

An Internship Report

on

INTELLIGENT AUTOMATION VIRTUAL INTERNSHIP

Submitted in partial fulfillment of the requirements
for the award of the degree of

BACHELOR OF TECHNOLOGY

in

Computer Science & Engineering in (AI&ML)

by

KONA POOJITHA

224G1A3370



**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
(ARTIFICIAL INTELLIGENCE & MACHINE LEARNING)**

**SRINIVASA RAMANUJAN INSTITUTE OF TECHNOLOGY
(AUTONOMOUS)**

(Affiliated to JNTUA, accredited by NAAC with 'A' Grade, Approved by AICTE, New Delhi
& Accredited by NBA (EEE, ECE & CSE)) Rotarypuram village, B K Samudram Mandal,
Ananthapuramu-515701.

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Department of Computer Science & Engineering (AI&ML)



Certificate

This is to certify that the internship report entitled “**Intelligent Automation Virtual Internship**” is the bonafide work carried out by **KONA POOJITHA** bearing Roll Number **224G1A3370** in partial fulfilment of the requirements for the award of the degree of **Bachelor of Technology** in **Computer Science and Engineering (Artificial Intelligence & Machine Learning)** for three months from April – June 2024

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Place:Ananthapuramu

EXTERNAL EXAMINER

PREFACE

All India Council for Technical Education (AICTE) has initiated various activities for promoting industrial internship at the graduate level in technical institutes and Eduskills is a Non-profit organization which enables Industry 4.0 ready digital workforce in India. The vision of the organization is to fill the gap between Academic and Industry by ensuring world class curriculum access to the faculties and students. Formation of the All-India Council for Technical Education (AICTE) in 1945 by the Government of India.

Purpose: With a vision to create an industry-ready workforce who will eventually become leaders in emerging technologies, EduSkills & AICTE launches ‘Virtual Internship’ program on Cyber Security. This field is one of the most in-demand, and this internship will serve as a primer.

Company’s Mission Statement: The main mission of these initiatives is enhancement of the employability skills of the students passing out from Technical

ACKNOWLEDGEMENT

The satisfaction and euphoria that accompany the successful completion of any task would be incomplete without the mention of people who made it possible, whose constant guidance and encouragement crowned our efforts with success. It is a pleasant aspect that I have now the opportunity to express my gratitude for all of them.

It is with immense pleasure that I would like to express my indebted gratitude to my internship coordinator **Mr. Suman Lingam, Assistant Professor, Department of Computer Science and Engineering**, who has supported me a lot and encouraged me in every step of the internship work. I thank him for the stimulating support, constant encouragement and constructive criticism which have made possible to bring out this internship work.

I am very much thankful to **Dr. P. Chitralingappa, Associate Professor & HOD, Department of Computer Science and Engineering (AI & ML)**, for his kind support and for providing necessary facilities to carry out the work

I wish to convey my special thanks to Dr. G. Balakrishna, Principal of Srinivasa Ramanujan Institute of Technology for giving the required information in doing my internship. Not to forget, I thank all other faculty and non-teaching staff, and my friends who had directly or indirectly helped and supported me in completing my internship in time.

I also express our sincere thanks to the Management for providing excellent facilities and support

Finally, I wish to convey my gratitude to my family who fostered all the requirements and facilities that I need.

**KONA POOJITHA
(224G1A3370)**

INDEX

Contents	page No.
List of figures	VII
Chapter1: Introduction	1-2
Chapter 2:RPA Technology	3-5
Chapter3:Overview of BluePrism	6-9
Chapter 4 : Applications	10-12
Chapter 5 : Modules	13-22
Chapter 6 :Learning Outcomes	23
Chapter 7 : Conclusion	24
Internship Certificate	25
References	26

LIST OF FIGURES

Fig No	Description	Page No
1.1	Difference between Intelligent Automation and RPA	2
2.1	Robotic Process Automation	3
2.2	Tools Of RPA	5
3.1	Features Of RPA	6
4.1	Applications Of RPA	10
5.1	Business Objects	17
5.2	Exception Handling	20

Chapter 1 Introduction

Intelligent automation (IA) is the process of using artificial intelligence (AI) to make self-improving software automation. It combines the capabilities of AI, machine learning, natural language processing, and robotic process automation (RPA) to create more efficient, adaptable, and intelligent systems. Robotic process automation (RPA) is a software technology that automates repetitive and labor-intensive back-office workflows like filling in forms, searching for information, or sorting invoices. RPA robots are software robots that interact with any digital system like people do.

1.1 Key Components of Intelligent Automation:

1. **Robotic Process Automation (RPA):** RPA involves using software robots or "bots" to automate repetitive and rule-based tasks. These bots can interact with applications, process transactions, and handle data without human intervention.
2. **Artificial Intelligence (AI):** AI enables systems to perform tasks that typically require human intelligence, such as understanding natural language, recognizing patterns, and making complex decisions. In IA, AI components like machine learning, computer vision, and natural language processing enhance the capabilities of automated processes.
3. **Machine Learning (ML):** ML algorithms allow systems to learn from data and improve their performance over time. In IA, ML can be used for predictive analytics, anomaly detection, and decision-making based on historical data.
4. **Natural Language Processing (NLP):** NLP allows systems to understand, interpret, and respond to human language. This enables chatbots, voice recognition, and text analysis capabilities in IA solutions.
5. **Process Mining and Optimization:** IA often involves analyzing and optimizing business processes. Process mining tools help identify inefficiencies and recommend improvements, while automation tools can implement those changes.

