Robotic Process Automation- Case study

Cognitive Convergence is Subject Matter Expert in Office 365, Dynamics 365, SharePoint, Project Server, Power Platform: Power Apps-Power BI-Power Automate-Power Virtual Agents.
We offer Power BI consulting services covering solution architecture refinement, customization, integration, transformation, visualization and analytics to uncover insights hidden within data and enhance data exploration.

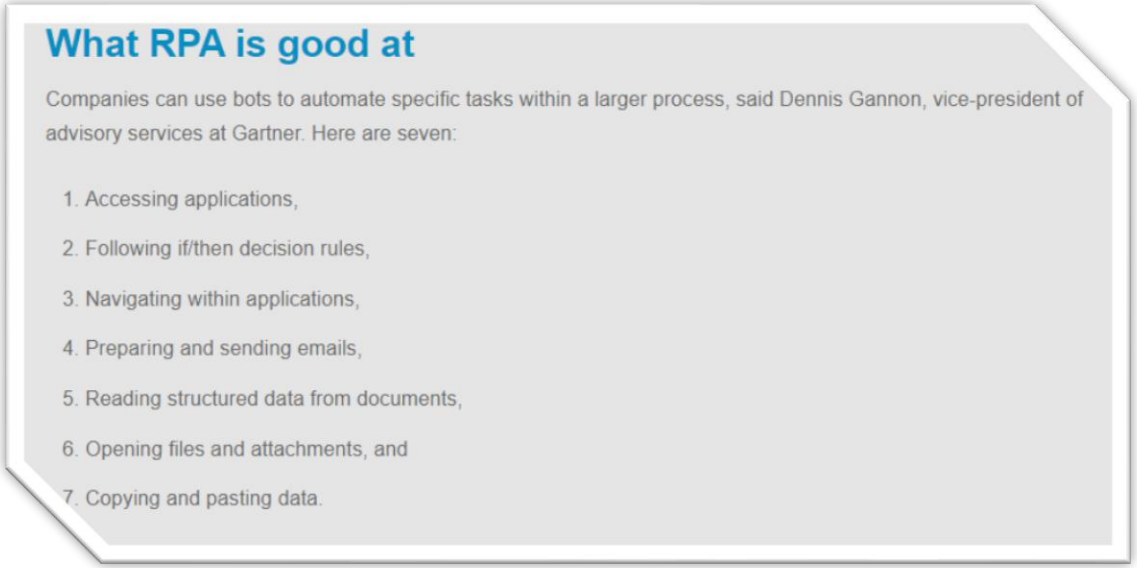
Contents

OBJECTIVE

The purpose of this case study is to have an overview of Robotic Process Automation technology, which is used to automate all the manual processes, with the use of software bots. The tools and technologies used for this purpose are discussed here.

ROBOTIC PROCESS AUTOMATION (RPA)

With RPA, software users create software robots, or “bots”, that can learn, mimic, and then execute rules-based business processes. RPA automation enables users to create bots by observing human digital actions. Show your bots what to do, then let them do the work. Robotic Process Automation software bots can interact with any application or system the same way people do—except that RPA bots can operate around the clock, nonstop, much faster and with 100% reliability and precision.



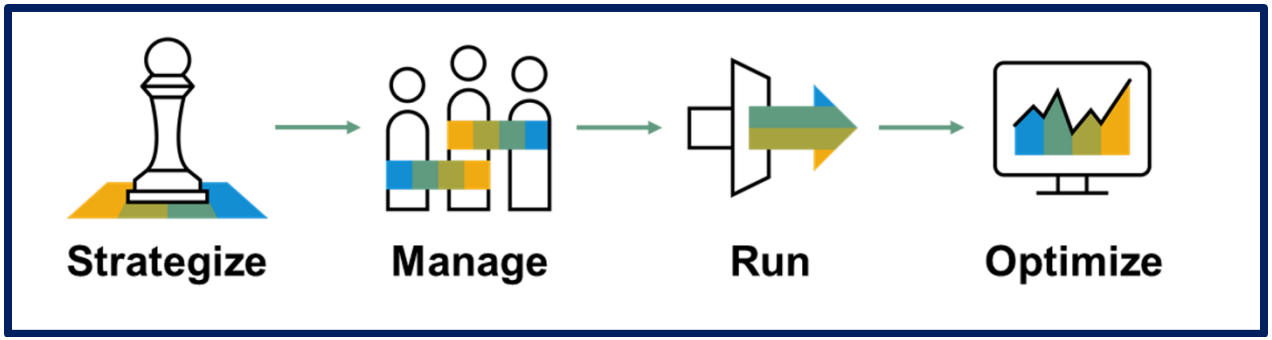
Humen-like capabilities

Robotic Process Automation bots have the same digital skillset as people—and then some think of RPA bots as a Digital Workforce that can interact with any system or application. For example, bots are able to copy-paste, scrape web data, make calculations, open and move files, parse emails, log into programs, connect to APIs, and extract unstructured data. And because bots can adapt to any interface or workflow, there's no need to change business systems, applications, or existing processes in order to automate.

Setting up RPA

It's as intuitive as hitting record, play, and stop buttons and using drag-and-drop to move files around at work. RPA bots can be scheduled, cloned, customized, and shared to execute business processes throughout the organization.

Broadly defined as software scripts that automate other software, RPA "robots" work at the surface and user-interface level, mimicking the keystrokes and mouse clicks made by human workers and completing the task in much the way workers do by logging in to applications, entering data, performing calculations and logging out. Unlike a human worker, however, the bot doesn't need a physical screen to complete the task, instead executing the task's process steps in a virtual environment. Moreover, unlike most software applications, humans can develop these bots without the specialized knowledge of coding, making business units the target customer for RPA.



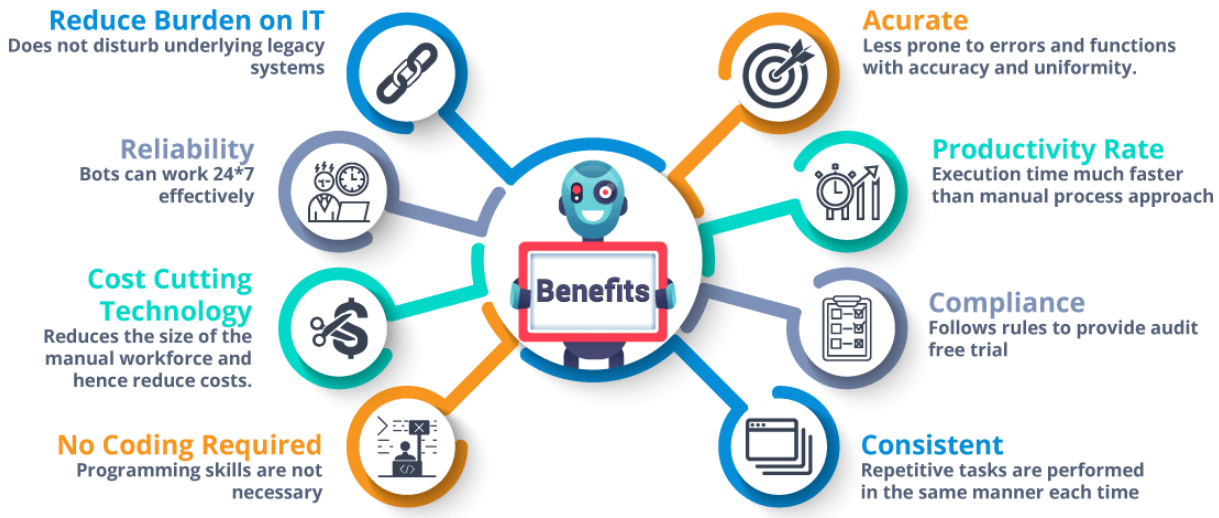
To implement RPA step by step, following things should be followed:

- ✓ Process identification by categorizing processes and sub-processes
- ✓ Determining automation potential
- ✓ Evaluate volumetric data, analyze it manual process cycle and performance analysis
- ✓ Cost analysis, including license costs, facilities, and other costs
- ✓ Design Automation model before starting implementation and refining it
- ✓ Mimicking manual process, through mouse movements, clicks, data scrapping, and performing other RPA implementation tasks
- ✓ Reading and writing to different databases as per the process
- ✓ Organization-wise productivity and performance analysis with RPA execution
- ✓ End to end RPA deployments in production environments
- ✓ RPA lifecycle monitoring

Benefits of RPA

RPA provides a lot of benefits for daily routine tasks. Some of the major ones include:

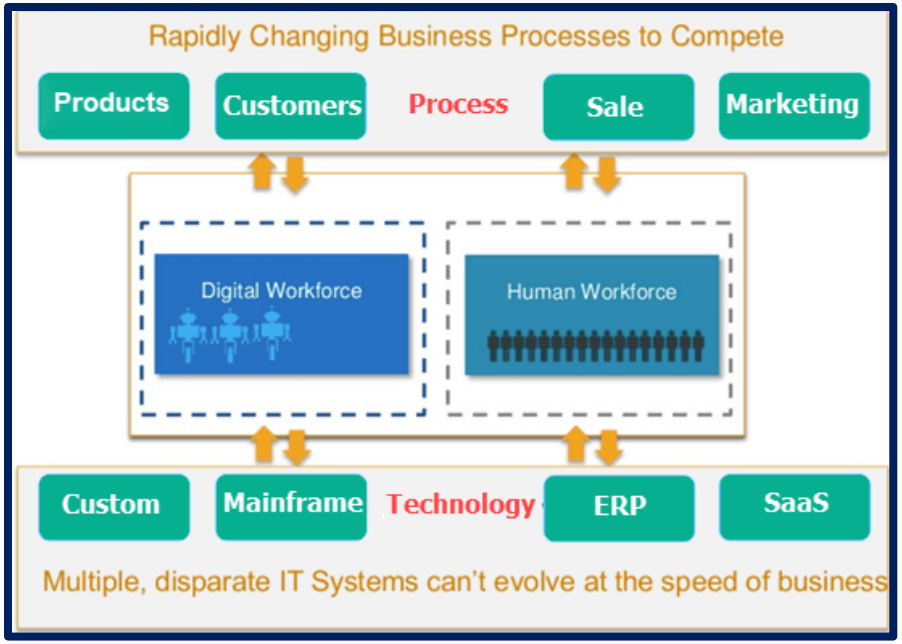
- ✓ RPA improves business outcomes like customer satisfaction and enables competitive advantages by freeing humans to do what they do best.
- ✓ It solves problems, improves processes, conduct analysis and other valuable – added work.
- ✓ It results in higher employee engagement and new revenue opportunities.
- ✓ Greater productivity, greater accuracy.
- ✓ Cost saving and fast ROI
- ✓ Integration across different platforms and applications
- ✓ Harness Artificial intelligence and scalability.



