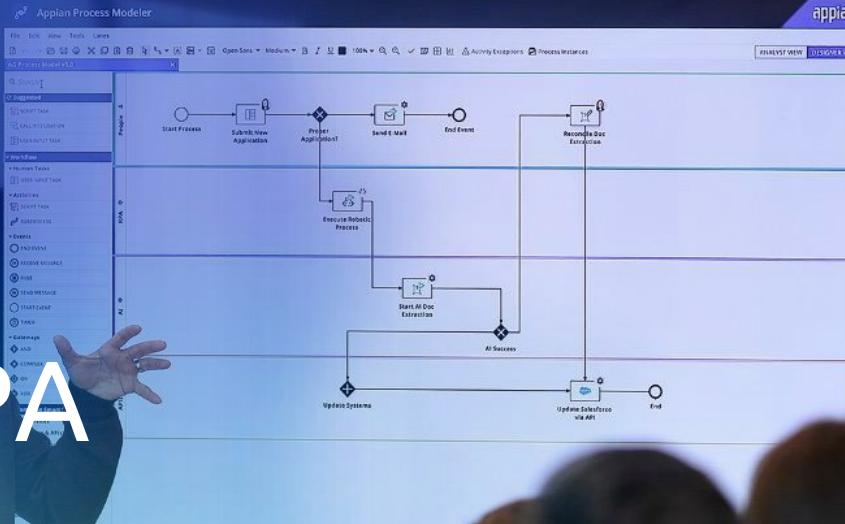
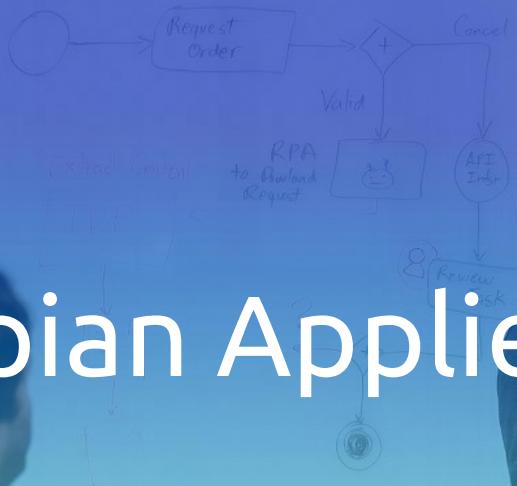


Appian Applied RPA

Randy Richeson

Senior Technical Instructor



Class Introduction

Class Expectations

- **Schedule:** 9:00 AM - 5:00 PM // Three Days, 1 hour for lunch, 10 - 15 minutes for breaks
- **Class Structure:** Lecture, Demos, Discussion, Exercises, Quizzes
- **Expectations:** Ask questions, Be attentive, Complete exercises

Course Objectives

- Identify the purpose and use case of Appian RPA robotic tasks
- Explain how to plan and estimate Appian RPA into applications
- Create robotic tasks and utilize them within an Appian application
- Identify common exception handling methods for Appian RPA



Training Agenda

- Introduction to Appian RPA
- Architecture
- Planning RPA Projects and Use Cases
- How to Estimate your RPA Project
- Requirements
- Agents and Robots
- Robotic Tasks
- Building Robotic Tasks with the Appian Task Recorder
- Create New Actions to Extract and Log Results
- Exception Handling
- Items Actions
- Executions, Testing and Debugging
- Windows Automation, Keyboard, Image Recognition and Operating System Actions
- Excel Actions
- Execute Robotic Tasks using Process Model RPA Smart Service
- Troubleshooting RPA
- Bonus: RPA with AI Skills
- Bonus: Service Accounts and API Keys
- Bonus: Connected System and Integration for Appian RPA

Course Completion Requirements

- Be present and engaged throughout training
- Complete all assigned exercises and quizzes
- Satisfy course objectives

A **Completion Certificate** will be issued when all requirements have been met.

Student Introductions

- Name
- Role or Position
- Experience with Appian RPA, RPA, Application Design, BPM, Agile Dev, Coding
- Topics of interest for the course
- Dream Vacation & Favorite Food

Academy Plus

Applied RPA Course

- Instructor Led Courses
- Secure
- Evergreen content
- Accessible from class environment
- Lessons with Practical Examples
- PDF Slide Deck
- Exercise Prompts
- Exercise Solutions
- Optional Bonus Lessons
- Optional Bonus Exercises
- Course Surveys
- Can be referenced after the class is over