Intelligent Automation is a transformative technology that has the potential to revolutionize how businesses operate by combining the strengths of AI and automation to create more responsive, efficient, and intelligent systems.

Difference between intelligent automation and robotic process automation

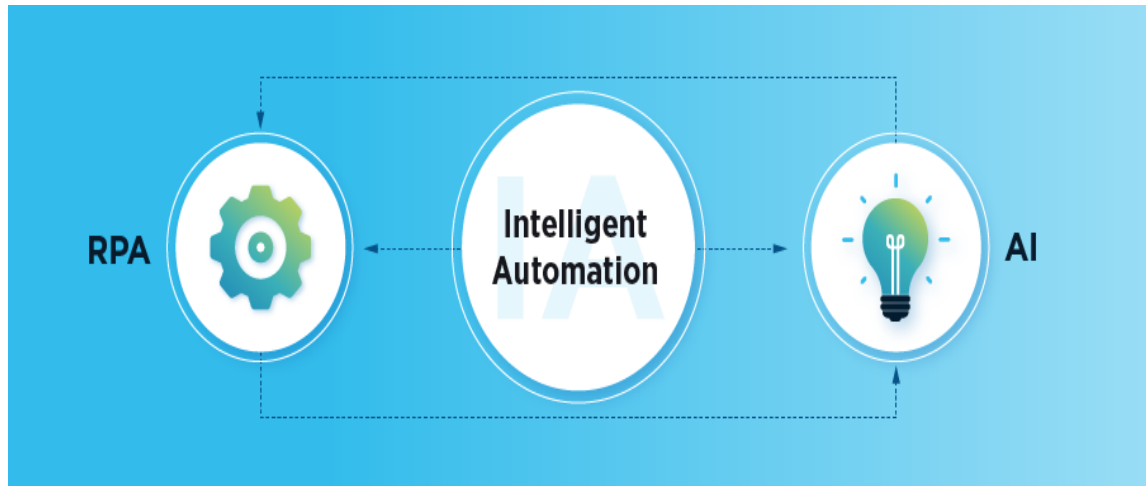


Fig 1.1: Difference between intelligent automation and RPA

Robotic process automation and intelligent automation both refer to the process of automating business workflows with software. However, RPA is a traditional technology where users recorded the tasks and the software copied the recording. For instance, the user could record a task. They could open a folder, open a file, copy the data into another system, then close the file. Then, RPA could repeat the same process at scale.

Building on that, IA is the future of RPA. It uses advanced technologies so RPA can automate increasingly complex tasks with minimum human intervention. Moreover, IA can learn and improve over time. For example, IA can extract relevant data from scanned invoices. Over time, it learns the frequent invoice templates your organization uses and gets faster and more accurate at data extraction.

Chapter 2

RPA Technology

Software called robotic process automation (RPA) makes it simple to create, use, and manage software robots that mimic how people interact with computers and software. Software robots are capable of performing a broad range of predefined tasks, including understanding what is on a screen, making the appropriate keystrokes, navigating systems, and extracting and identifying data. However, without the need to get up and stretch or take a coffee break, software robots can complete the task faster and more reliably than humans. Workflows are streamlined through robotic process automation, which helps businesses become more lucrative, adaptable, and responsive. By reducing menial duties from their workdays, it also boosts employee satisfaction, engagement, and productivity. RPA can be quickly installed and is non-intrusive, which speeds up digital transformation. It's also perfect for automating processes using antiquated systems that lack virtual desktop infrastructures (VDI), database access, or APIs. RPA is a significant part of the digital transformation, according to 63% of international CEOs. Peg systems poll. RPA accelerates major improvements in business metrics globally and across all sectors.

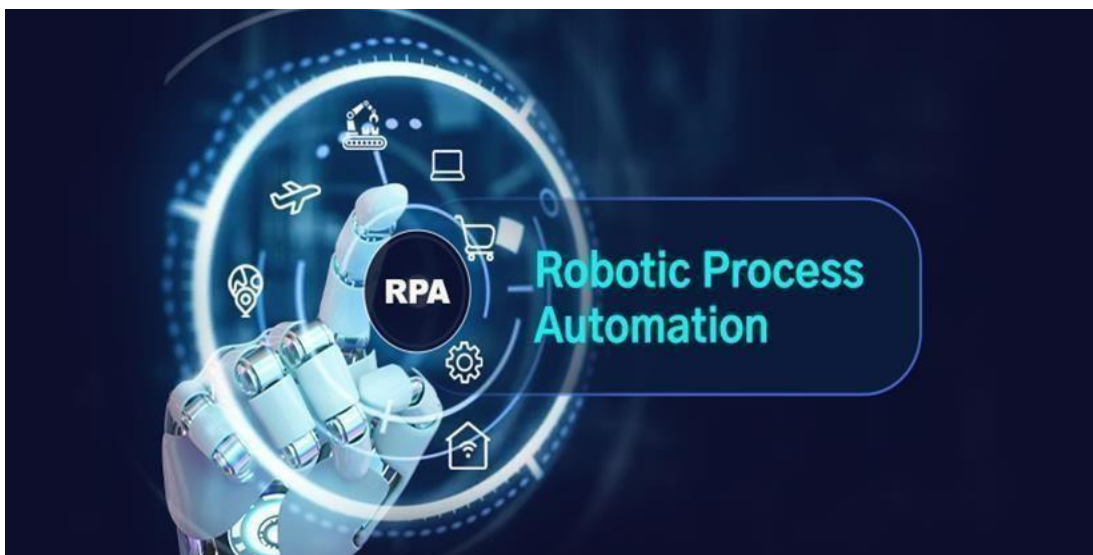


Fig 2.1: Robotic Process Automation

2.1 What RPA technology characteristics and capabilities are crucial?

RPA's rule-based decision making, improved accuracy, audit trails, scalability, and reduced risk make it a valuable tool for supporting compliance with regulatory requirements across various industries and business functions.