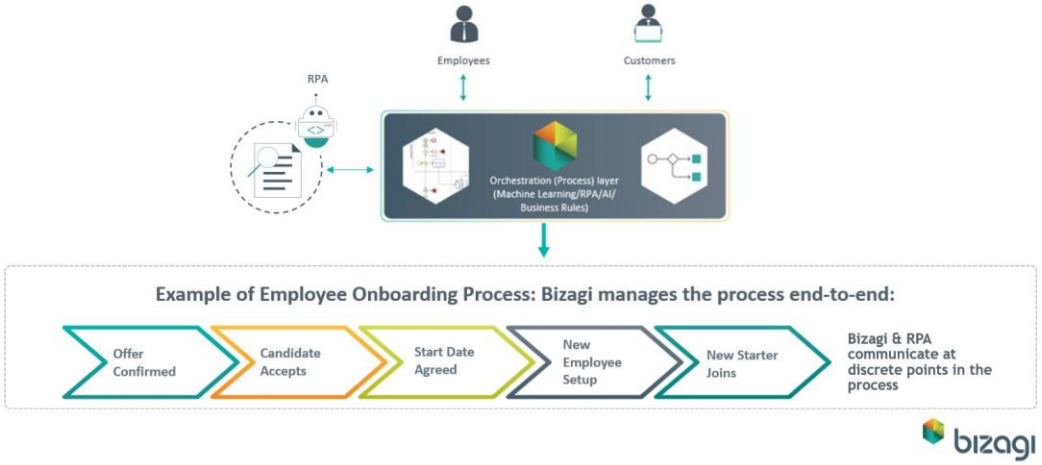
PURPOSE TO USE RPA

RPA software is used by many business units. HR departments, for example, are using RPA to automate aspects of employee onboarding and offboarding. In financial services, RPA bots are configured to handle credit card authorization disputes. IT teams are implementing RPA to automate routine help desk services.

When combined with AI and machine learning, RPA can capture more context from the content it is working with by reading text or handwriting with optical character recognition (OCR), extracting entities like names, invoice terms or addresses using natural language processing (NLP), and capturing more context from images, such as automatically estimating accident damage in an insurance claim picture. RPA's virtual agents are poised to take on higher-level and longer tasks, including whole job roles, becoming what some envision as a 21st century self-improving digital workforce.

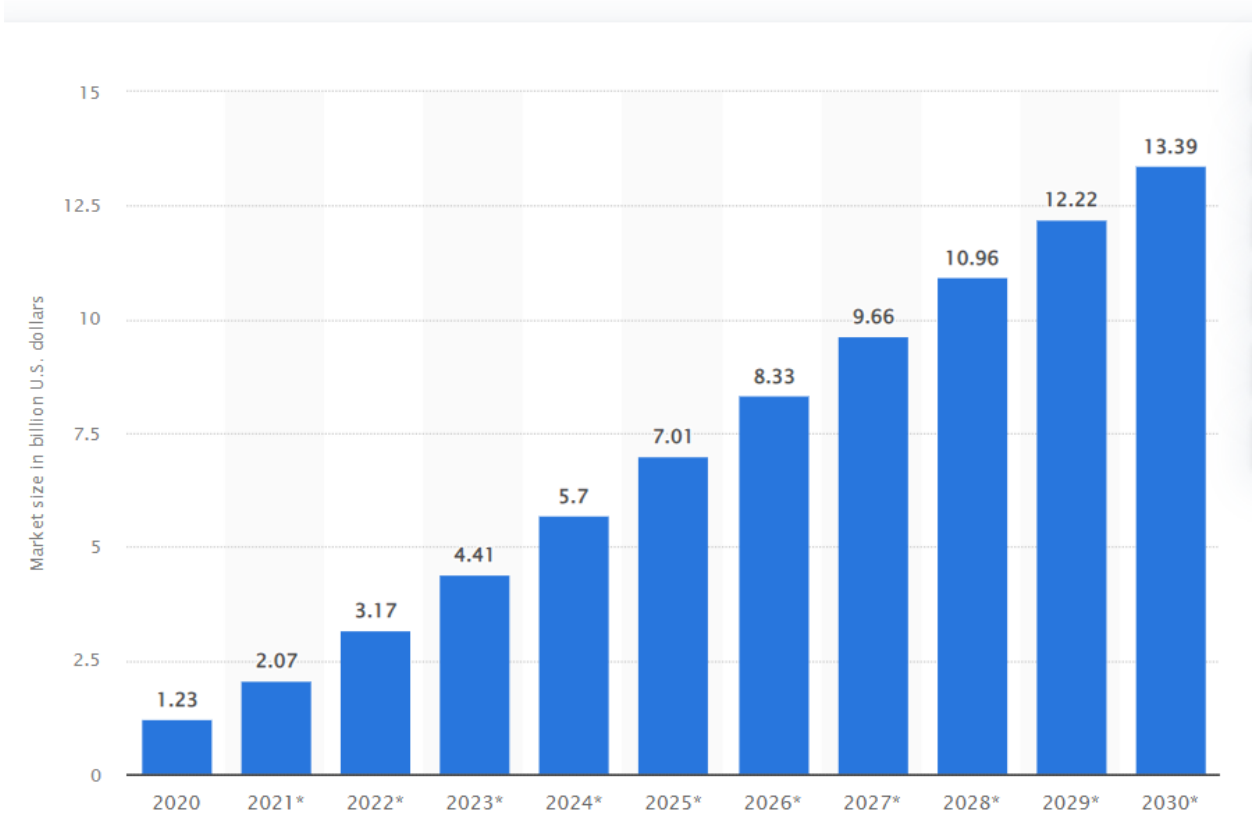


A sample implementation architecture of RPA is shown below:



RPA MARKET POTENTIAL:

Although still a relatively small slice of the enterprise software market, RPA revenue has increased rapidly and shows no sign of slowing down, despite pressures from COVID-19. Gartner projected global revenue from RPA to grow 19.5% in 2021 to nearly $1.9 billion, up from $1.57 billion 2020, and to achieve double-digit growth rates through 2024. Forrester Research said RPA software platform revenue is on track to reach $2.9 billion by 2021, and the market for RPA services (deployment and support) will climb to $12 billion by 2023.



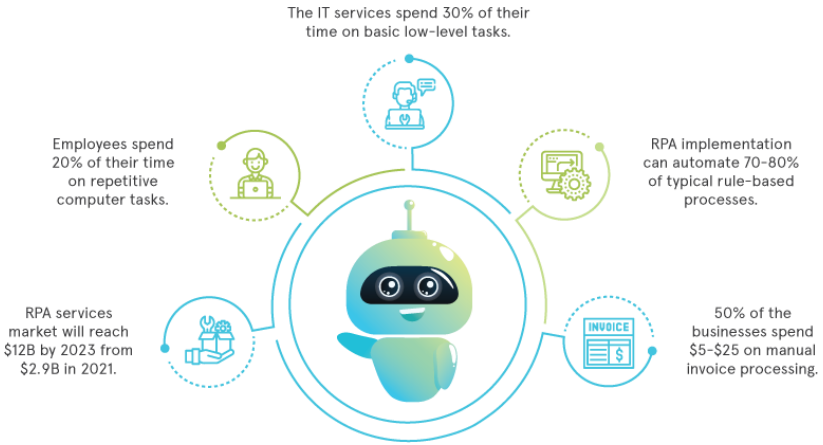
WHAT MAKES RP DIFFERENT FROM OTHER AUTOMATION?

The most important differentiator between RPA and traditional workflow automation tools is the skill set needed to accomplish the automation task. In traditional workflow automation, an experienced software engineer writes code to create a set of actions that automates the task and connects the software to the underlying compute infrastructure by the use of application programming interfaces (APIs) written in Python, Java or other software languages. In contrast, RPA systems typically develop the action list simply by recording the users' actions as they perform a task in an application's graphical user interface (GUI). Once recorded, the system repeats those tasks directly in the GUI without human effort required.

The basic difference between simple Business Process Automation and Robotic Process Automation is explained as:

BPA Business Process Automation	vs.	RPA Robotic Process Automation
An approach to optimizing business processes for maximum efficiency		A software that automates and optimizes a certain business process
Automating processes across an organization		Specific, task-oriented automations
Requires in-depth analysis of business problems		Can operate within existing business processes
Requires building a solution from ground-up		Eliminates tasks, by performing them just as a human would

Workflow Automation automates the flow of tasks, documents, and information across work activities in accordance with defined business rules. For example, once the Financial Analyst analyzes the customer's credit and determines if the credit is "OK" or not, the order is then automatically routed, as appropriate, to the Credit Specialist to contact the customer or to the Order Specialist to enter the order. Clearly, this is a very simplified description of workflow automation, but the key takeaway is that workflow automation automates the flow among work activities across the process.



Focus of RPA is on automating the individual work activities. Work activities that are highly based on rules/procedures are excellent candidates for RPA. However, RPA combined with cognitive technologies (a sophisticated word for AI) is moving more deeply and effectively into work activities that are knowledge and judgment based.

For example, the work activity Account Specialist Creates Customer Account is highly rules/procedural based and an excellent candidate for RPA. Also, the rules-based portion of the activity Analyst Analyzes Customer's Credit is definitely a candidate for RPA. Therefore, only the portion (and perhaps only a small portion) of the work activity requires the actual knowledge and judgment of an experienced financial analyst.

RPA USE CASES IN HEALTH INDUSTRY

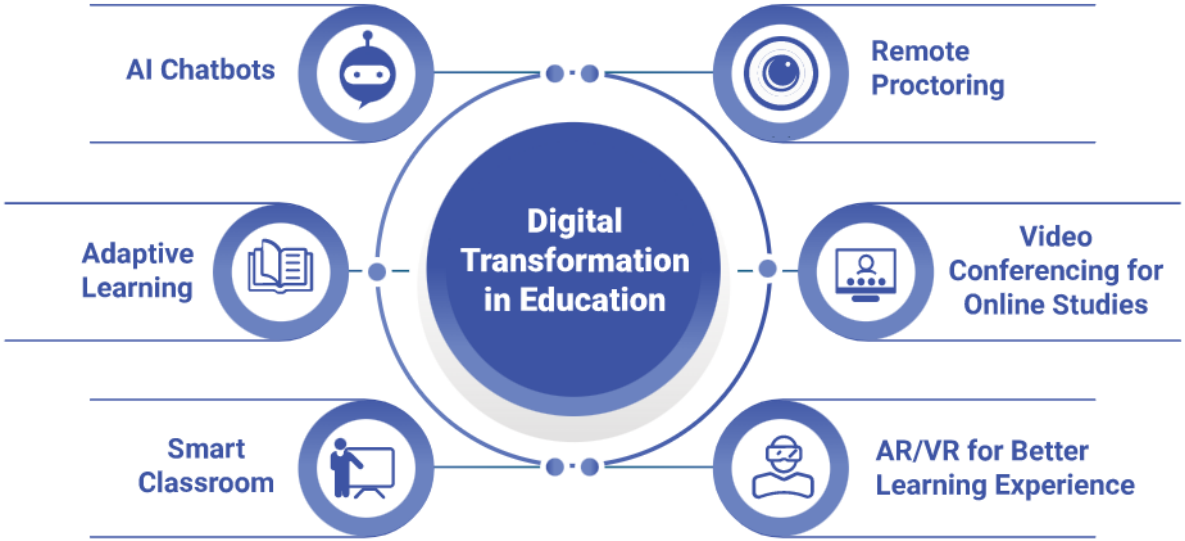
RPA is widely being used in many industries. Some of the use cases in healthcare industry include:

- ✓ Simplifying patient appointments according to diagnosis, location, doctor availability and other criteria.
- ✓ Speeding up account settlements by accurately calculating the bills and doctor fees
- ✓ Streamlining claims management through speeding up processing for insuarance claims and avoid errors
- ✓ Implementing discharge instructions by ensuring the accuracy of discharge guidelines and send reminders to patients about prescriptions, pick-ups, etc.
- ✓ Recording the audit procedures vy recording the data and generating reports during audits
- ✓ Improving healthcare cycles through data recorded by RPA botsand generate analytics that can help deliver accurate diagnosis and tailored treatments
- ✓ Managing population health systems through streamlined workflows and remote monitoring

Using RPA in healthcare industry leads us to a lot of benefits in medical sector. Some of these can be observed below:

RPA USE CASES IN EDUCATION INDUSTRY

Nowadays, digital transformation is important factor that is being considered in education, to bring advancements in learning techniques and tools for students' better understanding and brain development. RPA is playing a vital role in this digital transformation.