<https://academy-plus.appiancloud.com/suite/sites/academy-plus>

Academy Plus Courses

Academy Plus

Lesson 1

Introduction to Appian RPA

Challenges We Hear



Drive operational efficiency



Streamline compliance



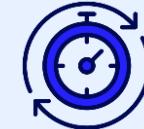
Unleash digital innovation



Improve customer/
employee
experience

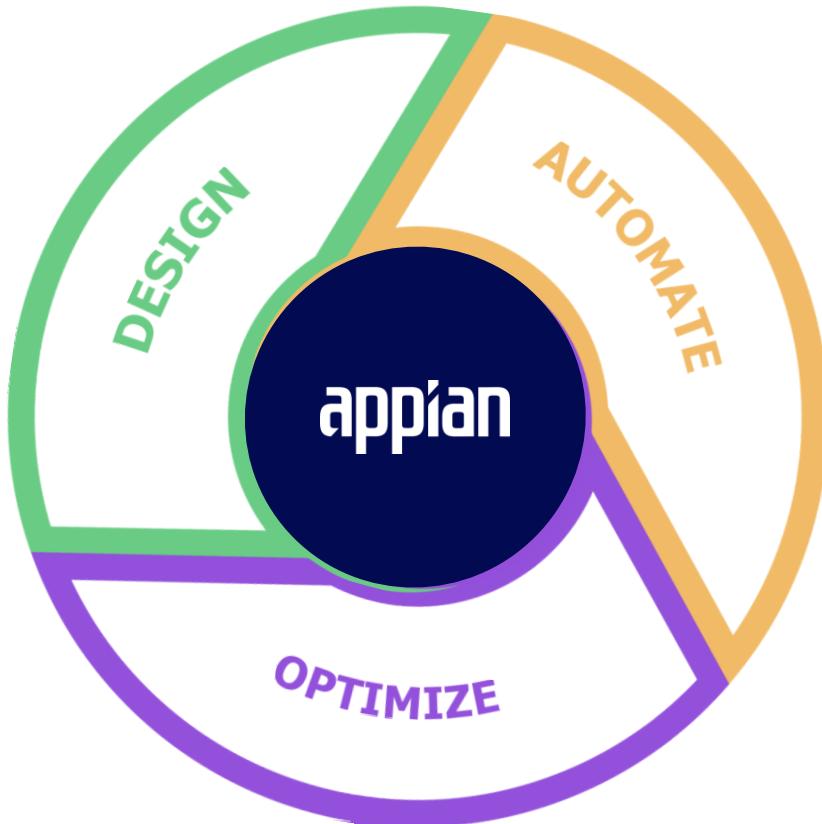


Modernize legacy
systems

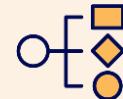


Accelerate
time-to-market

Deliver End-to-End Process Automation



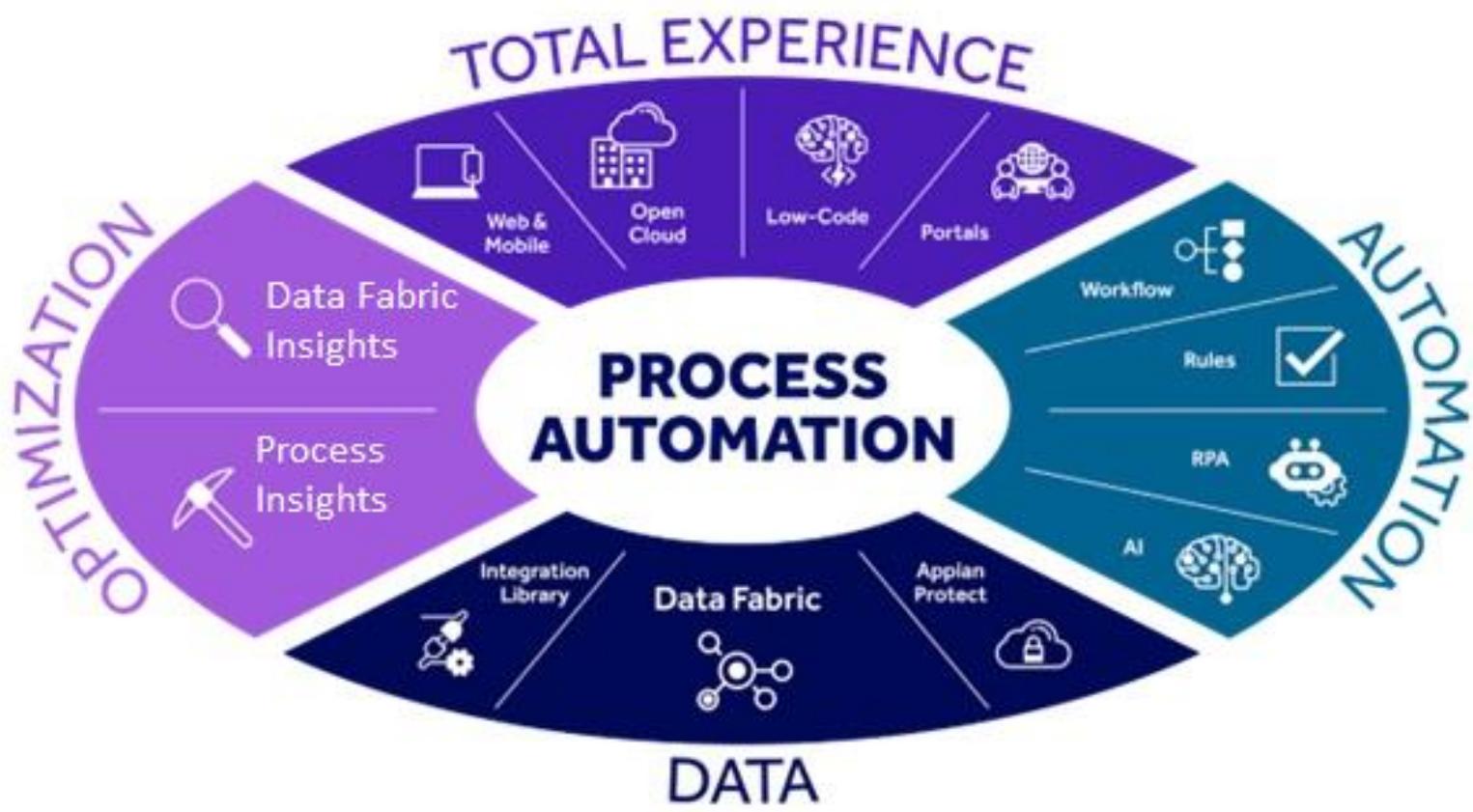
Unleash digital innovation with
Low-code Design.