2.2. Why is RPA the fastest-growing enterprise software in the world?

When you consider RPA's demonstrable benefits and how much simpler it is to install than other corporate technology, it's clear why RPA usage has been increasing globally. Many different sorts of industries may use RPA to handle their own operational problems in fresh and effective ways. RPA enhances numerous processes, resulting in increased capacity, quicker throughput, and fewer mistakes for critical activities, according to functional area leaders from finance to customer service to marketing to human resources and beyond. When compared to other corporate technologies, an investment in RPA technology offers a quick return on investment and requires less cash up front. RPA can be adopted with minimum disturbance, according to IT leaders. RPA has also emerged as a crucial facilitator for digital transformation since software robots can readily access and operate within outdated systems. And scalable, enterprise-ready solutions are available with contemporary RPA technologies. Employees discover that integrating robotic assistants into their daily tasks is straightforward, and that RPA's low-code methodology enables them to become citizen developers capable of creating their own basic automations.

Challenges Of RPA:

Mining, governance, and AI modules that can enhance RPA capabilities, Kryon offers complete cycle automation capabilities. In the past, NICE has prioritised enhancing customer interactions via contact centres and at various touchpoints. What to look for in RPA software. Enterprise executives should take into account the following factors while searching for RPA technologies:

Scalability. Instead of deploying and scaling RPA on each desktop, businesses are recommended to use RPA systems that can be controlled and scaled centrally from a single control panel.

Speed. In a few hours or less, businesses should be able to build and test new robotic procedures while also speeding up the bots' performance.

Reliability. Companies should seek for technologies with built-in monitoring and analytics so they can keep an eye on the health.



Fig 2.2. Tools Of RPA

Chapter 3 Overview of BluePrism

3.1 What is BluePrism?



- Blue Prism is a software company that develops industry robotic process automation (RPA) software that enables businesses to automate complicated, end-to-end procedures.
- Blue Prism created the Virtual Workforce Platform concept and is working on a robust, highly scalable, secure, and dependable enterprise Robotic Process Automation platform.
- Blue Prism's software complements traditional IT solutions by utilising an agile virtual workforce that adheres to rule-based business processes and interacts with systems similar to users.

3.2. Features of BluePrism:

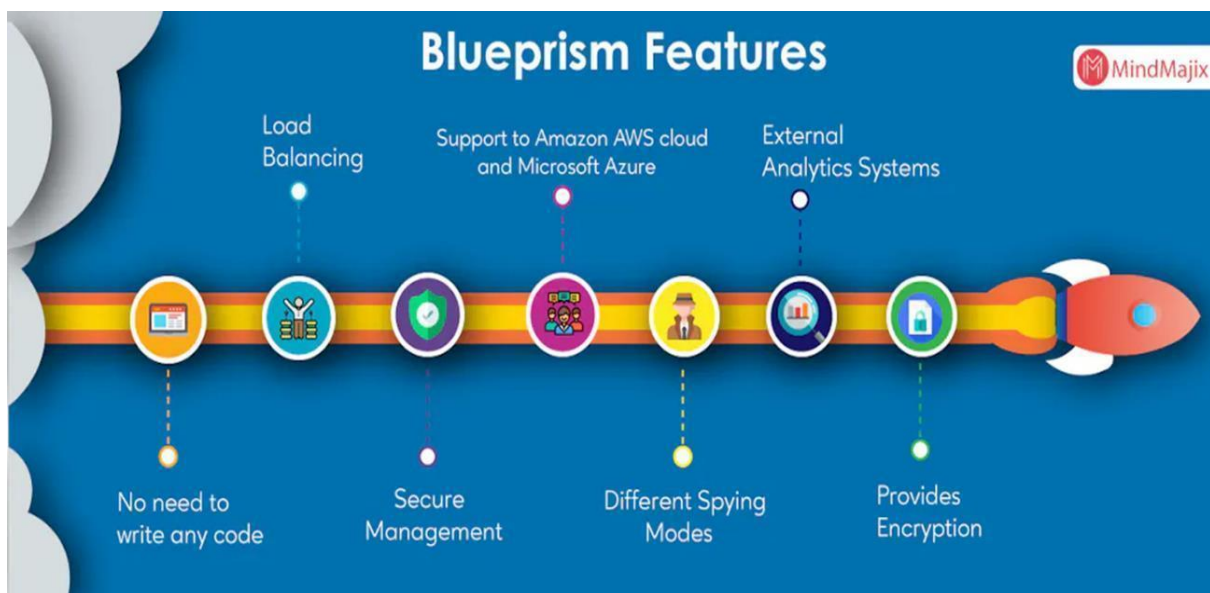


Fig.3.1: Features Of BluePrism

Secure & Accurate: There is a limitless number of processes that need to be executed in this tool.

Robust: It provides robust features like data encryption, load balancing, and end-to-end auditing. So, every change is audited and is related back to its related user.

Scalable & Resilient: Allows scalability using central management, making the processes automated as per the need and can be monitored centrally.

24*7 Workforce: The tool is designed to work intelligently without a person physically tracking every action occurring on the screen.

Analytics: Provides extended features to configure Dashboards so that the session information can be redirected to the Monitoring Systems.