Some of the important use-cases where RPA is being used. Or is planned to be used includes:

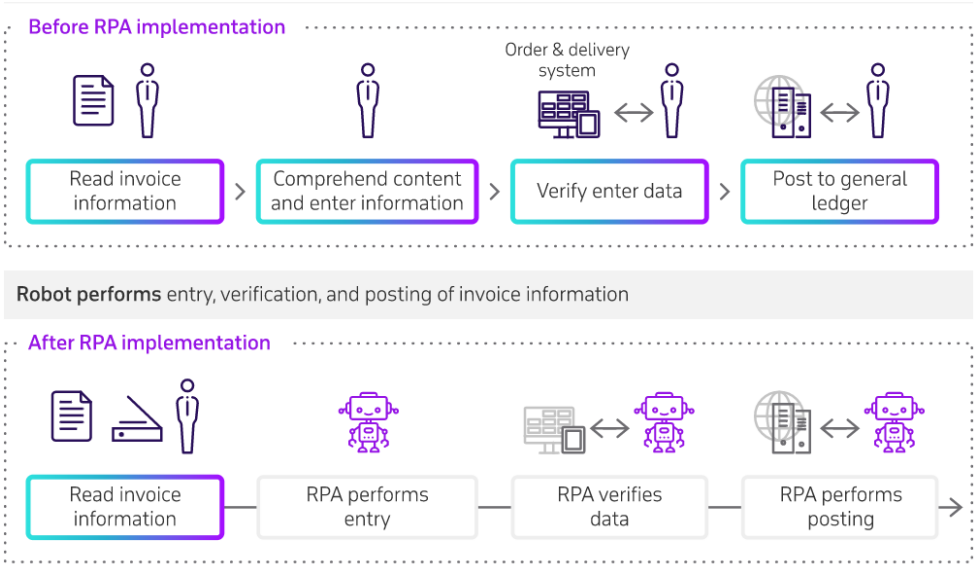
- ✓ Biometric Attendance – RPA helps to record the time of clocking in as well as clocking out. Not only this helps in maintaining a record of all members but also offers reports for overtime benefit calculation and so on.
- ✓ Teacher Substitution – Covering the absence of a teacher as per their availability by mapping class timings, sections and teacher details through RPA bots.
- ✓ Enrolment Process – RPA can easily replace manual hassle process from checking the form at the initial stage to analyzing it, validating the documents, assessing the eligibility criteria and deciding whether a student should be registered or not
- ✓ Creating Fee Structures – With the help of RPA, an institution can create multiple fee groups without any hustle.
- ✓ Hiring of faculty, alerts/notification on new hires/exits, monitoring student/teacher performances, on-boarding process of students, cross-checking papers, inquiry etc.
- ✓ Co-Curricular Activities – RPA has the capacity and intelligence to analyze matches and help in team/player selection for the institution.
- ✓ Achievement Monitoring – Using bot for the tedious task of determining potential student captains, etc.)

RPA USE CASES IN AUTOMOTIVE INDUSTRY

In automotive industry, RPA is playing a key role and many companies are planning to use Robotic Process Automation for automating mundane manual tasks.

Some of the use cases include:

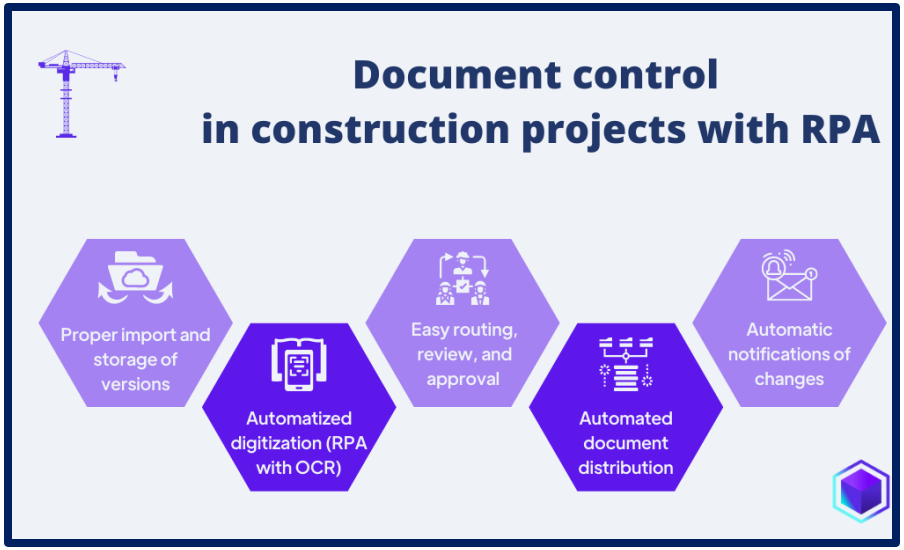
- ✓ Inventory management – Streamlined inventory through Robotic Process Automation, providing efficient supply chain management.
- ✓ Auto Insurance – Reformatting and transferring data that requires repetitive actions, performed by RPA. It also speeds up underwriting
- ✓ Vehicle financing – Automatically consolidate information stored in disparate systems into one interface, data verification and validation, loan and default servicing and financial analysis
- ✓ Supplier onboarding – Streamline digital collaboration with its customers and suppliers
- ✓ Freight management – Deal with demand spikes and facilitate the highly complex and cumbersome process of preparing Shipper's Letter of Instruction (SLI) for overseas shipments.
- ✓ Regulatory compliance – Automating highly laborious, error-prone, tedious, time-consuming, and high-volume processes
- ✓ Real-Time Process monitoring and analysis – Establish a fair relationship between demands and supply through customer behavior and historic patterns



RPA USE CASES IN CONSTRUCTION INDUSTRY

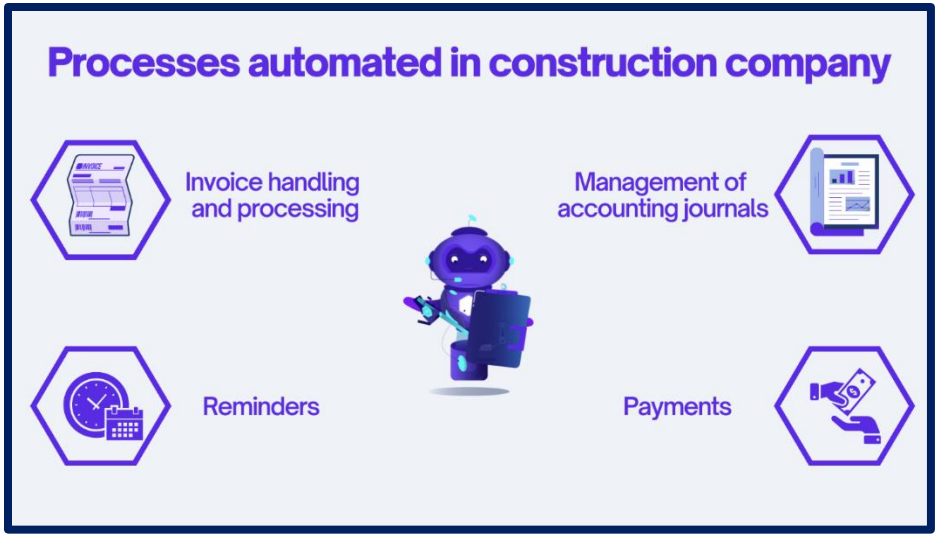
Robotic Process Automation is growing wide to even automate heavy tasks related to construction and improve the efficiency.

RPA supports documentation management of Construction tasks, including providing support for multiple file types, supporting indexing and Searching, Easy sharing in each location and much more.



Some of the important use-cases include:

- ✓ Updating databases – Bots can update client, vendor, supplier or subcontractor information easily.
- ✓ Invoice creation – Automation on structured data to generate invoices to be sent to customers which leads to earlier payments and improved cash flow.
- ✓ Document management – Screen scrapping, OCR, basic pattern recognition, enabling data extraction from any format.
- ✓ Billing – Extracting data from different portals, including ERP, legacy platforms, labor management, etc. to effectively free up multiple FTE hours.
- ✓ Site-Cost monitoring – Produce cost-to-estimate reports, pulling in data from contractors and suppliers, importing it into the project budget and generating real-time analytics into regular weekly, daily or on-demand reports.
- ✓ RFP response process – Creating an automated estimate, gathering the required documentation



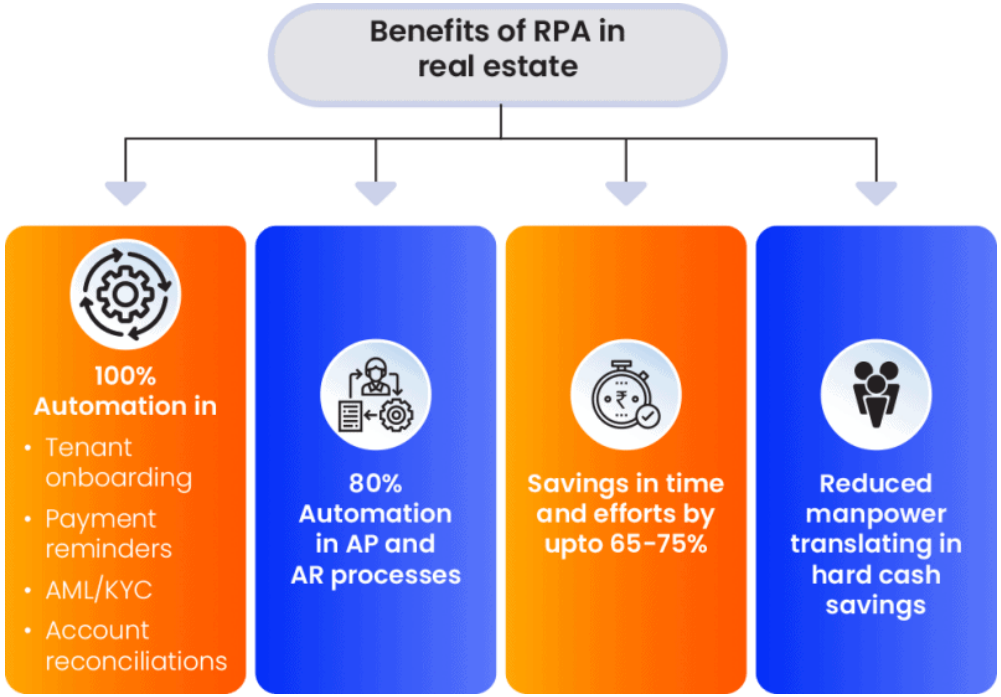
RPA USE CASES IN REAL ESTATE INDUSTRY

Robotic Process Automation is providing ease and efficiency in real-estate tasks also. It provides 100% Automation in Tenant onboarding, Payment reminders and Account reconciliations, saving time and effort by 65-75%. It results in reduced manpower translating in hard cash savings.

