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RPA Blue Prism Developer Course

Written Guide

Contents

Contents	1
Intent	2
Feedback	2
Introduction to RPA Developer	3
Overview	3
The RPA Delivery Methodology	3
Blue Prism	3
Certification	4
Learning Outcomes	5
Blue Prism Setup	7
Overview	7
Setting Up Blue Prism on a Windows Computer	7
Blue Prism Setup - Mac Users	10
Overview	10
Setting Up Blue Prism on a Windows Computer	10
Blue Prism Software Overview	12
Overview	12
Blue Prism Familiarisation	12
The Process Studio	13
The Object Studio	13
Data Types and Functions	15
Overview	15
Data Types	15
Expression Functions	16

Intent

This document is designed to augment your online learning experience and provide you with the opportunity to review and revise the content that has been discussed during the individual lessons of the course

Feedback

Please contact your WithYouWithMe RPA instructor if you have feedback on this document or any of your WYWM courseware.

Introduction to RPA Developer

Overview

Hello and welcome to the Blue Prism RPA Developer course.

This course sits within the Automation Career Pathway and is one of a suite of Automation Courses offered at WithYouWithMe. Throughout this course we'll be discussing the role of the RPA Developer and we'll go into the detail of developing automation solutions using the Blue Prism software.

In this lesson we will provide you with an introduction to the Blue Prism Developer course and a roadmap of what we'll cover throughout the lessons in this course.

We'll start off by reviewing the RPA Delivery Methodology, and discussing where the RPA developer fits in our methodology, we'll then familiarise ourselves with the Blue Prism software and we'll have a brief look at the assignments and learning objectives within this course.

The RPA Delivery Methodology

First, let's quickly review the RPA delivery Methodology. Process management, is the first step in the journey of automating a process. This step is used to determine if an organisation and its Business Processes are suitable candidates for automation. This assessment is generally conducted at a higher level and considers a range of organisational factors such as IT infrastructure, operational dependencies, volume etc into consideration.

Next we have the Define phase of the Delivery Methodology. In the define phase the Organisation's functional requirements are identified, the process being considered is mapped in detail and the PDD is then completed in preparation for the Design and development of the RPA solution.

As you can imagine, in the design phase the RPA solution is designed, typically by solution architects and senior developers. At the completion of this phase the RPA developer or development team has a clear understanding of how the process is carried out and how to build an automation solution that can automate that process.

Next, and most importantly given the content of this lesson, is the Build and Test Phases where we iteratively build and test our RPA solution against the process definition and design documentation we've been provided. This phase will be our principal focus for the duration of this course.

We also have our UAT and Deployment phases where we test our solution with the stakeholders to ensure their requirements are met prior to deployment into a live or production environment.

Blue Prism

When we're talking about building these bots, we need a software tool that is intuitive, and can help us with the automation process so we don't need to write thousands of lines of code. The software that we'll be using to build bots in this course is called Blue Prism. At the end of this course you'll be able to build low complexity bots using Blue Prism and you'll have the knowledge required to sit the Blue Prism Solution Developer Accreditation which will make you job ready for an RPA solution development team.

Some of the topics that we'll be discussing in this course that are specific to blue prism are:

- Basic Automation
- Loops, Collections and Decisions
- Application Modeller
- Inputs, Outputs and Process Layers
- Work Queues
- Visual Business Objects
- And Automating Microsoft Excel

Don't worry if these don't make any sense at the moment, we'll go through them step by step throughout the course.

You will also learn how to produce the key RPA solution developer documents that include a Solution Design Document, Process Design Instruction and object design instruction. As was the case in the RPA Analyst course, you'll be provided with tools that you can use as a developer in industry. These include document templates, RPA software templates and a summary sheet that you can keep with you.

Finally, you'll also complete progress quizzes as well as a formative and summative assessment that will allow you to apply the skills and knowledge you have derived from our discussions in this course. It may not sound like it but this is where most of the students have the most fun in the course because they're building their own robots.