Data Security and Data Abstraction: the tool is specially created to work autonomously, and the processing is performed in a data center, providing a well-defined data abstraction of data and process security.

Provide Cloud support: Provides capacity support to complete the task as per the business requirement so that the users have just to manage them centrally.

Execution Intelligence: Robots connect to systems and react dynamically to the responses in the data on multiple environments.

Enables safe and secure management of its virtual workforce (containing the software robots)

3.3. How Blue Prism Works

Visual Process Design:

Blue Prism uses a visual, drag-and-drop interface for designing automation processes. Users can create process flows by linking steps, actions, and decisions visually, without the need for complex programming.

Interacting with Applications:

Blue Prism robots interact with various applications through the user interface, just like a human would. It can work with web applications, desktop software, databases, and even mainframe systems using methods like screen scraping, API integration, and object cloning processes. It allows administrators to schedule, prioritize, and manage the execution of processes, providing real-time insights into the performance and status of digital workers.

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3.4. Blue Prism in the RPA Landscape

- **Comparison with Other RPA Tools:**

Blue Prism is often compared with other RPA tools like UiPath and Automation Anywhere. While all offer automation capabilities, Blue Prism is distinguished by its focus on security, compliance, and scalability, making it a go-to choice for enterprises with complex automation needs.

- **Position in the Market:**

Blue Prism is considered a pioneer in the RPA industry. Its emphasis on a digital workforce that is secure, scalable, and manageable sets it apart in the competitive RPA landscape.

3.5. The Future Vision of Blue Prism

- **Intelligent Automation:**

Blue Prism is continuously evolving to integrate more intelligent automation features, including AI, machine learning, and natural language processing (NLP). This evolution is aimed at creating a smarter digital workforce capable of handling more complex tasks.

- **Expanding Ecosystem:**

Blue Prism actively collaborates with partners and third-party vendors to expand its ecosystem, offering a marketplace (Digital Exchange) where users can access pre-built automation components, solutions, and plugins to enhance their automation projects.

3.6 Benefits of Blue Prism:

- **Automation Speed:**

Days and weeks to automate processes in a Blue Prism would take months and years to automate using standard automation methodologies.

➤ **Less Expense**

Robots are programmed with the business rules of repetitive clerical duties and deployed to drive existing applications, eliminating the requirement for costly integration and process re-design expertise.

➤ **Improved Performance**

A small specialist ability within the IT department collaborates with the robotic workforce to train them, manage referrals, and continuously enhance the robots' operational performance.

➤ **Secure**

The robotic automation platform is secure, audited, and governed within the governance IT corridor. The usage of software robots invariably increases compliance with applicable data standards, confidentiality, and the speed and accuracy of record keeping.

➤ **Scalable**

Because the software robots operate in a virtualized environment, they can rapidly scale them up and down based on demand.

Chapter 4 Applications

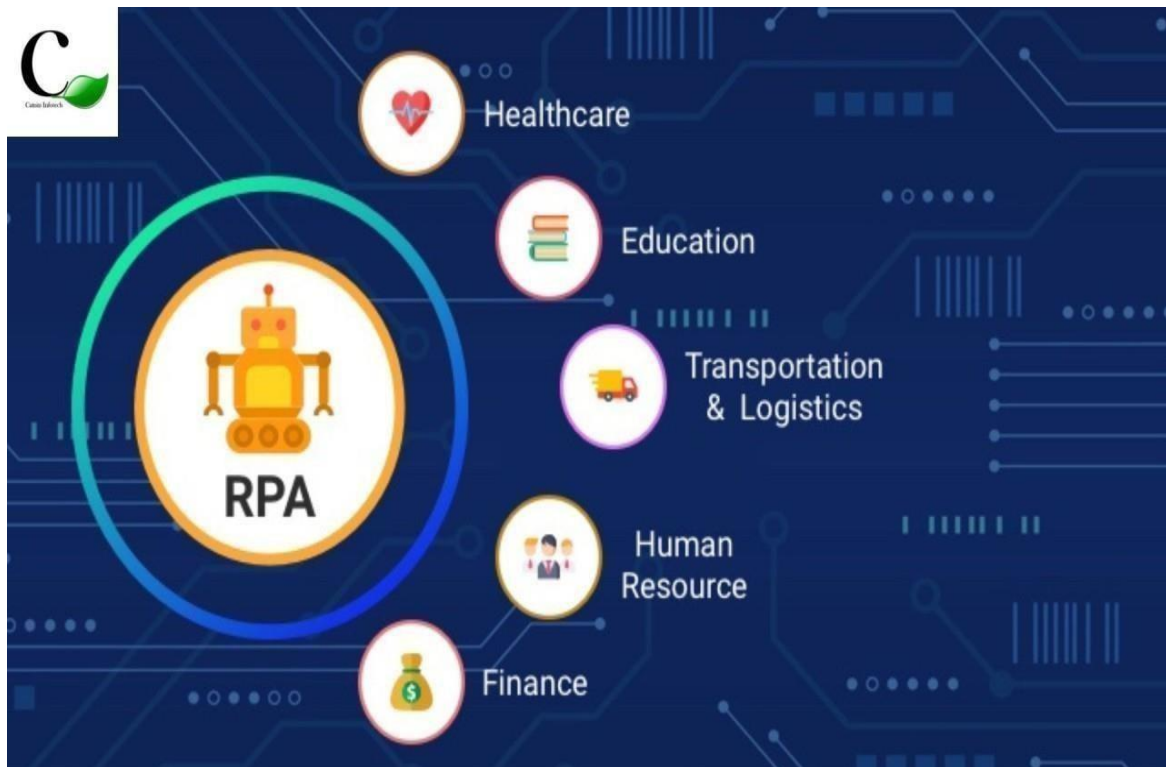


Fig 4.1: Applications of RPA

❖ ROBOTIC PROCESS AUTOMATION IN HEALTHCARE

The Healthcare industry requires the services of RPA on various levels. Healthcare is an industry primarily based on patient care. However, the administrative duties that support it are essential to its functioning. Any operation, from front-office activities to payment processing, can be automated for efficiency. This can reduce costs, quicken the speed of procedures, and optimise patients' experience in healthcare establishments.