Automate end-to-end processes
with a **Unified Platform.**



Optimize business efficiency
with **Process Mining.**



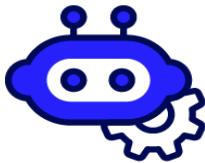


- **9x faster** customer service
- **40%** cost savings
- **22 systems** consolidated



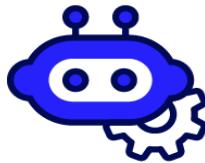
What is Automation?

Automation describes the shift of tasks from humans to technology applications that are better suited to handle repetitive, time-consuming work.



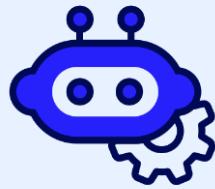
What is RPA?

Robotic Process Automation (RPA) helps automate repetitive tasks of business processes thru software programming.



Robotic Process Automation

RPA

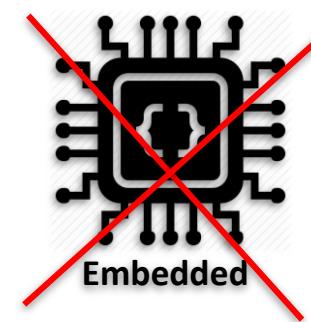
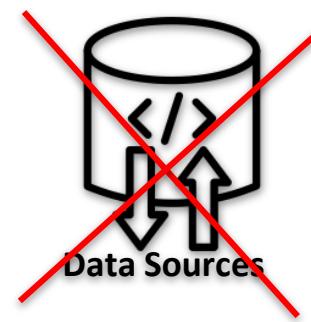