Throughout this course you'll be using the learning edition of Blue Prism which gives you free access to the software for 90 days. Don't worry, that will be plenty of time to complete your training and I'll take you through how to set it up before we get started.

The Learning edition of Blue Prism is where you will conduct consolidation exercises and build your automation solutions.

Certification

As mentioned before, upon completion of this course you will have the requisite knowledge and skills to sit the Blue Prism Developer accreditation exam. Blue Prism has 6 types of accreditations that include:

- Blue Prism Accredited Developer
- Accredited Professional Developer
- Accredited Solution Architect
- And many more
- Accredited Installation engineer
- Accredited Technical Architect

- Accredited ROM Architect

The first and most fundamental of these is the Blue Prism Developer Accreditation which is why we focus on this throughout this course. This certification is the industry standard for entry-level Blue Prism developer roles and certifies that the holder of this certification is proficient in the use of Blue Prism software and has a foundational understanding of RPA solution development.

The certification is achieved by passing an online exam and you can register for this on the blue prism online portal.

WYWM is an authorised training provider for Blue Prism, which means that blue prism has certified this course as aligning to their learning outcomes for a solution developer, and completion of this course fulfills the prerequisite requirements of foundational RPA solution development training. Basically, what this means is that when you complete this course you're eligible to sit the Blue Prism developer certification exam.

The next certification step is the Blue Prism Professional Developer. To achieve this certification you will need to learn how to build more complex automations and also gain some experience in industry. WYWM has an Advanced Blue Prism Developer course which can get you started on this journey after you have completed this course.

Learning Outcomes

Below are a list of learning outcomes that we'll go through in this course:

- Blue Prism Operations
 - Operate Blue Prism Dashboard
 - Operate Blue Prism Process Studio
 - Operate Blue Prism Object Studio
 - Operate Blue Prism Application Modeller
 - Operate Blue Prism Control Room
 - Operate Blue Prism Release Manager
 - Operate Blue Prism System Manager
- Development
 - Apply common data functions
 - Apply decision blocks
 - Build basic automations
 - Apply loops
 - Build basic objects
 - Build basic processes
 - Identify business process exceptions
- Application
 - Resolve common expectation handling errors

- Explain inputs and outputs
- Explain process layers
- Apply work queues
- Apply visual business objects
- Prepare processes with windows applications
- Understanding
 - Explain the UAT Phase
 - Produce a Solution Description Document
 - Produce a Process Description Instruction
 - Produce a Object Description Instruction
 - Explain surface automations
 - Apply browser automations
 - Recognise how to build processes for scalability

Blue Prism Setup

Overview

Welcome to this lesson where we set up the Blue Prism software. In this lesson we'll walk through the step-by-step process of getting the Blue Prism Learning Edition setup on your computer. I'll be demonstrating this as we go along so make sure you follow me through the process and pause the lesson if you need to.

At the end of this lesson you'll be set up with Blue Prism on your computer and you'll be ready to start building bots, so let's get started!

Setting Up Blue Prism on a Windows Computer

First you'll need to download the Learning edition of Blue Prism to your computer. This locally installed download will give you access to a free version of Blue Prism for 90 days, which, if you consistently chip away at it, will be more than enough time to complete the course.

It's worth noting at this point that Blue Prism is a .exe file or an executable file. This means that it won't run on a Mac operating system without a little help. For Mac users, your WYWM instructor will be able to create you a virtual desktop environment where you will be able to use Blue Prism. You can feel free to skip to the lesson titled Blue Prism Setup - Mac Users but also reach out to your WYWM instructor and they will get you set up on the virtual desktop environment. Also, for mac users, make sure you mark this lesson as complete so you can progress to the next lesson.

For the Windows users, we'll now step through the process for downloading the Blue Prism learning edition to your computer.

Firstly you'll need to make a Blue Prism Account. You can do this by navigating to the link on the screen. This link is also available as a clickable URL below this video page.

<https://www.blueprism.com/learning-edition/>

Now scroll down slightly and click on the Start Now button in the middle of the page.