The major use-cases in real-estate industry include:

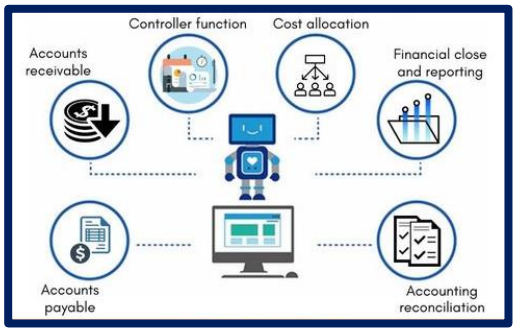
- ✓ Creating a new tenant application
- ✓ Criminal background checks
- ✓ Verifications of income, employment, and references
- ✓ Approval or disapproval of the applicant
- ✓ Service request processing
- ✓ Information transfer between different shareholders' systems

- ✓ Transferring maintenance requests to maintenance company
- ✓ Reporting of empty housing
- ✓ Automation of consumption-based invoicing
- ✓ Provisioning, monitoring and deactivating usernames
- ✓ Contract status management
- ✓ Informing about apartments' availability and application



RPA USE CASES IN FINANCE INDUSTRY

In finance industry, Robotic Process Automation is growing rapidly due to its increased efficiency and Return on Investment (ROI). RPA bots are available 24/7 without absenteeism. Typically, the costs spent on bots are much lower than the average costs of human workforce, hence helping world financially.

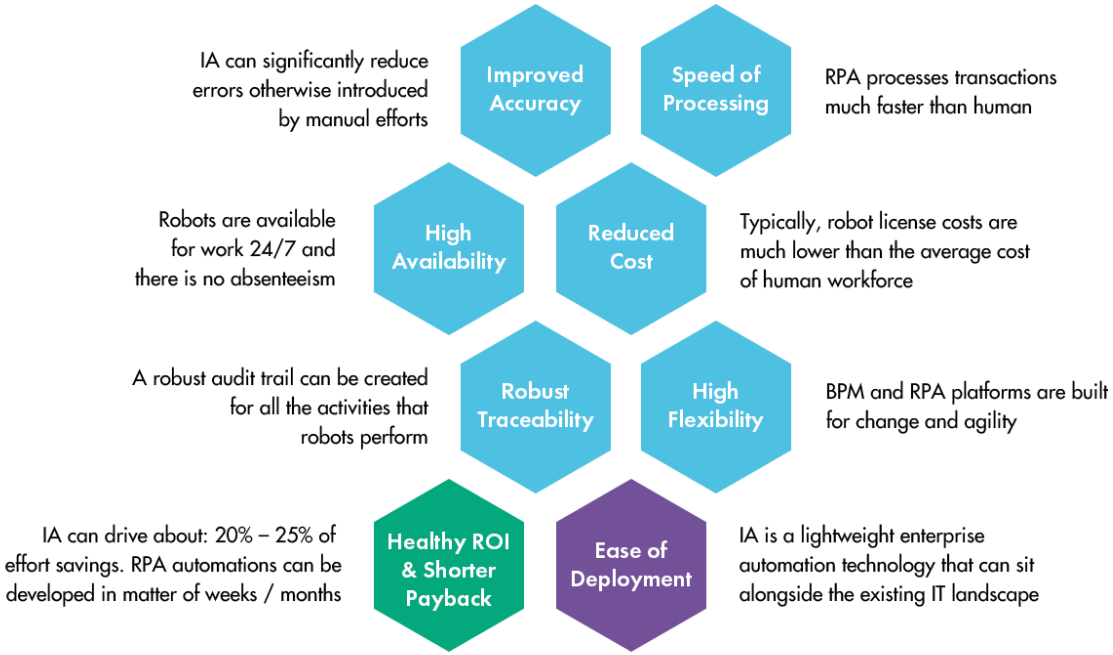


The implementation of RPA in Finance industry can be seen in the illustration below:

The important use-cases of RPA in finance industry includes:

- ✓ Automating governance – Enabling finance departments to easily create new bots while also providing guardrails.
- ✓ Processing invoices – Post the extracted data for procurement management
- ✓ Reconciling accounts - Improve journal entry and subsequent financial account reconciliations

- ✓ Processing cash data – Automate the process of reading the bank statements and copying data to the appropriate fields in the accounts receivable application.
- ✓ Remediating discrepancies – Programmatically correct the data issue across all impacted systems, through bot
- ✓ Ensuring vendor contract compliance – Automate many processes involved in ensuring adherence to vendor contracts.
- ✓ Purchase Orders processing – Automate and speed the process up, as well as reduce human errors.
- ✓ Managing data across multiple systems – Improve data management across these systems, while enforcing business rules associated with the movement of this data.
- ✓ Reporting Profit and loss - automate P&L reporting, particularly in companies that need to provide daily reports to management



ROBOTIC PROCESS AUTOMATION TOOLS

There are many RPA tools used in the industry, as the technology is growing faster. The top 5 tools used in the industry include

- ✓ UiPath
- ✓ Blue Prism
- ✓ Automation Anywhere
- ✓ Work Fusion
- ✓ Power Automate Desktop

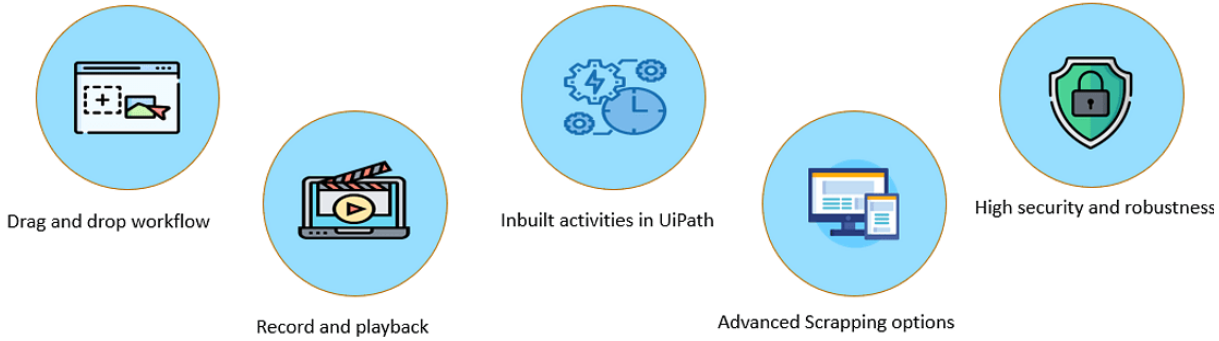
A brief comparison of these is given below:

Tools	**UI Path**	**Blue Prism**	**Automation Anywhere**	**Work Fusion**	**Power Automate RPA**
Availability	Enterprise and communication edition with 60-day free trial	Enterprise – 30-day free trial	Enterprise edition with 30-day free trial	RPA Express (Free) SPA(Enterprise)	PAD (Free) User plans for attended and unattended
Learning (Difficulty)	Hard (Community)	Medium (Enterprise)	Easy	Medium (RPA Express)	Easy
Setting up (Difficulty)	Medium	Difficult	Medium	Medium	Easy
Programming Language	Visual Basic, C++	Visual, C#, J#	VBScript, JavaScript, Python	Groovy	No programming language – just logic building
Architecture	Web-based	Client server	Client server	Web based	Web-based
Cognitive capability and Reusability	Low	Low	Medium	Low	Medium
Productivity	Desktop automation only. Reduced client productivity	Very fast. Object oriented	Script oriented, desktop automation only. Reduced client productivity	Poor automation processes. Reduced client productivity	Desktop automation as well as cloud automation by connecting desktop to cloud. Enhanced productivity

Features	UI Path	Blue Prism	Automation Anywhere	Work Fusion	Power Automate RPA
Analytics	✓	✓	✓	✓	✓
Attended Automation	✓	✓	✓	✓	✓
Code Free Development	✓	✓	⊖	⊖	✓
Image Recognition	✓	✓	✓	⊖	⊖
Optical Character Recognition (OCR)	✓	✓	✓	✓	✓
Process Builder	✓	✓	✓	⊖	✓
Unattended Automation	✓	✓	✓	✓	✓
Highly detailed immutable execution and change logs	⊖	✓	⊖	⊖	⊖
Single SKU (one product to purchase)	⊖	✓	✓	⊖	⊖
Free comprehensive on-line training	⊖	✓	✓	⊖	✓

RPA WITH UIPATH

UiPath is a robotic process automation tool for large-scale end-to-end automation. For an accelerated business change, it provides solutions for businesses to automate routine office activities. It uses a variety of methods to transform tedious tasks into automated processes.



Drag and Drop Workflow

The UiPath can develop visual process steps by dragging and dropping related tasks onto the graphical workspace. With the user interface properties, it can transform those process steps into a visual workflow. Users may also use the recorder wizard in the UiPath tool to build web-based or application workflows.

Record and Playback

This function can be used to record actions and transform them into an automated process series. UiPath has the following types of recording options:

Basic recording- It focuses on automating single tasks and is commonly used to develop each activity's complete selector.

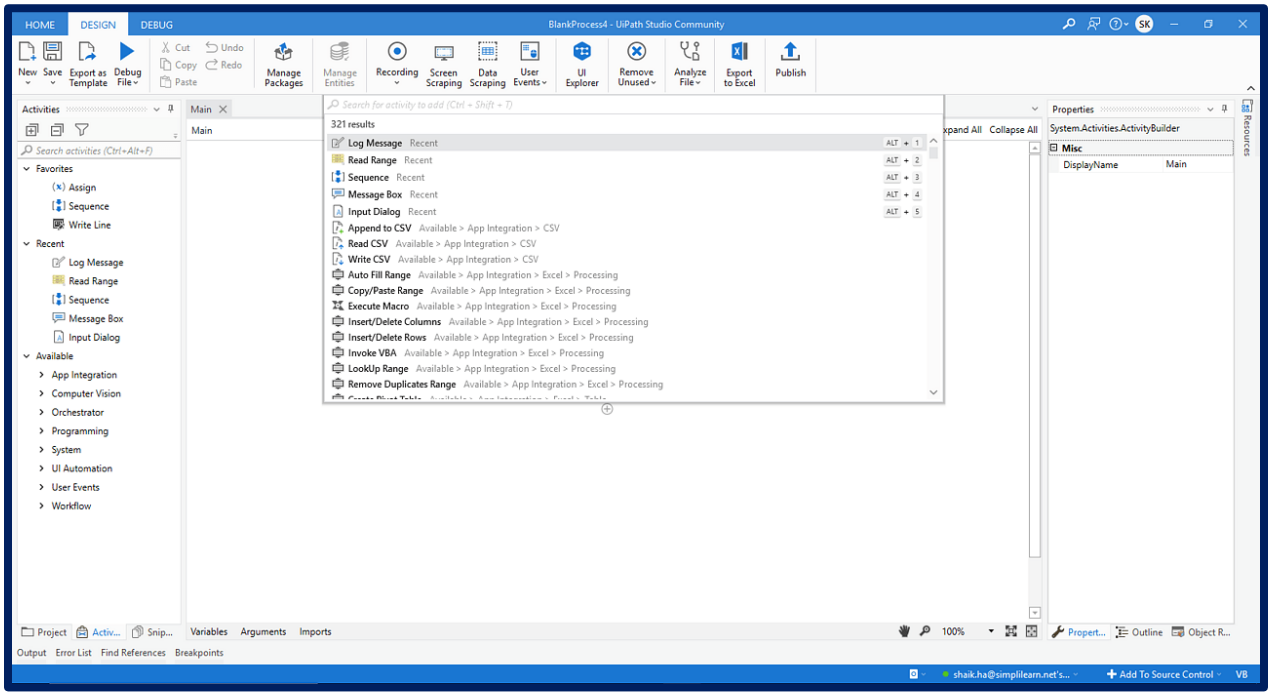
Desktop recording- It can be used for a variety of actions as well as application development.