❖ ROBOTIC PROCESS AUTOMATION FOR CUSTOMER SERVICE

Robotic Process Automation (RPA) improves and enhances customer service by reducing administrative workload. Customer service is sped up with software robots that gather data and documents from various systems, handle service requests, and update customer records. Customer requests can be responded to more promptly, and user feedback and satisfaction statistics can be better managed, thanks to robots.

RPA also improves efficiency by assisting in the collection of data and documents, as well as the updating of client data and requests. Needless to say, customer service is one of the pivotal applications of RPA.

❖ ROBOTIC PROCESS AUTOMATION IN BANKING

One of the best applications of RPA is in the banking industry. Leveraging technological breakthroughs leading to quicker, more reliable, and dependable services, the Banking and Financial business has seen exponential growth over the last several years. RPA assists banking and accounting departments in automating time-consuming manual operations, allowing employees to focus on more important activities and gaining a strategic edge for the company. RPA has been widely utilised in this industry to help organise and automate time-consuming banking activities. In fact, RPA in the banking sector is estimated to reach \$1.12 billion by 2025, according to studies. Banks have been able to dramatically minimise the need for human participation by shifting most of the laborious, manual operations from workers to machines, which has had a direct influence on everything from productivity and efficiency levels to staffing concerns and expenditures.

❖ ROBOTIC PROCESS AUTOMATION IN HUMAN RESOURCES

While not as well-known as other varieties of intelligent automation employed in HR, RPA is gaining traction among HR professionals as additional use cases emerge. RPA is currently often used in HR to automate tasks including consolidating or reviewing datasets, issuing job offer letters to candidates, onboarding new hires, enabling health plan registration, and even making badges for conferences and special events. Furthermore, RPA can be leveraged in HR to create purpose-built chatbots by combining it with machine learning and Natural Language Processing (NLP).

❖ ROBOTIC PROCESS AUTOMATION IN FINANCE

The presence of highly repetitive tasks is one of the biggest characteristics of operations in finance. Data entry, report generation, and record keeping are some of the redundant tasks that burden employees in the industry. Most of the operations in finance are rule-based. With minimum to no human intervention, it is easy for RPA software to be programmed and used.

Many tasks like Inventory Management, Intercompany Reconciliation (ICR), and Accounts Receivable can be automated for efficiency.

Most finance companies today use RPA applications to increase efficiency, and automation can make operations like invoice processing easier. Although the finance industry runs on numbers, it prioritises its customers too, and they frequently struggle with creating invoices based on its clients' required format.

❖ ROBOTIC PROCESS AUTOMATION IN EDUCATION

RPA can automate administrative tasks such as student records management, payment processing, and class schedules, allowing educational administrators to focus on more strategic tasks. By automating repetitive, rules-based tasks, RPA can increase efficiency and accuracy in educational processes, saving educators and students time and effort.

RPA can be used to collect and analyze student performance data, enabling educators to personalize learning and improve each student's educational experience. Automating administrative tasks can reduce operational costs, allowing educational institutions to invest more resources in educational programs and services.

Chapter 5 Modules

MODULE 1: PROCESS STUDIO

Process Studio plays a key role in the Blue Prism package – it provides the ability to create, edit and test processes using a graphical drawing interface with drag and drop process components.

The process area (the main white region) is the area of the screen where processes are designed and tested using the flowchart components in the toolbox. To draw a process, select a drawing object from the toolbox and click the region on the canvas where you want the object to appear. Alternatively, drag and drop the object from the toolbox onto the canvas.

Whilst the mouse pointer is over the canvas, the pointer changes to show the object currently selected.

This behaviour can be disabled by using the View...Dynamic Cursor menu option at the top of the screen.

A grid is provided in order to make it easier to align objects within the process, and a snap to grid option will align each object placed with the nearest gridline. Both of these options can be enabled or disabled via the View menu.

It is possible to Zoom to varying degrees of precision using the View...Zoom menu, and Undo and Redo functionality is also implemented, via the Edit menu.

2.1.1. Decision Stages

Have two branches coming out of them, enabling a Process to split into two separate paths. Are used to evaluate the result of an Expression as either 'True' (Yes) or 'False' (No). In BluePrism, these outcomes are known as 'Flags'. Can use information from other Stages such as Data Items to form part of the decision logic.

2.1.2. Calculation Stages

Use Expressions to calculate values. These can be numerical or made using values

such as text, dates, etc. Are dependent on Data Items to store results. Can work with Data Items to perform calculations.

2.1.3. Process Validation

The 'Process Validation' tool tests for a number of potential errors in your Blue Prism process or visual business object. Using this tool will help you detect problems in your work before you make it available for use in Control Room.

The following paragraphs give a more detailed examination of process/object validation and the concepts used within the interface to aid in identifying and resolving any process issues.