This will take you to the Blue Prism where you can select "Get Learning Edition" and the top of the page. This will prompt you to login in or create an account. Because this will be your first time using Blue Prism you need to select "Don't have an account - Sign up here".

Here you'll need to enter some basic information and create a new account.

Once you've done this you'll need to verify your account by clicking a link within an email that will be sent to you from Blue Prism.

Now that you've verified your account you'll be able to click the login button. This will take you to another page where you will create your password and input some more details

Once you've inputted these details and saved your profile at the bottom of the screen you can navigate back to the login screen you had open previously and input your account details.

This will prompt you to input a phone number and submit to create a Training account.

Once you have submitted your application for a training account you can click on the blue button that will take you to the On-Prem trial page.

You can now click Get free trial and submit again.

This will send you another email with a downloadable. This email will contain instructions on what to do next.

First we need to read the getting started guide attached

Next we need to download and save our licence. The licence is the .lic file that will include your email address.

Once you've downloaded the licence and saved it to your hard drive, click the link and download Blue Prism.

Once the Blue Prism download is complete, navigate to your downloads folder and click the Installer icon that you just downloaded.

Click run then in the blue prism window to get started.

You will then need to agree to the Blue Prism license agreement and click next.

Select the location you'd like to download the software to then click install. You may also need to allow the installer to make changes.

Now click finish and launch Blue Prism.

After Blue Prism is launched you will need to create a password. You'll then need to click next which will allow Blue Prism to create a local database.

Now we need to activate our blue prism licence. Click next, input the credentials you created and browse for the licence file that you downloaded from your email. Once selected click next.

Now you need to generate a new activation code, copy the code to your clipboard, click next and let the application navigate you back to the Blue Prism Portal where you can paste your activation code.

Once again, you'll need to agree to the licencing agreement and submit your licence activation.

Once you're licence is activated you need to copy the activation text to your clipboard.

Now navigate back to your Blue Prism application, click the enter your key button and press the 'paste key from clipboard' button. Once that's done press next.

Well done - You've now successfully activated your Blue Prism Licence.

One final thing to do is download the training materials that are available in the materials tab of this lesson. You'll need these items when you're building bots throughout the course.

That's all we have for this lesson - But before you go, make sure you mark the Blue Prism Setup - Mac Users lesson as complete so you can progress through the rest of the course. Don't worry, they're only covering what we've just discussed.

Blue Prism Setup - Mac Users

Overview

Welcome to this lesson where we set up the Blue Prism software for people that are using the Mac OS. If you're a mac user looking to run Blue Prism on your machine you're in the right place.

As we mentioned previously, Blue Prism won't run on a Mac unless you set up a virtual desktop. What we'll run through in this lesson is setting up your virtual desktop environment using Amazon Work Spaces so you can use the Blue Prism Software. The good news is that you won't need to download the Blue Prism Software because it will already be installed on your Virtual desktop, along with a few other things that we'll go through now.

I'll also be demonstrating things as we go along so make sure you follow me through the process and pause the lesson if you need to.

Setting Up Blue Prism on a Windows Computer

Firstly, if you haven't already, you'll need to reach out to your WYWM instructor and ask them to create you a virtual desktop environment.

Once they've created this environment for you, you will receive an activation email that will prompt you to create an account.

Note that it can take up to 90 seconds to log into the virtual desktop environment so please be patient. The virtual desktop will also require a stable internet connection to work effectively.

Once you've logged on to the virtual desktop you will see blue prism as well as some other folders on your desktop. Of note is a .exe file that will generate your Blue Prism password when you login.

You should find the files you will use throughout the course and assignment in the relevant folders on your desktop. If the files are not available on your desktop you can download them from the materials tab of this course. You can do this by navigating to this Course on the WYWM People Platform via the firefox application in your virtual desktop. From there you can download the training materials that are available in the materials tab of this lesson. Once downloaded make sure you put the files in their corresponding area for ease of navigation later in the course.

Once you've completed this process double click on the password reset icon and get your Blue Prism username and Password.

Use these to log on to blue prism and once you've logged on you're ready for the next lesson.

If you have any questions regarding the content of this course, please reach out to the WithYouWithme Instructor.