Automate repetitive tasks



Integrate with apps
without APIs

RPA Use Cases



RPA Use Case

Human as the Integrator



System 1



System 2

RPA Use Case

Human as the Integrator



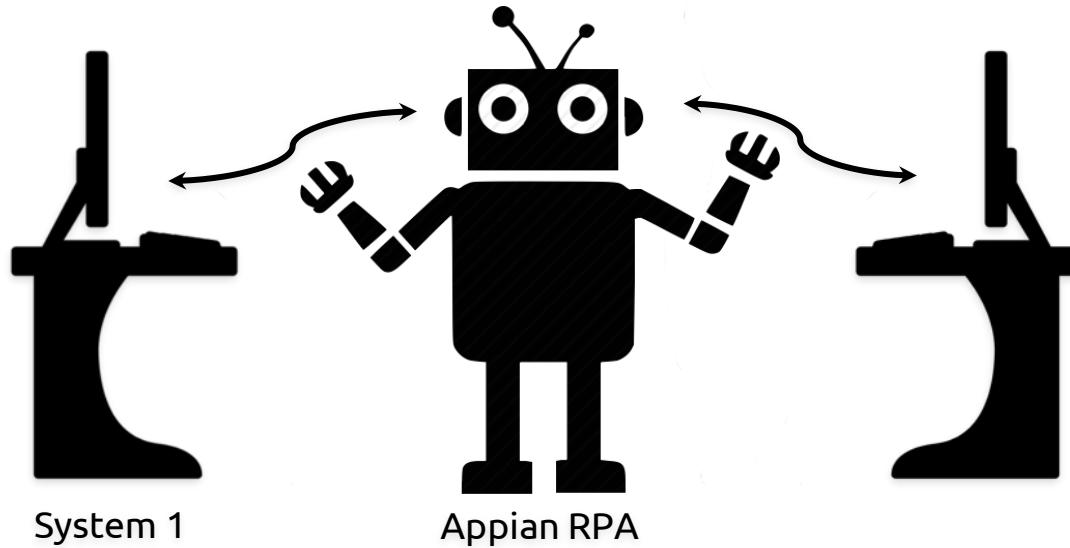
System 1



System 2

RPA Solution

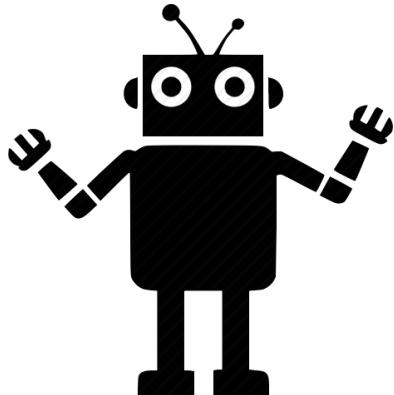
Robotic Task as the Integrator



RPA Solution

Robotic Tasks

To do every Friday evening:



Appian RPA

- 1) Open the inventory system
- 2) Find all incomplete transactions from the current week
- 3) Copy and paste their details into an Excel sheet
- 4) Find all transactions above our threshold
- 5) Copy and paste their details into a new tab of this Excel sheet
- 6) Send this Excel sheet to the inventory specialists
- 7) Find all items that are below a threshold count
- 8) For each of these items initiate on order process

Managing Multiple RPA Products

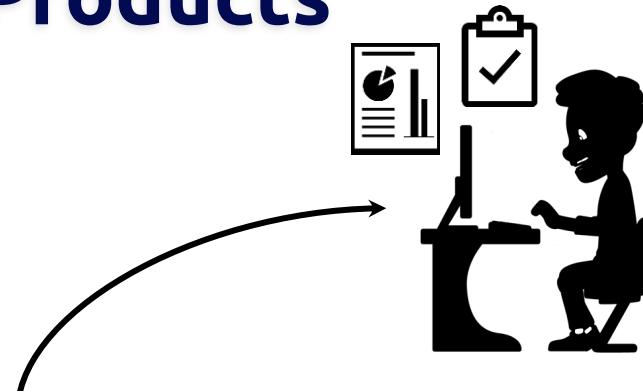
Appian RPA



blueprism®

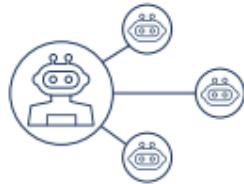


appian



Appian RPA

Appian RPA is a cloud-native technology for robotic task automation that **increases efficiency, reduces errors, and lowers costs**. Appian RPA is part of Appian's full-stack automation, which combines RPA, workflow, decision rules, AI, and case management, giving you the right technology for the right use case.



Connect bots
into any broader
business process



Deploy and
monitor bots
from any device



Bring humans into
the loop to handle
robot exceptions



Analyze value
and impact of all
bot processes

Powerful Governance

Secure Cloud RPA

Dynamic Exception Handling

Low Code or Robust Java Development



Appian RPA



Build robotic tasks fast
with
low-code design



Scale with centrally
managed and unified
automation



Deploy without limits
with unlimited bots
across environments

Appian RPA Key Capabilities



Low-code RPA



Powerful governance



Secure Cloud



Dynamic exception
handling



Deployment flexibility



Detailed audit trails



Intelligence image
recognition

Designer

Web-based, Low-code with Chrome

How to configure a robotic task [TEST](#)

Search actions

Setup

Main

- Set item
 - Set number of items
 - Set next item
- Nasdaq Section
 - Log start of NASDAQ section
 - Open browser
 - Search Symbol
 - Search Failed?
 - Log end of NASDAQ section
- Set item result

Cleanup

Variables

Name	Parameter	Multiple
businessEx		
symbol		✓
companyInfo		
searchSuccess		
colorGreen		

Action Configuration

Open browser

Display Name: Open browser

Browser Type: Chrome

URL: https://www.nasdaq.com/

AFTER COMPLETION

Wait before executing next action (seconds): 1

Take a screenshot



RPA Console

Web-based, Low-code with Chrome

Search actions TEST

How to configure a robotic task [?](#)

Setup

Main

- Set Item
 - Set number of items
 - Set next item
- Nasdaq Section
 - Log start of NASDAQ section
 - Open browser
 - Search Symbol
 - Search Failed?
 - Log end of NASDAQ section
- Set item result

Cleanup

- Close Firefox

Variables

Name	Parameter	Multiple
businessEx		
symbol		✓
searchSuccess		
companyInfo		
colorGreen		