Types of result

Validation results can be one of three types:

Result	Description
Error	Errors are generally used to indicate problems which must be fixed in order to avoid your process / business object failing at runtime.
Warning	Warnings alert you to potential problems which may cause your process / business object to fail at runtime. You must use your discretion in deciding whether or not to ignore the error.
Advice	Advice can often give you useful information on how to make the process / business object easier to understand or improve the documentation, but does generally not include problems that will cause any failure during running.

The **Go To Stage** button takes you to the relevant stage, if such a stage exists. For example, if a stage is missing an out-bound link, the button will take you to the stage which is missing a link.

MODULE

2 : INTRODUCTION TO PROCESS FLOW

3.1 Circular Paths

Blue Prism is designed to automate repetitive work and the inclusion of ‘Circular Paths’ -looping Process Diagrams, enable some steps to be repeated over and over again. Components that are essential for building a Circular Path, which will enable a Process flow to loop through, then progress to the end once the loop limit is met, are as follows: - Data Item to set loop limit;- Data Item to store current loop count;- Calculation Stage to keep count of loops;- Decision Stage to control flow. Most Stages have only one outbound link, but there is no limit to the number of in bound links a Stage can have.

3.2 Collections and Loops

There are occasions when Process Diagrams benefit from the ability to hold multiple values together, this can be achieved with a Collection Stage. The values stored within a Collection Stage are accessed one row at a time, using a Loop Stage to move forward through the rows. Collections are referenced in Expressions using dot notation - Collection name and Fieldname, separated by a full stop and placed between square brackets [Collection.Field]. Loop Stages have two parts: Loop Start and Loop End.

3.3 Layers of Logic

Processes commonly require a significant volume of workspace on which to arrange them. To make Process Diagrams more manageable they can be split into different sections, each on their own Page, which are arranged in a hierarchy. Page Reference Stages can control the movement between the different Pages within a Process. Via the Page Reference Stage properties, you can view where Page References are defined. Page Reference Stages take the Process flow down to the Start Stage of a lower Page. When the End Stage of that Page is reached, the Process flow comes back up to the Page Reference Stage that called it. It is possible to cut and paste logic from one Page to another, to organize the Process.

MODULE

3: INTRODUCTION TO INPUTS AND OUTPUTS

4.1. Input Parameters

When a Process steps from a Page down into a Sub-Page, a value can be passed down to be used by the Sub-Page to perform a task values that can be transmitted down through Layers of Logic in this way, are known as ‘Input Parameters’. The use of these enable more efficient distribution of tasks across multiple Sub-Pages, making Processes easier to maintain and keeping everything clear and more intelligible to others. Before a Process begins any of its tasks, it is possible to transmit an external value to the Start Stage on the Main Page, to determine how the Process should flow. This is performed by a special kind of Input Parameter, known as a ‘StartUp Parameter’.

4.2. Data Items: Visibility and Types

Data Items have the ability to store a range of Data Types, though each Data Item within a Process must be assigned a specific Data Type to store. The most common Data Types are: Number; Text; Flag; Date; and Password. The less common Data Types are: DateTime; Time; Timespan; Image; and Binary.

Control Room

In a Production Environment, Processes are run from Control Room. From here, Processes do not run on a version of Blue Prism that is local to your Desktop, but are instead run on external resources – known as ‘Digital Workers’, which can be found in the Resources area. A Process run from Control Room is known as a ‘Session’ and each of these Sessions is assigned to a Digital Worker. If a Process has been configured to require a Startup Parameter, then the user can input the value after clicking the Process and clicking Start Selected Sessions.

Process errors and Session Errors can be identified via the ‘Session Log’.

Output and Start-Up

The Page Reference Stage on the upper Page, must be set up to receive the value from the End Stage of the lower Page. An End Stage on a lower Page can use Output Parameters to transmit a value up to a Page Reference Stage on an upper Page.

MODULE

End Stages can be used to transmit Process Outputs from Sub-Processes up to the Master Process.

Process Reference Stages must be set up to receive the Process Outputs.

4: BUSINESS OBJECTS

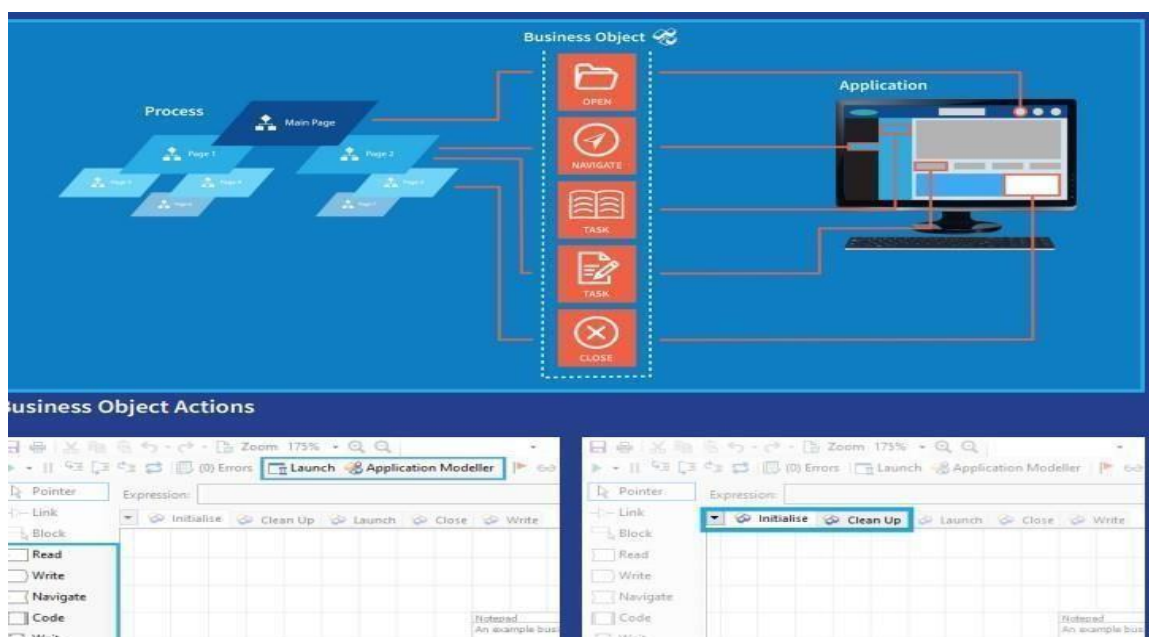
Introduction to Business Objects:

The purpose of a Business Object is to provide an interface to capture the functionality of an application.