Web recording- Web recording is a common tool for viewing and recording web page activities.

Citrix recording- It is very widely used for recording stuff like pictures and virtualized environment automation.

Inbuilt activities in UiPath

UiPath comes with over 300 built-in activities covering a wide range of process automation and application integration design tasks. You can find these activities in the Activities pane, which covers most design tasks such as data extraction, data entry, and automation.



Advanced Scraping Options

Scraping data from web pages and applications is easier with UiPath Screen Scraping. Furthermore, the data scraping wizard helps in the scraping of data with a repetitive structure. Scraping solution works flawlessly with any program, including .Net, Java, Flash, PDF, Legacy, and SAP.

High Security and Robustness

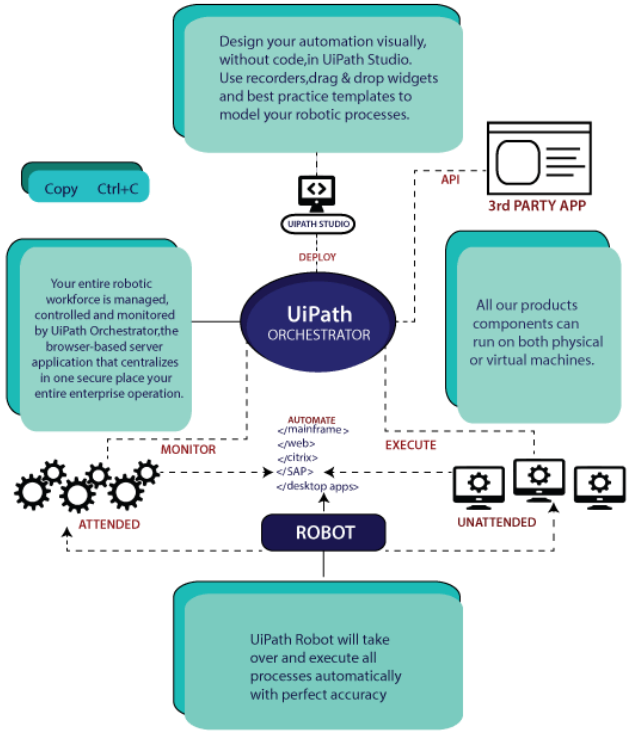
You can create super-smart, durable robots with UiPath. With a simple visual canvas, everyone in the company can use these bots. UiPath offers high-security auto-login functionality to run the bots and operates with a locked screen, allowing automated processes to run in complete privacy.

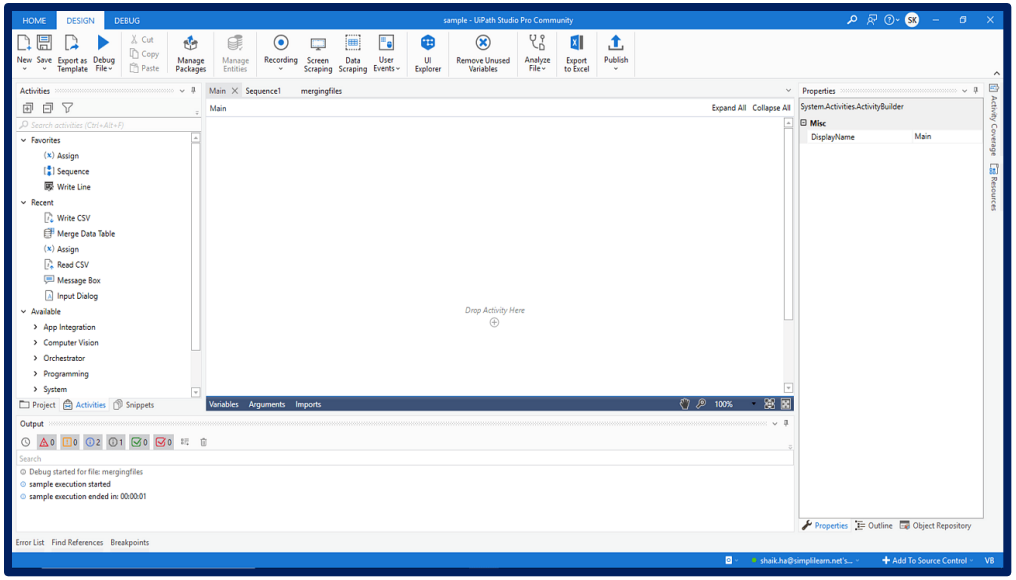
UiPath Components

UiPath studio - UiPath studio is a user-friendly interface that allows users to visually plan and design various automation processes through diagrams, using the drag-and-drop functionality. These diagrams are merely a structural reflection of specific tasks that must be completed.

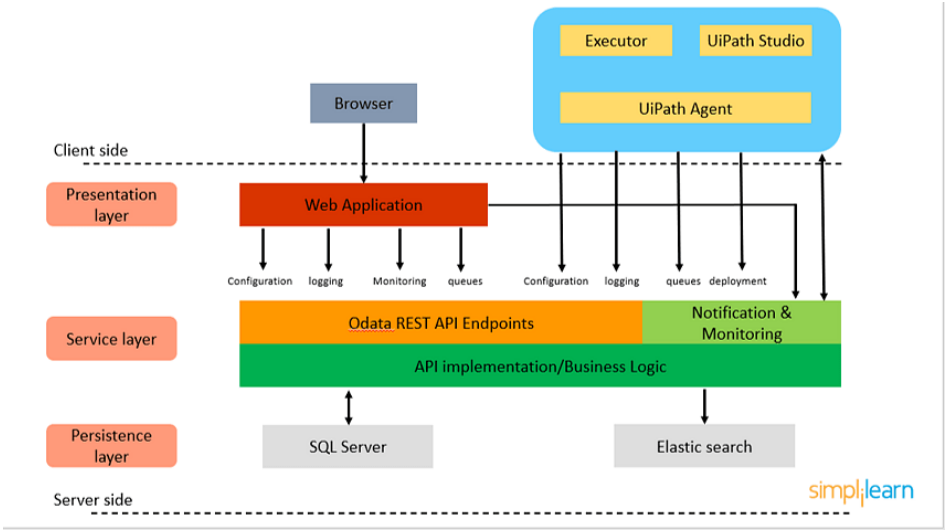
UiPath robot - After building the process, the next move is to put it into action in the UiPath studio. UiPath Robots are used to translate the strategies into tasks, which are then executed. These robots are used to assign various tasks and carry them out in the same manner as humans but without human interference. When a given operation occurs on the computer, they program UiPath robots to begin executing tasks automatically.

UiPath Orchestrator -The Orchestrator is a web-based application in UiPath. It has features for deploying, monitoring, scheduling, and controlling automated bots and processes. It's a centralized forum for managing and maintaining all software bots.





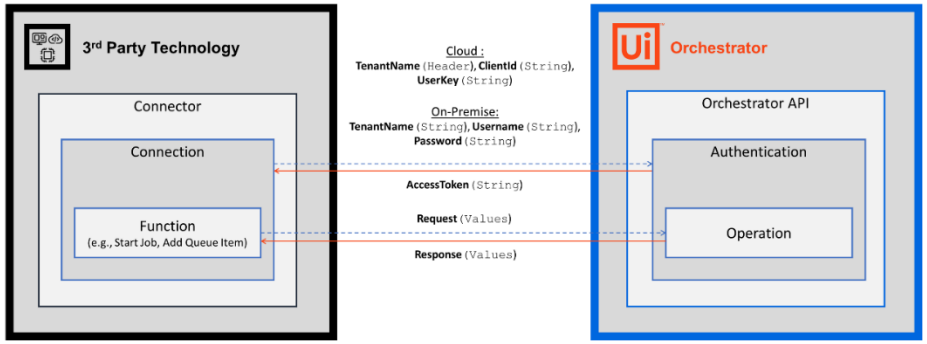
UiPath Architecture



UiPath Integrations with 3rd party solutions

Ui path provides integration with different solutions. UiPath Test Suite components have native integrations with several testing tools and business software, to help you manage multiple testing projects.
The integrations are easily done through Test Manager Hub connectors. Some of the major 3rd party integrations possible are listed below.

- ✓ Abby
- ✓ SharePoint online
- ✓ Salesforce
- ✓ ServiceNow
- ✓ Jira
- ✓ SAP solution manager
- ✓ Jenkins
- ✓ Azure DevOps



RPA WITH BLUE PRISM

Blue Prism is a global pioneer in intelligent enterprise automation, improving how employees work. The Blue Prism helps organizations enhance operational efficiency and agility by making it simple for individuals to automate tasks. Blue Prism created the Virtual Workforce Platform concept and is working on a robust, highly scalable, secure, and dependable enterprise Robotic Process Automation platform.

blueprism

Provides Intelligent Execution Technology

Organizations can teach the autonomous engine to run on process priorities, feed it with work, and then leave it to run autonomously, responding to systems, business scenarios, and preferences changes. Robots, like humans, can perform jobs based on SLA, volume, and priority and dynamically alter and change robot allocation without human intervention.

Compatible With a Variety of Platforms

Blue Prism is built on the Microsoft.NET Framework. It is technologically adaptable, functioning across several platforms and technologies, such as the mainframe, windows app, WPF app, Java, SAP, Exchange, custom apps, Citrix, thick client, thin client, web services, and so on.

High Security

A software robot securely connects to an application and manipulates the presentation layer in the same way that a human would, but in a controlled, non-invasive environment, assuring that it never damages the program's integrity.

On-Premises or Cloud-Based

On-premises or hybrid enterprise deployment, with public or private cloud provisioning.

The robots are operational, and they can perform any operation defined in Blue Prism on any number of robots in the Virtual Workforce.

Scalability

Blue Prism is object-oriented, which allows for rapid scalability through the use of reusable components and libraries.

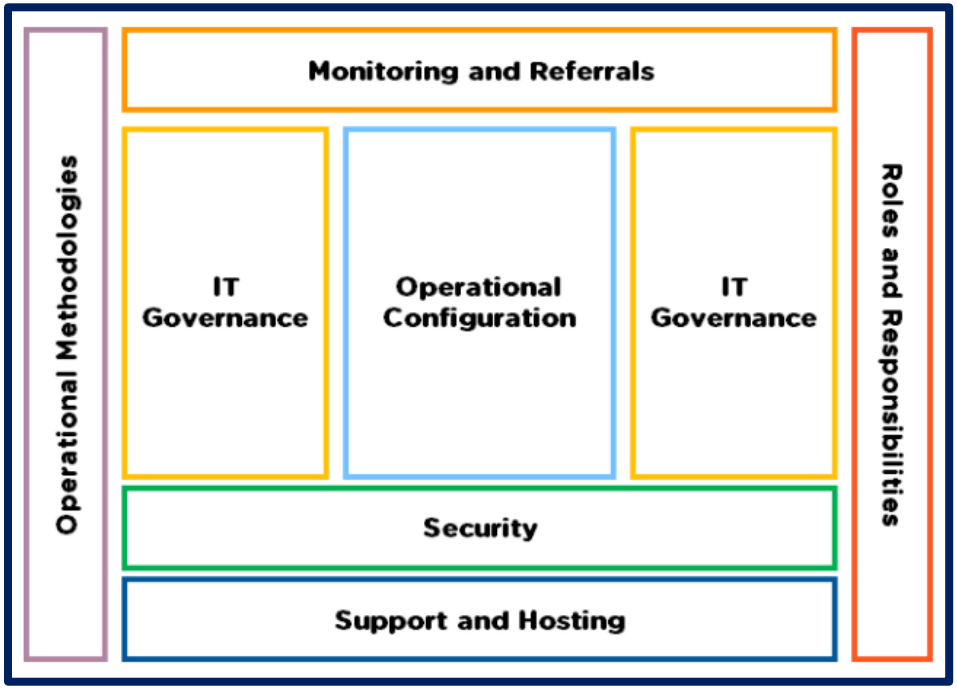
Reporting and Analytics

By capturing each step, it is possible to generate high-quality data that can be utilized to provide relevant BI and MI reporting and inline process statistics, and real-time operational insights.