Blue Prism Software Overview

Overview

Hi, and welcome to this lesson where we will take a look at the Blue Prism Software.

In this lesson we will walk through the key aspects of the Blue Prism Software to give you a high level understanding of the RPA tool we're going to be using to build our bots.

Blue Prism Familiarisation

Firstly open Blue prism and we'll have a look at all the sections of the software. When you first open the program you will be on the Home screen. In our current training environment this won't have much use for us but as you use Blue Prism out in industry this dashboard will give you a snapshot of how your automations are running by displaying process analytics and performance data. You can also tailor your dashboard to suit your needs.

Next is the studio tab. It's important to note that a Blue Prism Process is created as a diagram that looks similar to a business flow diagram. We create these processes in the studio tab and this is where we will spend much of our time during this course.

Next is the Control room. The control room is where we are able to run our completed processes, monitor their performance, view event and log data as well as viewing your work queues and queue items. This will make a lot more sense after we've built some processes and have them up and running.

The next tab along is the Analytics tab. This tab is used to select or build a performance performance monitoring capability for your processes that are running in a live environment.

Next is the release manager tab. This is where the processes that have been released are listed. You can think of a released process as a process that has been finished and is ready for testing or use in the live environment. In the release manager tab you wrap your complete process and its components into a neat package. The packages can be modified, made into a release and exported into an .xml file. The exported release can then be imported to another Blue Prism Database. This is how you will submit your assignment during this course.

Finally, the system manager tab is similar to the administrative tools section of your computer and we'll cover this in greater detail later in the course. We'll cover a few areas of the system manager but our primary focus will be in the Workflow section where we manage work queues.

We recommend that you explore each tab yourself before moving forward.

Ok, so as we said, most of our time will be spent in the process studio, so let's cover that in a bit more detail now.

The Process Studio

The studio looks like many other flowchart applications and uses many flow diagram symbols that you'll likely recognise from Microsoft Visio or Google's Draw IO. The key difference with a Blue Prism process diagram is that it is not an inert representation of a process, but rather, it is a graphical representation of a working robot that will interact with applications, manipulate data and perform decisions and calculations.

Because a Blue Prism process isn't just a picture, we can run our process in the studio and we can watch it working as it progresses through each step. We use the buttons shown to start, stop, skip and refresh our process. These buttons along with many others are shown across the top of the studio.

Within the process studio we also have Stages. A stage is used to build our process and are arranged vertically down the page. These stages make up the individual steps within a process and vary in functionality dependant on what they are required to do.

Within the studio we also have Business Objects. Business objects look similar to processes but they differ, in that a business object interfaces with an application such as Microsoft Excel. We'll go into this in more detail later, but for now, think of an object as a process within a process that specialises in interfacing with an application.

Processes combine application functionality with business rules to produce use work. Processes are at the heart of what we're learning in this course.

The process layer is where business object actions are linked together to create an automated process using component based methodologies to build components. This also allows for multiple processes to use the same business object actions.

In the studio tab you will notice that there are processes and objects. You can create a new process by right clicking on processes and clicking create process. This will take you to the process studio.

There are many buttons and functions in the process studio that we'll discuss throughout this course. You don't need to know them all in detail but a detailed description of each button in your written guides

The Object Studio

In the same way that you created a process from the studio tab, you can also create an object. The object studio is used to capture the functionality of an application so that it can be employed or

interfaced with by our processes. We will see later in the course that the object studio looks very similar to the process studio but there are some key differences that will become apparent later.

For now, understand that they are arranged in much the same way, with stages along the left side and tabbed pages across the top.

That's it for the theory on Blue prism, let's jump in and have a look at an example process.

Here you can see an example of a process. Note all the menu options we discussed earlier in the lesson across the top, and the stages down the left side of the process studio window.

You can see the go button at the left hand side of the screen. Once you've selected the Go button you can see the process running as Blue Prism steps through each stage of the process.

You can see the reset button here. This allows up to reset our process and you can see the highlighted orange that indicates where the process is up to has disappeared, meaning the process is ready to start from the start again.