Action Configuration

Open browser

Display Name
Open browser

CONFIGURATION

Browser Type
Chrome

URL abc https://www.nasdaq.com/

Set download directory

Disable notifications

AFTER COMPLETION

Wait before executing next action (seconds) abc 1

Take a screenshot



Designer

Web-based, Low-code Design with Firefox

How to configure a robotic task [TEST](#)

Search actions

Setup

Main

- Set Item
 - Set number of items
 - Set next item
- Nasdaq Section
 - Log start of NASDAQ section
 - Open browser **Open browser**
 - Search Symbol
 - Search Failed?
 - Log end of NASDAQ section
- Set item result

Cleanup

- Close Firefox

Variables

Name	Parameter	Multiple
businessEx		
symbol	✓	
searchSuccess		
companyInfo		
colorGreen		

Action Configuration

Open browser **Open browser**

Display Name: Open browser

CONFIGURATION

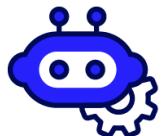
Browser Type: Firefox

URL: abc https://www.nasdaq.com/

AFTER COMPLETION

Wait before executing next action (seconds): abc 1

Take a screenshot



RPA Console

Web-based, Low-code Design with Firefox

Search actions TEST

How to configure a robotic task [?](#)

Variables

Name	Parameter	Multiple
businessEx		
symbol		✓
searchSuccess		
companyInfo		
colorGreen		

Setup

Main

- Set Item
 - Set number of items
 - Set next item
- Nasdaq Section
 - Log start of NASDAQ section
 - Open browser
 - Search Symbol
 - Search Failed?
 - Log end of NASDAQ section
- Set item result

Cleanup

- Close Firefox

Action Configuration

Open browser

Display Name: Open browser

Configuration

Browser Type: Firefox

URL: abc <https://www.nasdaq.com/>

Additional Options

- Set download directory
- Disable notifications
- AFTER COMPLETION
 - Wait before executing next action (seconds): abc 1
 - Take a screenshot



Web-based, Low-code

Previous Designer 8.0

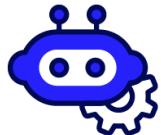
The screenshot shows the Appian RPA Designer 8.0 interface. On the left, a sidebar menu includes options like Dashboard, Users, Robotic processes (which is selected), Resources, Schedule, Monitoring, Settings, Statistics, and Help. The main area is divided into two sections: 'Variables' and 'Workflow'.

Variables: A table listing variables with columns: Name, Description, Type, Initial value, Parameter?, Required?, and Multiple?. The variables listed are:

Name	Description	Type	Initial value	Parameter?	Required?	Multiple?
submitBtn		Text	lookup_vin_now_button	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
vehicleinfo		Text	/html/body/div[6]/div/div[2]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
vin		Text	3D6WH48A67G805881	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
website		Text	https://www.clearvin.com/	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Workflow: A BPMN-style diagram titled 'Main section'. It starts with a 'Start' event, followed by a sequence of activities: 'Open VIN Website', 'Search VIN', 'Save VIN Information', and a decision diamond labeled 'More?'. If the answer is 'No', the process ends. If the answer is 'Yes', it loops back to the 'Search VIN' activity.