Work Queues

Work Queues is a queue-centric approach for dynamically controlling the number of resources, or robots, operating against a given queue at any given time, allowing for maximum flexibility in adjusting the number of resources assigned to collaboratively work items in the queue based on business demands.

The Architecture of Blue Prism



RPA WITH AUTOMATION ANYWHERE

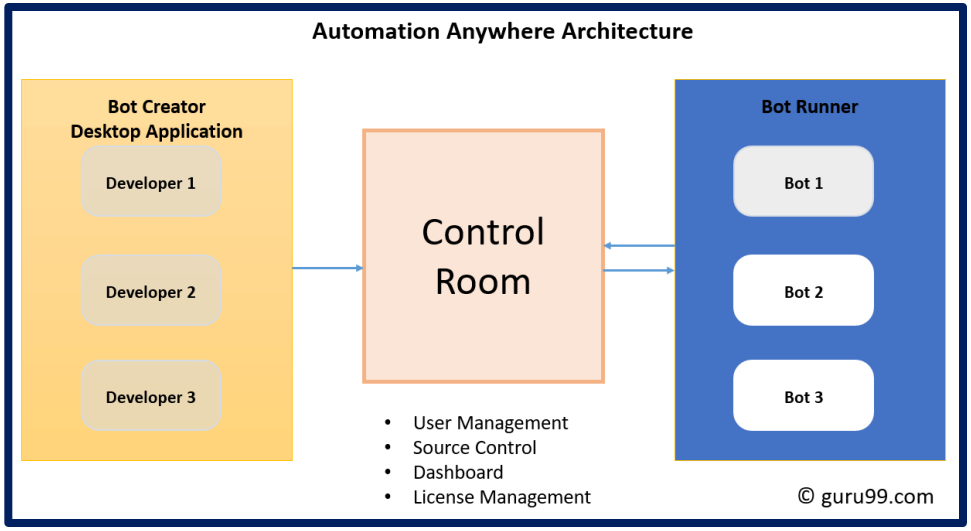
Automation Anywhere is one of the popular RPA vendors offering powerful & user-friendly RPA capabilities to automate any complex tasks. It is one of the “Revolutionary Technology” that changes the way the enterprise operates.

AUTOMATION ANYWHERE

Automation Anywhere Architecture

Automation Anywhere Architecture has 3 primary components

- ✓ Control Room
- ✓ Bot Creator
- ✓ Bot Runner

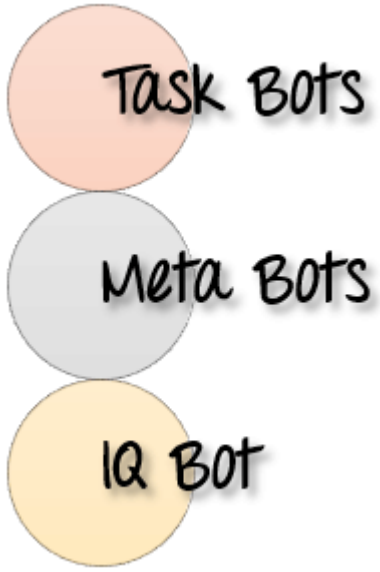


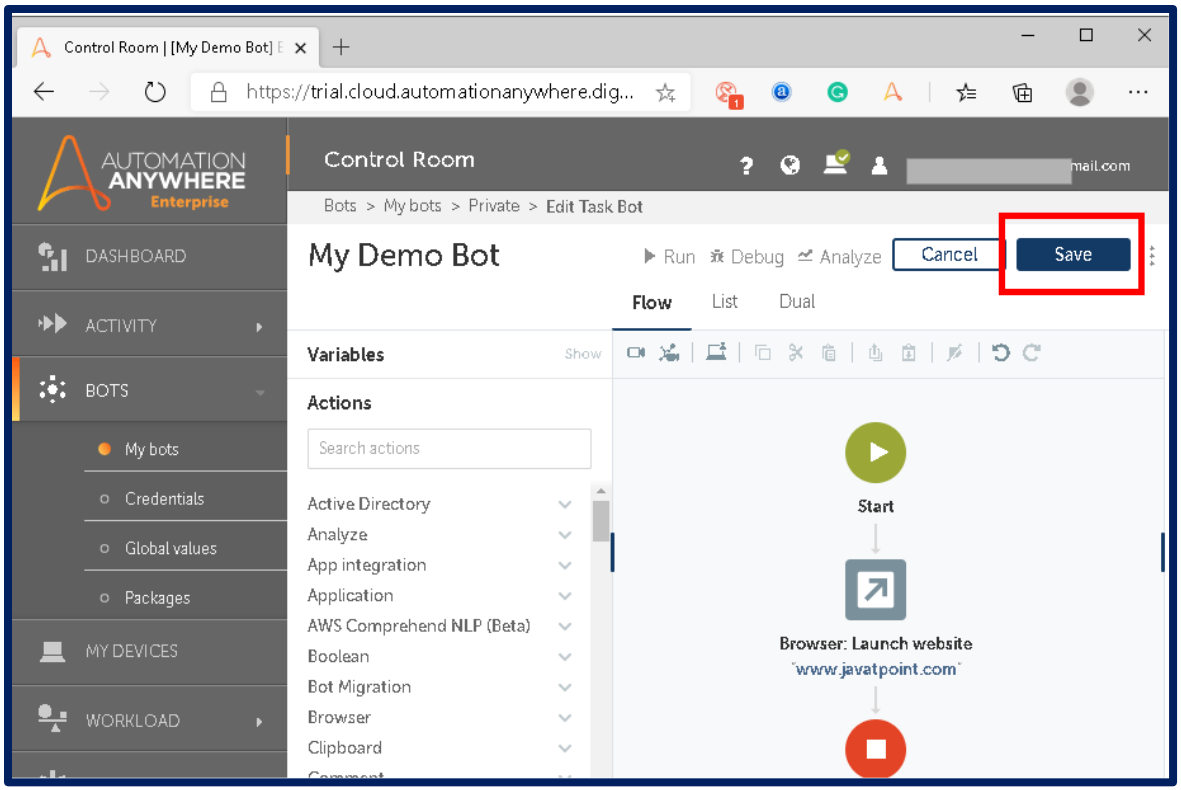
Types of Automation Anywhere Bots

Task Bots - Task bots are bots which automate rule-based, repetitive task, in areas like document administration, HR, claims management, IT services and more. This leads to immediate improvement in productivity, error reduction, and cost saving.

Meta Bots - Meta bots are the automation building blocks. It is designed in such a way that with application updates or changes you need to make minimal edits to the bot. Changes automatically apply to any process utilizing that bot.

IQ BOT - It is an advanced tool. It can learn on its own and perform a task according to it. IQ Bot offers automation using the highly advanced cognitive technology. It works on the concept to organize an unstructured data while improving its skills and performance.





Task Editor

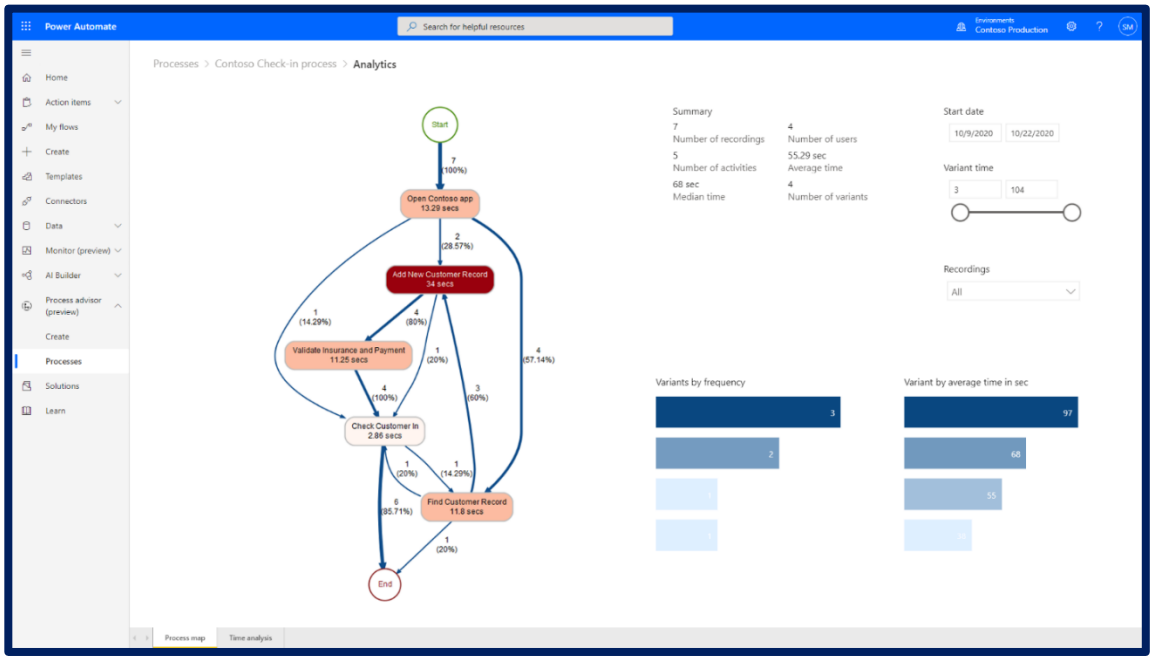
In the automation anywhere, it is possible to generate tasks by dragging and dropping the items from the toolbox. With the help of the task editor, the user can alter, break down and even improve the recorded tasks. The task editor includes 380 plus actions including:

- ✓ Keyboard & Mouse actions
- ✓ Windows actions
- ✓ Database actions
- ✓ Conditional Actions
- ✓ Files/Folder Actions

- ✓ Loop actions
- ✓ Internet actions
- ✓ Clipboard actions

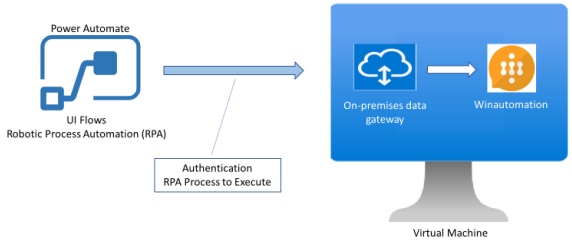
RPA WITH POWER AUTOMATE DESKTOP

Power Automate RPA helps the organizations to automate their legacy apps and manual processes through UI-based automation. By recording and playing back the human-driven interaction with software systems that do not support API automation, the RPA function transforms manual tasks into automated workflows. Since Microsoft Power Automate has pre-constructed connectors for over 275 applications and services that support API automation, Microsoft argues that it now has an end-to-end automation platform "capable of reinventing business processes for a wide range of workloads across industries."

