting on the bench,'" is termed. Companies don't have to hire full-time employees and then bench them when there are no projects.

The bench, like a hologram, looks different from every angle. For IT firms, it is often an important factor their clients consider. A strong bench is an indication that the firm has ready resources and can begin execution immediately. But having too many people on the bench doesn't reflect well either. It would mean employees are underutilized, and this would impact the profitability of the firm. Firms rarely speak about their bench size and are always working towards high utilization rates.

**The beginning of the end**

Now, IT companies are increasingly seeking "just-in- time" employees on contract and industry experts see this as a trend that will replace the bench. The idea behind having a bench was to ensure that employees are available to start working on projects as soon as the customer assigns a task to the IT firm. Instead, now they are seeking techies who can come on board in quick time only for specific projects, after which they either move on to other jobs, join the same company's next project or, at times, get absorbed into the company as a full-timeemployee.

HR experts believe contract employees are a better alternative to the bench. They are as effective in terms of deployment, they help cuts down costs, the company can pick professionals with better skills, and, finally, helps the companies avoid mass layoffs and subsequent protests. A recent industry research on accounting and finance professionals found that in reality, RPA software has huge potential to eliminate the most time-consuming and repetitive manual processes that make up an accountant's day-to-day work. Robotics process automation can improve efficiencies to deliver more accurate intelligence data and also provide real-time access to finance data with reporting and analyticcapabilities.

**1) Reduced costs:** By automating tasks, cost savings of nearly 30% can be achieved over the output of productivity. Software robots also cost less than a full timeemployee.

**2) Better customer experience:** Deploying RPA frees up your high-value resources for them to be put back on the front line defining your customer success.

**3) Lower operational risk:** By eliminating human errors such as tiredness or lack of knowledge, RPA reduces the rate of errors thereby providing a lower level of operationalrisk.

According to research, "a successful RPA implementation can yield a 40 to 80 percent reduction in processing costs, and up to an 80 percent reduction in

processingtime."

Those are some unquestionably newsworthy numbers, predicated on the successful implementation of RPA. When applied to the right processes, RPA delivers on its promises to dramatically reduce cycletime.

RPA provides you with an unlimited resource pool that mimics human behavior and automates mundane, repetitive tasks that hamper your employees' productivity. This resource pool is not made up ofhumanoid robots, but software code that is delivered from the cloud to any location across the globe 24/7/365.These bots never take a break, and if there's no flaw in their input logic, never make a mistake.

RPA makes it possible for employers or employees to not have a firm understanding of the technology behind the system, but still be able to reap thebenefits from it. Robotics process automation makes you assign manual and repetitive tasks to a software that can keep repeating it without error or breaks, helping you get rid of low-importance tactical jobs, so you can better concentrate on yourhigh-value strategic jobs that actually contribute to your bottom- line.

## IX. CONCLUSION

To summarize RPA (Robotic Process Automation) is the automation of repeatable and rule based tasks by the use of non-invasive software called BOT which can mimic actions performed by human users on computers to complete various business processes. Instead of working on repeatable jobs, people can get re-skilled in RPA technologies. This challenge is in fact an opportunity in disguise for people with knowledge of processes and domain.

Finally, Report Segregation is automated using UiPath tool by deploying virtual robots into the regular tasks which are performed in an organisation. By automating there is much lesser time consumed when compared to a manual process which is performed by a human being. Let us consider, a regular process takes a time of around 20 minutes to perform and to obtain an output or the result, involves one or more than a human to perform operations on it and to cross check before proceeding for the finalresult.

By automating this whole 20 minutes of process (e.g.,) just by deploying artificial robots in the process by linking the necessary data to the tool used for automating i.e., UiPath. The task is performed within 2 minutes or even lesser, sometimes the result can be obtained within secondsitself.

This makes the human work easier and even error free. There is no need of one or more than one human working for the regular process in an organisation. Instead this time can be utilised by them in putting up some creative work or any other. There are few pros in introducing automation in the regular processes etc. They are asfollows:

a. Saves a lot of time as mentionedabove
b. The time which is saved can be utilised for some
c. otherwork
d. Requires less humanintervention
e. Robots work as we schedule them to automate
f. Low cost, more reliable, errorfree

Here, Reports Segregation involves and helps in segregation of various results, reports of various teams available in the various organizations in IT sector. This automation can be used and applied where ever there are chances of repetitive and regular processes to be performed.

## X. FUTURE SCOPE

As per many market researches, the RPA market is poised to reach USD 2,467 million by the year 2022. This research is done by Markets and Markets research private limited. There are various research and consulting firms forecasting about the global RPA market which may vary as per the respective research methodologiesadopted.

But one point which is clear that RPA is one among the latest technologies with great year-on-year growth opportunities. Application areas of RPA are Finance, Accounting, Supply chain management, Healthcare, Customer service, IT support and any other operational areas with repeatable rule based tasks andprocesses.

Hence, Indian IT services and product companies are embracing RPA with open arms and coming up with innovative RPA solutions in various verticals for their respective customers and helping them in optimizing their operations and achieving cost savings.

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