We'll run the process again but this time take note of the "Read Data From Spreadsheet" stage which, as you can see from the stages on the left, is a page stage. This means it redirects the process to the next tab or page within this process. You can see this page here. You'll notice that we'll move to this page once we reach the Read Data from Spreadsheet stage.

Another thing to notice when we move into the Read Data From Spreadsheet page is that the first stage is an action stage and it will "open workbook". This stage is calling on a business object that interfaces with the Microsoft Excel application to open a workbook and you'll be able to see this as we run the process again.

Lets give it a go. Here we can see we're redirected to the Read Data page, and now we can see a excel workbook has been opened.

There's plenty more going on here and we'll cover this and more in later lessons.

Data Types and Functions

Overview

Hi and welcome to the lesson where we discuss data types and functions.

In this lesson we'll discuss data types and expression functions which will form the building block for the development of robots through Blue Prism.

Data Types

First data types. Blue Prism is essentially a programming language and cannot deduce what kind of data it is processing on its own, so we need to tell it what data we're working with. The Blue Prism software does facilitate this by categorising data into what we call data types and in the Blue Prism there are 10 different data types. When we're building our robots the software helps us by providing a field where we select the data type that we're using. These could be Text, Number, data, etc and we'll step through this shortly.

It's important to note that Blue Prism is what we call a 'low code' software. What this means is that we are building a software capability through what is largely a graphical representation of a process, rather than hard coding a process from start to finish as a software developer might do. This is great because it makes RPA Development a lot more accessible and scalable, however there is still some minor script writing and syntax terminology that is required so having a foundational knowledge of the principles of programming is advantageous.

When we're inputting our data types it's important to make sure that we use the correct syntax and format, which applies to all the data types that we use. Of these, the text data type is the most common, particularly when reading data from files or applications. You can see on your screen now some of the other data types that we'll be using in Blue Prism.

- Date
- Date/Time
- Flag
- Password
- Text
- Time
- Timespan
- Image
- Binary

It's worth noting that Passwords are hidden and text is in inverted commas. We'll demonstrate the importance of this when we go through the tutorials in later lessons.

Expression Functions

Now let's move on to expression functions. Expression functions are not unlike the functions you will have used in Microsoft Excel and you'll probably recognise some of them depending on your level of excel proficiency.

These expressions are used in calculation and decision stages to tell Blue Prism what to do and what type of data to interrogate. We will learn more about calculation stages in later lessons, but for now go into Blue Prism, create a new process or open an existing process and add a calculation stage. You can do this by finding the calculation button on the right side of the page and dragging that across to the main page. Once you've got the calculation stage on your main page, double click the calculation to enter the calculation properties.

Note the expression window in the middle of the properties. This is where the expression functions are typed or placed. Also note the list of functions in the bottom left of the window. Here all the expressions that are available are grouped and can be dragged and dropped into the expression window.

Once you're familiar with the syntax you'll be able to type directly into the expression window, but for now explore the function section a little, open some of the function sections using the plus (+) button and note that when you click on an actual expression a set of windows appear on the right hand side where you can input values. We'll cover all of this in more detail in later lessons, for now it's just good to be familiar with the expression window and have some context around the application of data types and expression functions.

The following slides depict common expression functions. Normally you would type these into the calculation stage properties window.

Note that these are quite similar to Microsoft Excel. If we use the first common expression as an example, consider the expression - `Left([the big dog],6)` what would the first expression produce?

The answer is the letter i. Well done if you got it! For those that need a hand, this syntax is telling us to look for the 6th letter from the left. Note that this is considering characters and includes spaces.

Try this one `Trim([the big dog])`

The trim function removes all white spaces or blank characters from the beginning and end of a string. Therefore, the answer here is "the big dog" with the blank characters removed from the start and the end of the string. Note that the blank characters in between the words remain because they are not at the beginning or the end of the sting.

Here are some more expression functions, and some more.

Remember, you can go into the calculation properties window at any time and review all the expression functions and review what is available to you. There are also explanations provided for each.