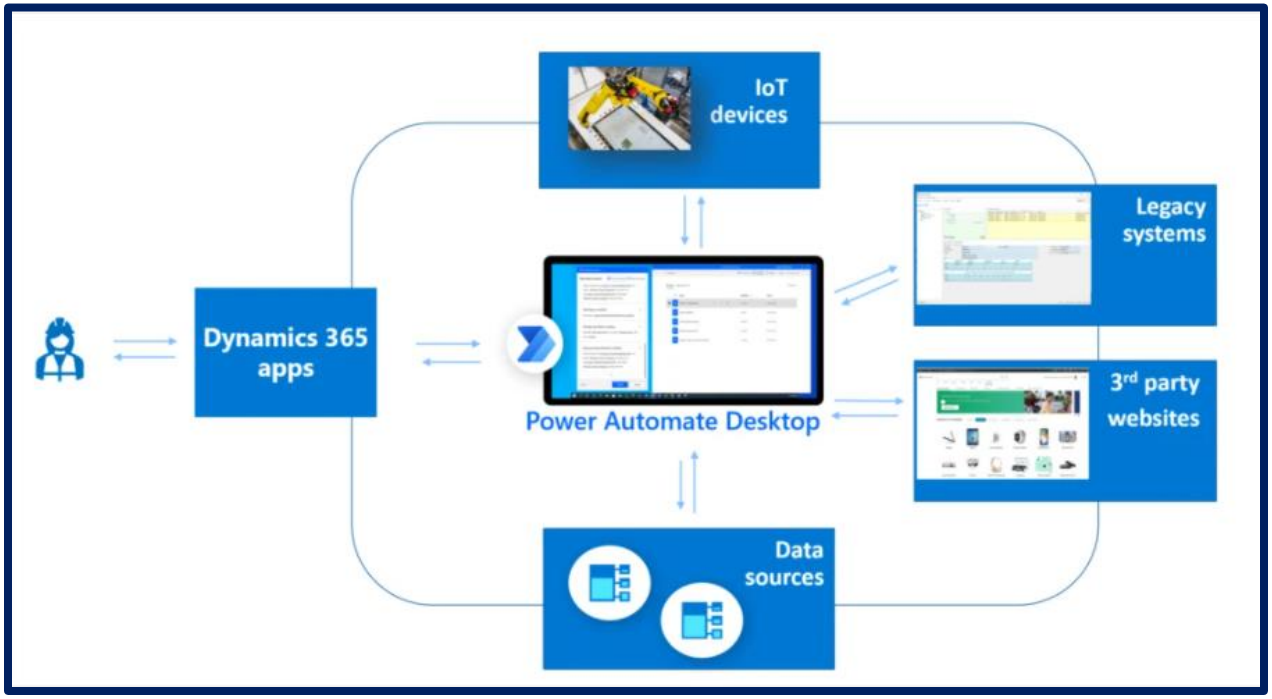


Power Automate RPA provides the following functionalities

- ✓ Automates cloud applications and databases with built-in connectors
- ✓ Automate repetitive tasks across legacy and modern applications
- ✓ Structured and unstructured data from paper-based invoices to images can be easily understood and integrated with other critical business applications.
- ✓ Native connectivity to common apps or a company's APIs with over 300 connectors out-of-the-box and a no-code way to connect to any internal services.
- ✓ Running VBScripts, JavaScript, Power shell and others for automation purposes
- ✓ Send automated emails on Extracted data
- ✓ Record mouse and keyboard movements and extract useful information
- ✓ Get the copied text from clipboard and perform actions on it
- ✓ Perform different text operations
- ✓ Cryptography of files, encryption and decryption for security purposes
- ✓ Perform downloading from different http requests
- ✓ UI Automation for extraction of data from different windows
- ✓ Browser Automation for web data extraction
- ✓ Record sequence of actions, launch new browser, go to different web pages
- ✓ Invoke different web services and store the response text
- ✓ Run JavaScript function on a web page and get the returned result
- ✓ Perform excel related functions, save Excel, get Active sheet on excel, Add new worksheet, etc.
- ✓ Save the extracted data automatically in an excel workbook
- ✓ Connect with SQL database and execute functions
- ✓ Perform date-time conversions and actions
- ✓ Extract images from a PDF file, Merge PDF files, Extract text from PDF files
- ✓ Open and close terminals and run commands
- ✓ Extract text from a given source using the specified OCR engine
- ✓ Wait for windows services, start a service, stop, pause and resume services
- ✓ Read the contents of XML file into a variable
- ✓ Set and remove values from an XML file, perform different actions on XML
- ✓ Open an FTP connection, download files from an FTP server, Delete FTP files and many more actions related to FTP
- ✓ Collaborate with AWS and Azure



- ✓ Perform Natural Language processing actions by analyzing the entities
- ✓ Lavel detection, Text detection, Landmark detection, Logo detection and much more, using Cognitive services of vision
- ✓ Perform different document conversions
- ✓ Translate languages and identify languages
- ✓ Classify images



RPA USE CASE WITH POWER AUTOMATE DESKTOP

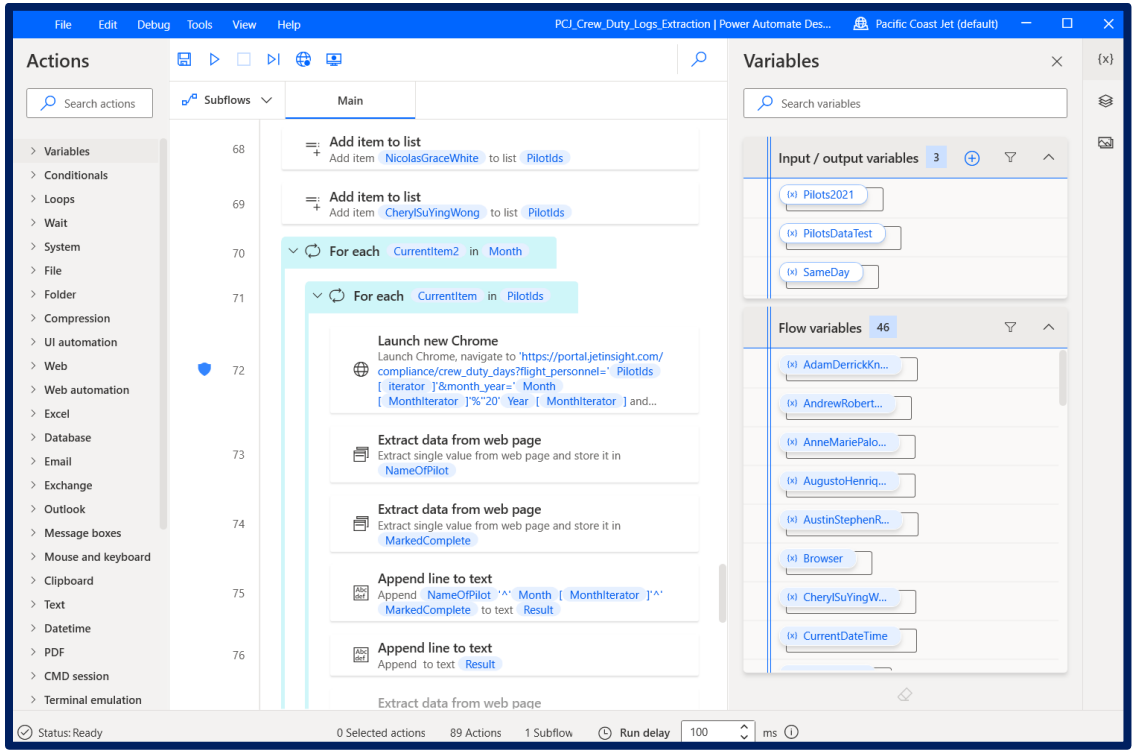
Power Automate desktop flow is used for extracting Web page data, using the scrapper technology and extracting data column by column, or row by row, or any provided pattern. This use case aims to extract the data of **Aviation industry**, for **Pacific Coast Jet**

The data is extracted from Jet Insight portal, a portal used by private jet industries. For pilots, the pay procedure is a complex process, as everything is dependent on their duty hours, either away from home-base or working for training. Every jet industry has their own set of rules, for Rest period, Duty types, total flight hours, flight segments and LEG counts.

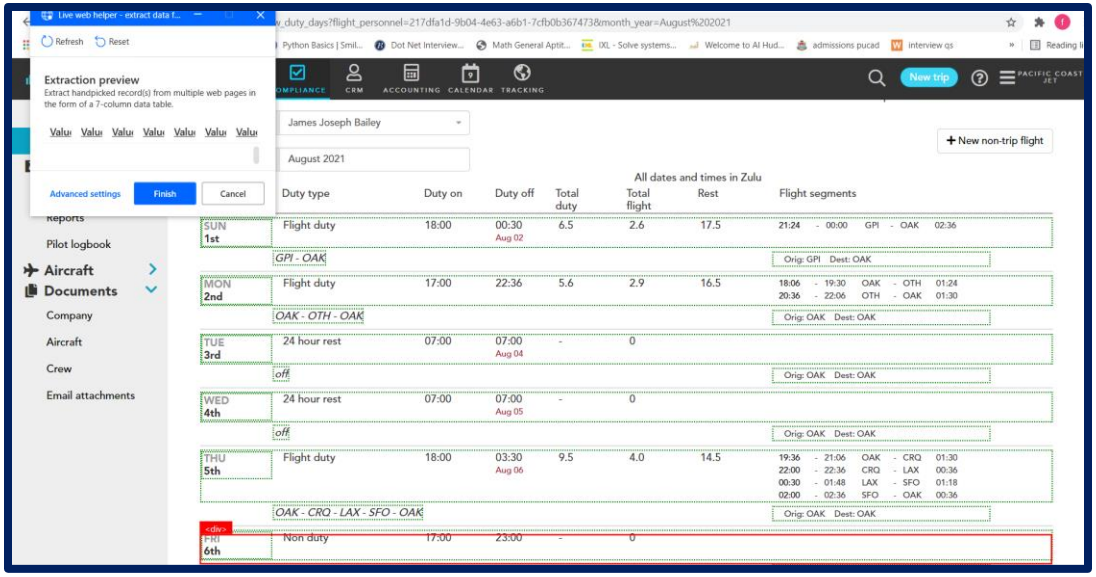
Based on the rules of a specific Jet industry, the data is being extracted using Power Automate Desktop and is run in unattended mode so that no human interaction is required.

Later on, the data is collected in SharePoint list after enormous string manipulations and rules, and a Power App is built, which does all the calculations for payroll and returns the pay slips.