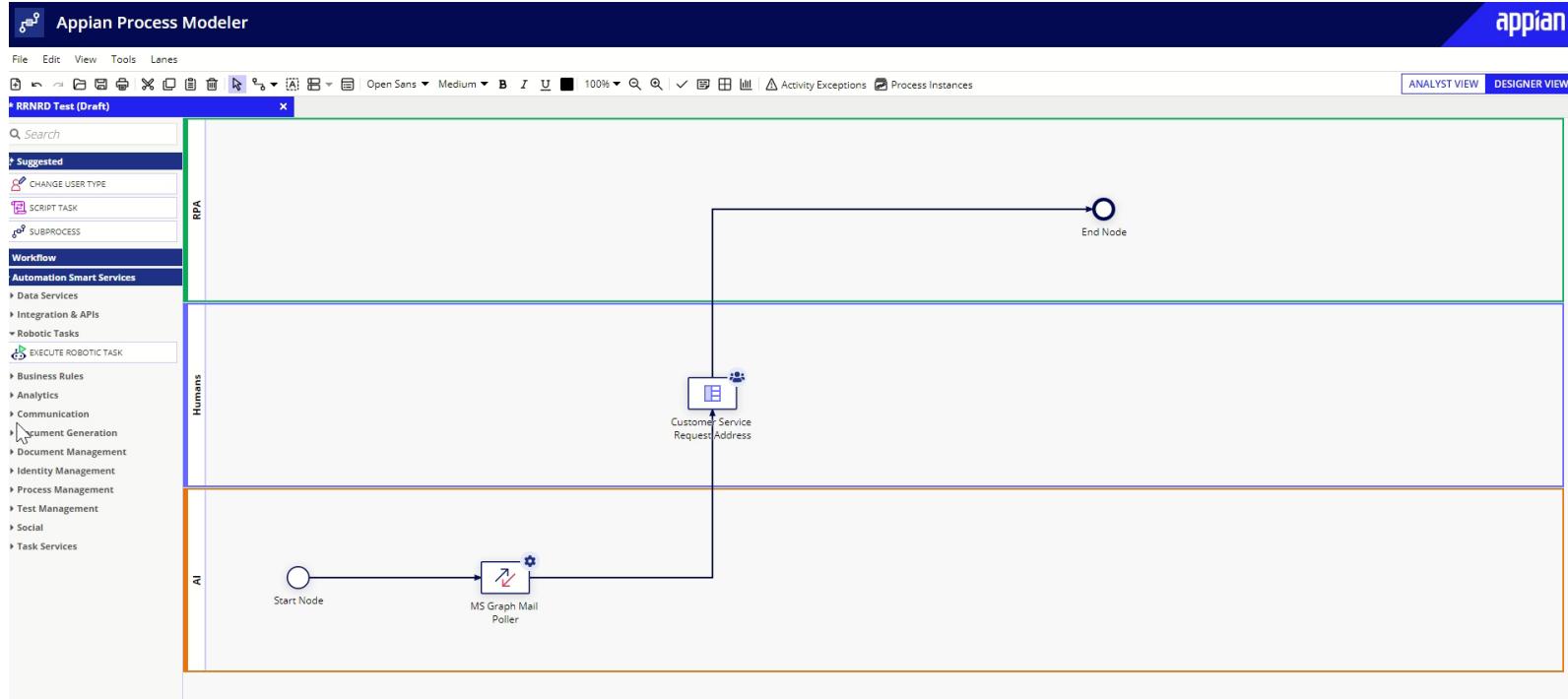
```
graph LR; Start((Start)) --> Open[Open VIN Website]; Open --> Search[Search VIN]; Search --> Save[Save VIN Information]; Save --> More{More?}; More -- No --> End((End)); More -- Yes --> Search;
```



We've come a long way!

Add Robotic Tasks

Any Business Process



Operations Console



Operations Console ▾



Robots

Robot Pools

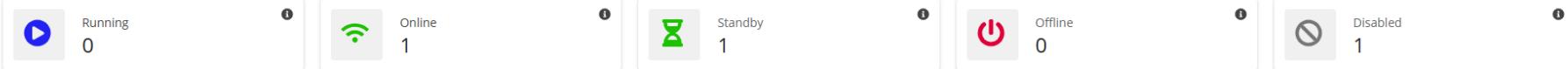
Robots

Search Robots

Status

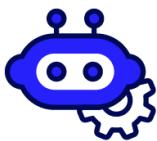
Select Status

RESET



CREATE SECURITY RESTART DISABLE ENABLE DELETE

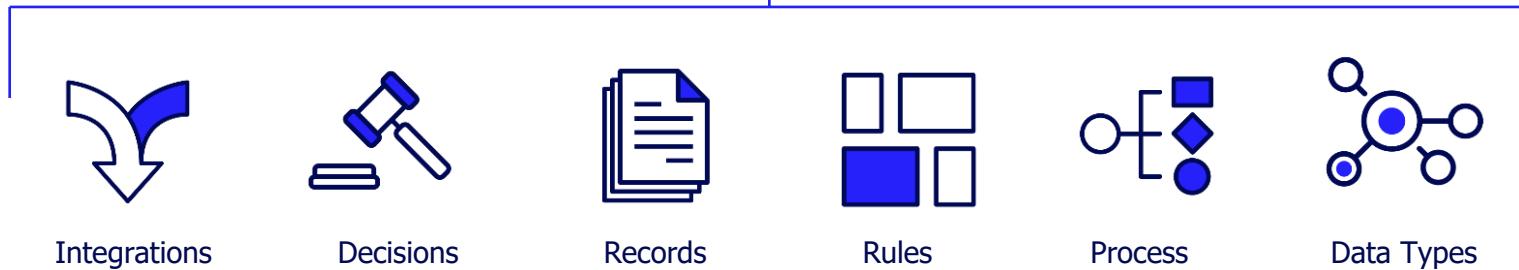
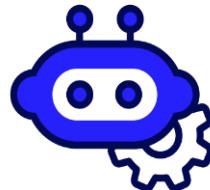
<input type="checkbox"/>	Name	Status	Memory Used <small>?</small>	Disk Space Used <small>?</small>	Robotic Task	Started On
<input type="checkbox"/>	rr-robot	ONLINE	1%	6%		
<input type="checkbox"/>	rr-robot-auto	STANDBY	0%	0%		
<input type="checkbox"/>	rr-robot-linux	DISABLED	6%	33%		