Business Objects are never used on their own, but only as part of a Process Solution and can be thought of as a separate layer of a Process.

The tasks within a Business Object, are separated out onto different Pages - known as 'Actions', which sit in a flat structure that is not built around any specific hierarchy.

Each Action relates to a certain interaction with an application and a Process will use whichever of these Actions it requires, in any order, to perform a certain task within the application.



5.2: Business Objects

MODULE

Business Objects and Action Stages

Action Stages enable Process Diagrams to interact with each of the Actions within a Business Object, to perform a dedicated task within an application.

Action Stages have Input and Output Parameters that enable them to transmit values between the Process and the Business Object.

MODULE 5: OBJECT STUDIO

Object Studio is used to create reusable business objects that interact with external applications. It serves as the foundation for automating specific tasks within a process.

Features include:

Application Modelling: Users can model interactions with applications (e.g., web, desktop) to automate data entry and retrieval.

Reusable Actions: Objects created can be reused across multiple processes, promoting efficiency and consistency.

5.1 Application Modeller

The purpose of a Business Object is to integrate with an application, to make the application accessible for use by a Blue Prism Process. To create the integration, you must connect the Business Object to the application by creating an 'Application Model'. This can be achieved via the 'Application Modeller' within Object Studio. Which can be used to create a logical representation of an application, by identifying and capturing Elements from the user interface of the application - this is called 'Spying'.

MODULE 6: EXCEPTION MANAGEMENT

Exception Management Overview: A Process or a Business Object can be configured so that it is capable of capturing and handling errors - which are known as 'Exceptions'. The two main types of Exceptions are 'System Exceptions' - application based problems and 'Business Exceptions' - rules based problems. Digital Workers can pass Exceptions out for manual review and continue processing the workload, without interruption. The logic that is used to cater for Exceptions, is known as 'Exception Handling'. Exception Handling is a critical part of any Blue Prism Solution and should be designed with a high level of care. An escape route for Exception Items must be considered. All items marked as an Exception must be reviewed by a person, before they can be completed e.g: - An automated email that sends the details of the Exception Item to a specified inbox, as soon as it has been processed. -

Waiting until the entire Work Queue has been worked, before collating all of the Exception Items into a specified file, saved to a drive shared by the manual team.

MODULE 7 – EXCEPTION HANDLING

Recovery Mode: If left unhandled, an Exception will travel up through the Process to the Main Page and cause the Session to terminate – this is known as ‘Exception Bubbling’. The first step to managing Exception Bubbling and enabling the Session to continue in the event of an Exception, is to build a ‘Recovery Mode’ into the Process Solution. The key elements of which, are ‘Recover’ and ‘Resume’, which work together to salvage and move on from an Exception.