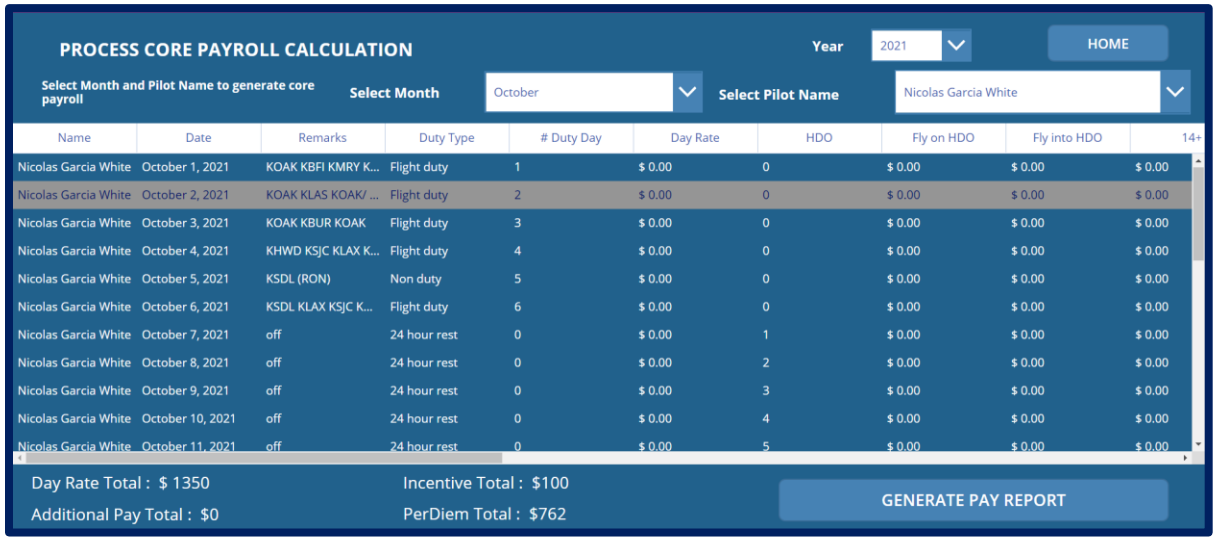
Glimpse of Power Automate desktop flow

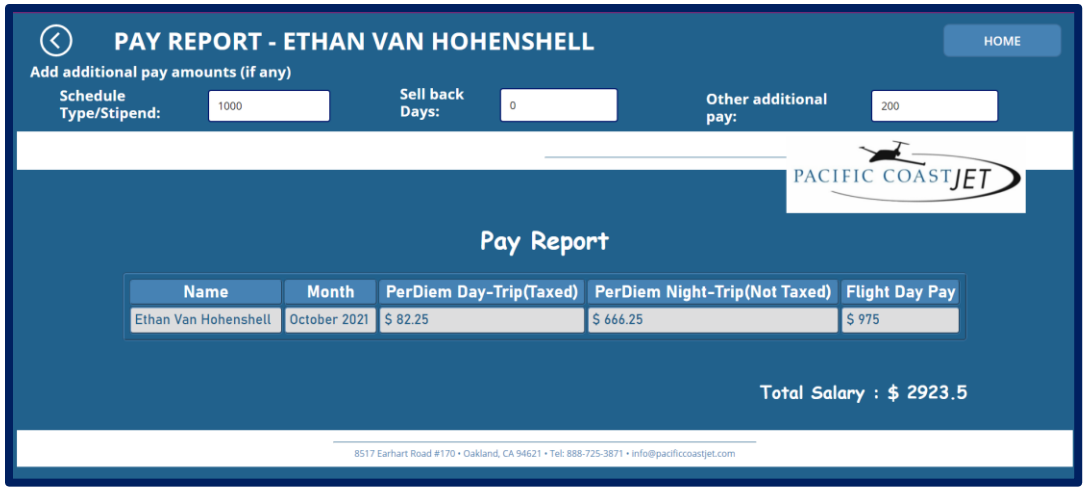


The live web helper helps to extract the data in the required pattern from Jet Insight portal

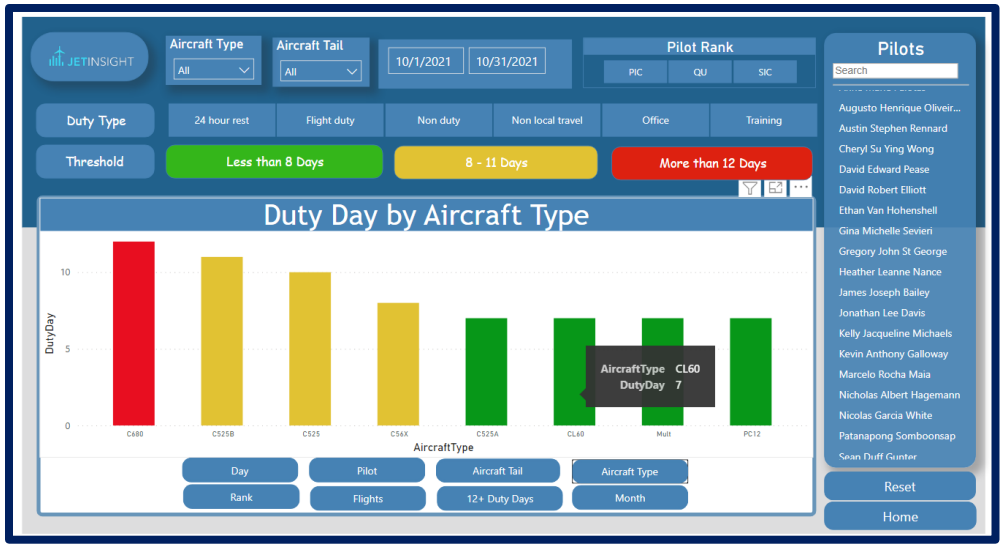


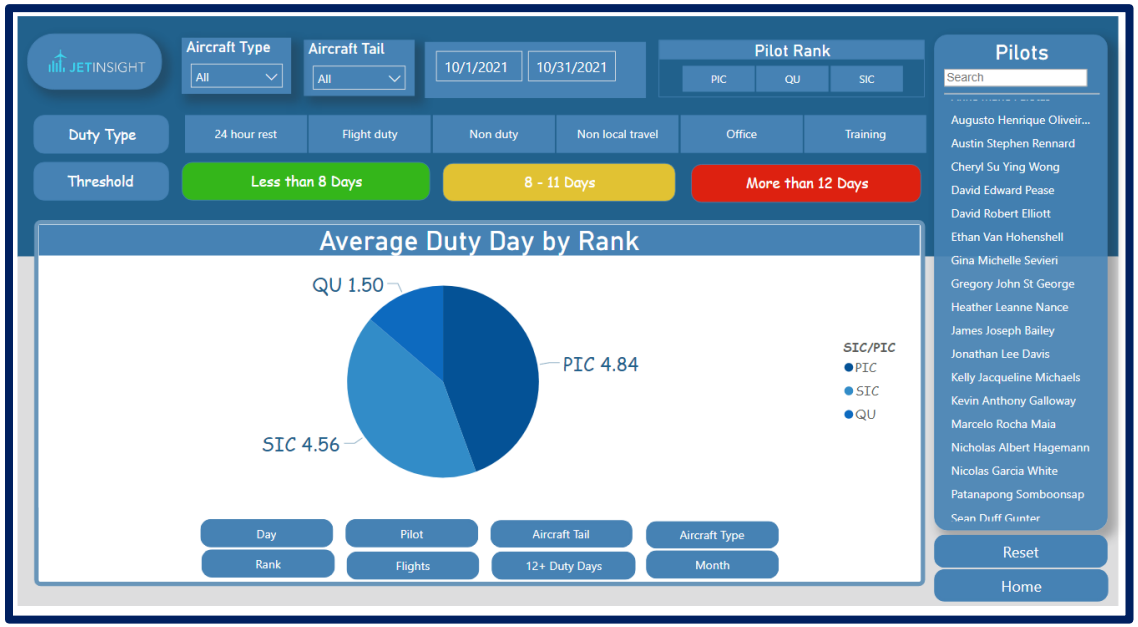
After the useful extraction, power app is built which shows the actual salary breakdown and the pay report.





Also, Power BI is used for analytics purpose, showing different dashboards for several purposes.


JETINSIGHT
Aircraft Type
All
Aircraft Tail
All
10/1/2021
10/31/2021
Pilot Rank
PIC
QU
SIC
Pilots
Search
Augusto Henrique Oliveir...
Austin Stephen Rennard
Cheryl Su Ying Wong
David Edward Pease
David Robert Elliott
Ethan Van Hohenshell
Gina Michelle Sevieri
Gregory John St George
Heather Leanne Nance
James Joseph Bailey
Jonathan Lee Davis
Kelly Jacqueline Michaels
Kevin Anthony Galloway
Marcelo Rocha Maia
Nicholas Albert Hagemann
Nicolas Garcia White
Patanapong Somboonsap
Sean Duff Gunter
Duty Type
24 hour rest
Flight duty
Non duty
Non local travel
Office
Training
Threshold
Less than 8 Days
8 - 11 Days
More than 12 Days
Duty Day by Aircraft Type
DutyDay
10
5
0
AircraftType CL60
DutyDay 7
C680
C525B
C525
C56X
C525A
CL60
Mult
PC12
AircraftType
Day
Pilot
Aircraft Tail
Aircraft Type
Rank
Flights
12+ Duty Days
Month
Reset
Home


JETINSIGHT
Aircraft Type
All
Aircraft Tail
All
10/1/2021
10/31/2021
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Patanapong Somboonsap
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Duty Type
24 hour rest
Flight duty
Non duty
Non local travel
Office
Training
Threshold
Less than 8 Days
8 - 11 Days
More than 12 Days
Average Duty Day by Rank
QU 1.50
PIC 4.84
SIC 4.56
SIC/PIC
PIC
SIC
QU
Day
Pilot
Aircraft Tail
Aircraft Type
Rank
Flights
12+ Duty Days
Month
Reset
Home

BEST PRACTICES OF ROBOTIC PROCESS AUTOMATION

Some of the best practices that are followed for best efficiency of Robotic Process automation are discussed below:

- ✓ Create configurable files of code
- ✓ Create a library to store all reusable automation components to make ongoing development faster and make it easier to support automation in production in the future.
- ✓ Add a logging step to the workflow intermittently to help document and tell a story of what the RPA bot has completed.
- ✓ Using log for auditing purposes, it can be sent to a digital supervisor for analysis, and it can provide business-relevant data about the long-term impact of RPA.
- ✓ Exceptions like a timed-out application, bad data, or a new screen within the application also can be dealt with build-in error handling
- ✓ Create PDD (Process Design Document) that makes the processes more transparent and better understands the business process to be automated, including flow diagram, Steps of the process, discrepancies of the process, time estimation, and all scenarios that can occur in the process, etc.
- ✓ Automation of managing to account of the employees in the finance department by reconciling all the required filtered data.
- ✓ By identifying the user's email request and fulfilling the user requirements, and then notify the user about the status, reducing the workload of a human resource.
- ✓ Plan RPA process wisely
- ✓ Implementing RPA solutions would be successful when performed as teamwork rather than operating in silos. Collaboration is important
- ✓ Including the end-users in the implementation journey as they are the one who has a deep understanding of the processes that are planned to automate.
- ✓ Offer structured guidance to its employees who are directly or indirectly connected with the automation project
- ✓ Prepare for automation journey within different environments wherein they can be developed and tested before the actual implementation
- ✓ Ensure that the test and development environments should provide enough recent data for better outcomes
- ✓ Focus on long-term goals. Every minor change should be brainstormed, if it is prone to change.
- ✓ Constantly measure the performance to identify the key metrics from the beginning to understand how well RPA is performing for the organization
- ✓ Focus on the people of the organization
- ✓ Being crystal clear on what is planned to seek with RPA implementation
- ✓ Monitor the before and after situation to understand if the solution is actually providing the desired results.
- ✓ Selection of appropriate RPA tool depending on the requirement analysis

COCNLUSION

In this case study, Robotic Process Automation is discussed along with its purpose, benefits, use-cases in different industries, RPA tools comparison, Top tools used for different purposes. Robotic Process Automation in Power Automate Desktop is the main focus and the use-cse of Jet Industry is also discussed.