appian

Robotic Tasks

Have Access to the Full Power of Appian



Integrations

Decisions

Records

Rules

Process

Data Types

Appian RPA Training Credentials

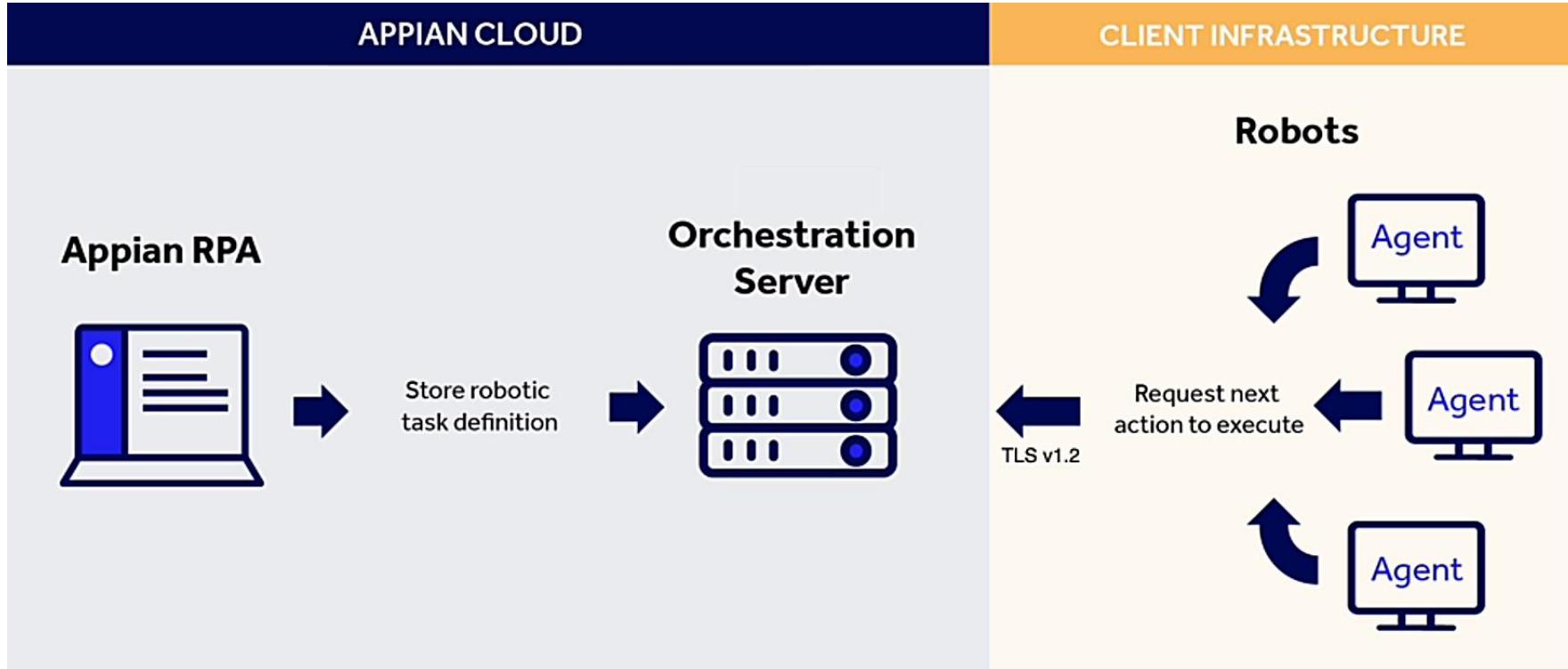
- Cloud URL: Your instructor will provide this.
- Username: Your Email Address
 - Example: randy.richeson@appian.com
- Password: Appian2024