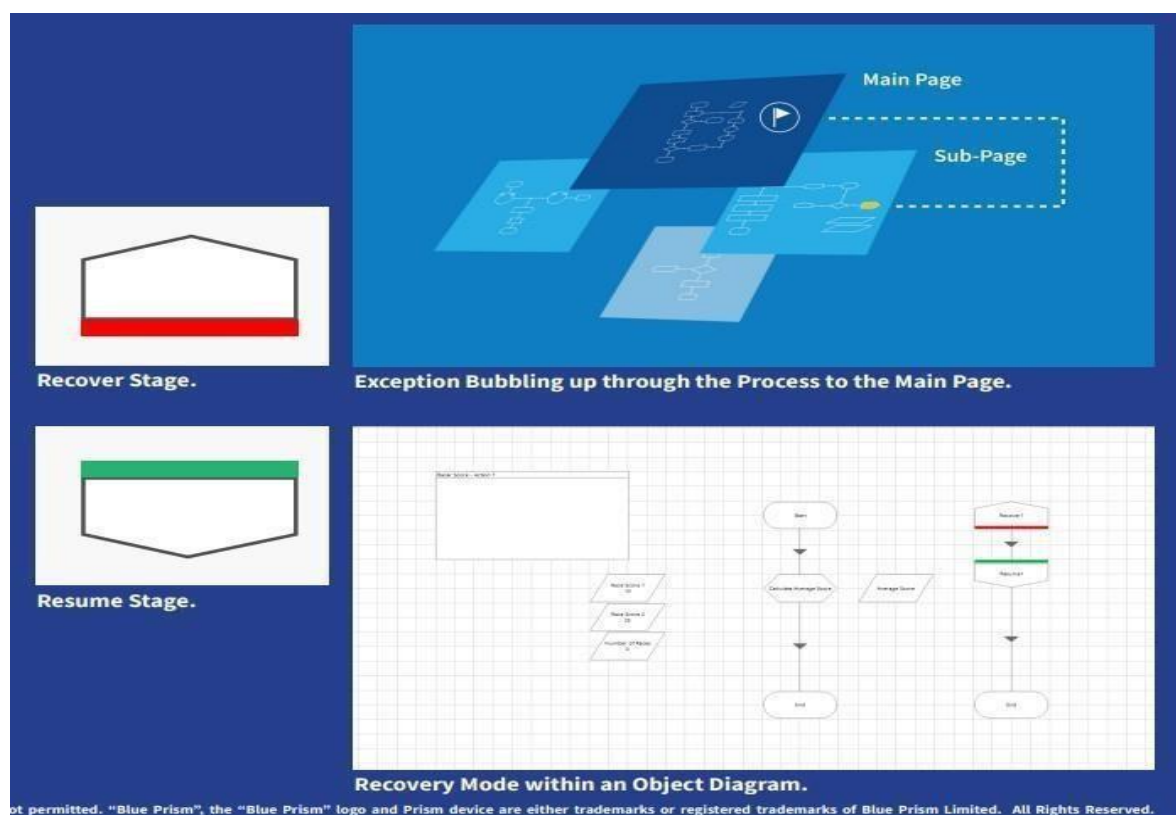


Fig 5.3: Exception Handling

Throwing Exceptions and Exception Properties

If Exception Handling has not been built into a Process Solution, then any Exceptions that are the result of the way a Process is configured, or of the performance of an application that is used by a Process, will be categorized as ‘Internal Exceptions’.

When an Internal Exception is identified, an 'Internal Error' message window will appear that provides detail of the Exception. Though the information contained here, is not always presented in an intelligible way.

MODULE 8: WORK QUEUES

8.1 Working Items

Blue Prism comes with some Business Objects, that are pre-installed software. These 'Internal Business Objects' are not diagrams and cannot be viewed or changed – only used in the Process through an Action Stage. An example of this is the Internal Business Object - Work Queues Business Object – which serves to provide a connection between a Process and a Work Queue.

Enabling the Process to store data extracted from external sources within a Work Queue, to be managed and worked within Blue Prism.

8.2 Queue Items

A Work Queue is populated with Items through a Blue Prism Process, ready to be worked by the same Process or by other Processes. To ensure a Process is able to work all of the Items within a Queue, the Process must include a Circular Path to return the flow back up to the Get Next Item Action Stage. Once all of the Items have been worked and marked as either 'Completed' or as 'Exception and once the Get Next Item Action Stage returns an empty Item ID, then the Process will flow towards the End Stage. An empty Item ID indicates that there are no more pending Items in the Work Queue, due to be worked.

8.3 Work Queue Configuration

Work Queues are created and configured in the Workflow Area of System Manager. This is where Work Queues can be provided with a Name and a Key Name. The Key Name directly correlates to a column name in the Collection Stage, that is used within a Process to add new Items to a Work Queue. The column value for each new Item will appear in the Item Key column, in the Queue Management Area of Control Room.

Sensitive data such as account numbers or policy numbers, must not be stored in the Item Key column. As this is an identifier that is visible throughout Blue Prism.

8.4. Queue Items

A Work Queue is populated with Items through a Blue Prism Process, ready to be worked by the same Process or by other Processes. To ensure a Process is able to work all of the Items within a Queue, the Process must include a Circular Path to return the flow back up to the Get Next Item Action Stage. Once all of the Items have been worked and marked as either 'Completed' or as 'Exception', and once the Get Next Item Action Stage returns an empty Item ID, then the Process will flow towards the End Stage. An empty Item ID indicates that there are no more pending Items in the Work Queue, due to be worked.

Work Queue Configuration: Work Queues are created and configured in the Workflow Area of System Manager. This is where Work Queues can be provided with a Name and a Key Name. The Key Name directly correlates to a column name in the Collection Stage, that is used within a Process to add new Items to a Work Queue. The column value for each new Item will appear in the Item Key column, in the Queue Management Area of Control Room. Sensitive data such as account numbers or policy numbers, must not be stored in the Item Key column. As this is an identifier that is visible throughout Blue Prism.

Chapter 6 Learning Outcomes

- Comprehensive Understanding of Intelligent Automation and RPA
- Gained In-Depth Knowledge of Blue Prism Modules
- Learn how to design, build, and deploy automation workflows using Blue Prism's visual interface.
- Acquire skills in analyzing and documenting business processes to identify automation opportunities using Blue Prism.
- Implement robust exception handling and error management strategies in Blue Prism processes to ensure smooth and reliable automation execution.
- Understand how to use Blue Prism to interact with different applications, including web applications, desktop software, databases, and mainframe systems.
- Understand Blue Prism's security features, including role-based access control, data encryption, and secure credential management.

Chapter 7 Conclusion

The Intelligent Automation Virtual Internship offers a comprehensive learning experience that bridges theoretical knowledge and practical skills in the rapidly evolving field of Robotic Process Automation (RPA) and Intelligent Automation (IA). Through hands-on experience with industry-leading tools like Blue Prism, participants gain valuable insights into the design, development, and deployment of automation solutions that drive digital transformation across various business processes.

By engaging with key Blue Prism modules, including Process Studio, Object Studio, Control Room, and Work Queues, interns develop a deep understanding of how to build scalable, secure, and efficient automation workflows. They acquire practical skills in analyzing processes, designing automation solutions, handling exceptions, integrating with enterprise systems, and leveraging advanced features such as AI and cognitive services.

Internship Certificate



References

- [1] <https://blueprism.docebosaas.com/learn/course/internal/view/elearning/180/blue-prismfoundation-training>
- [2] https://www.tutorialspoint.com/blue_prism/blue_prism_object_studio.htm