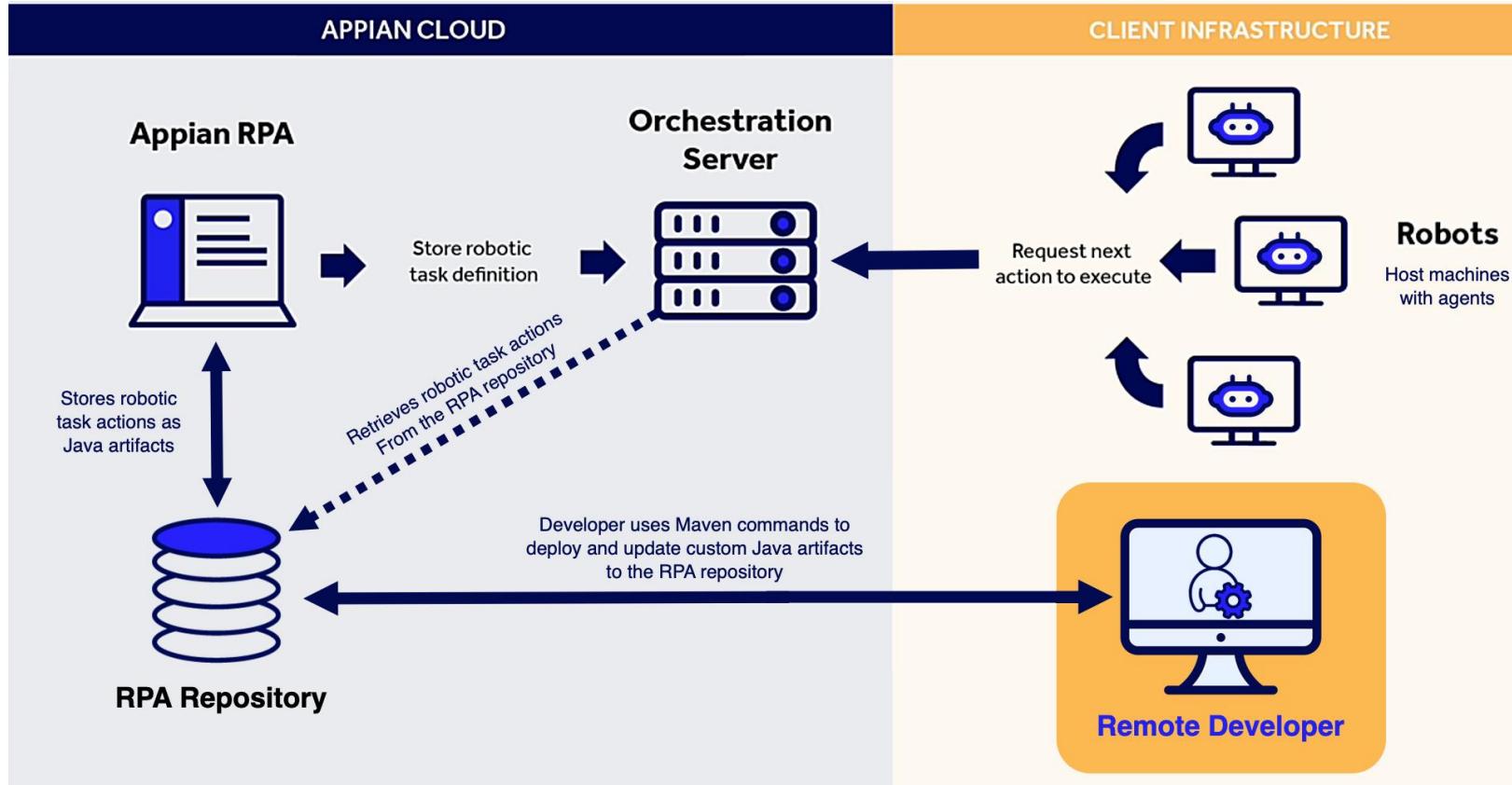
Lesson 2

Architecture

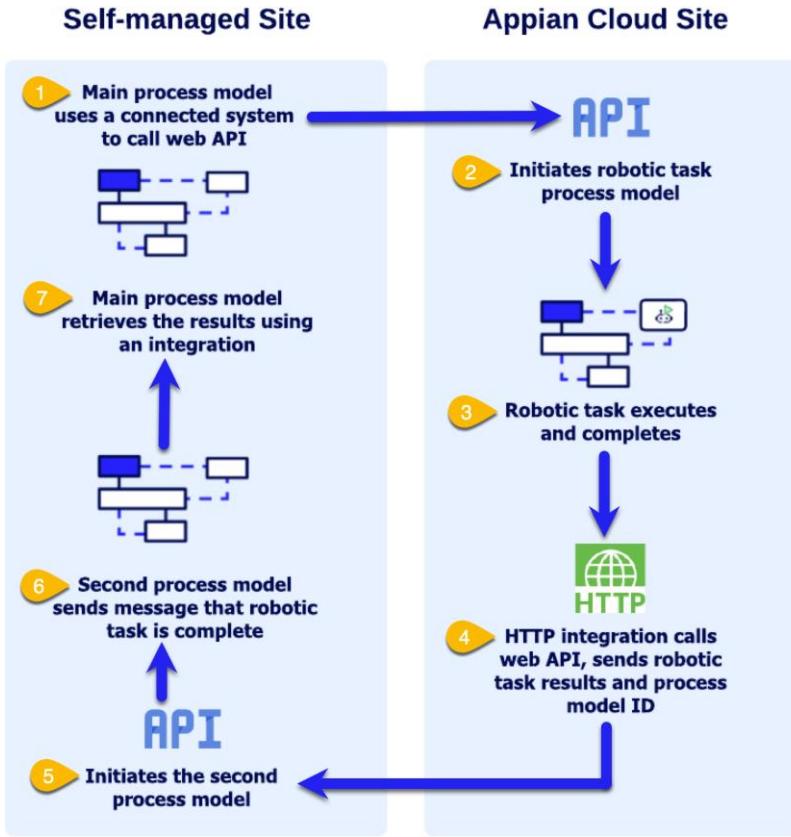
How does Appian RPA work?



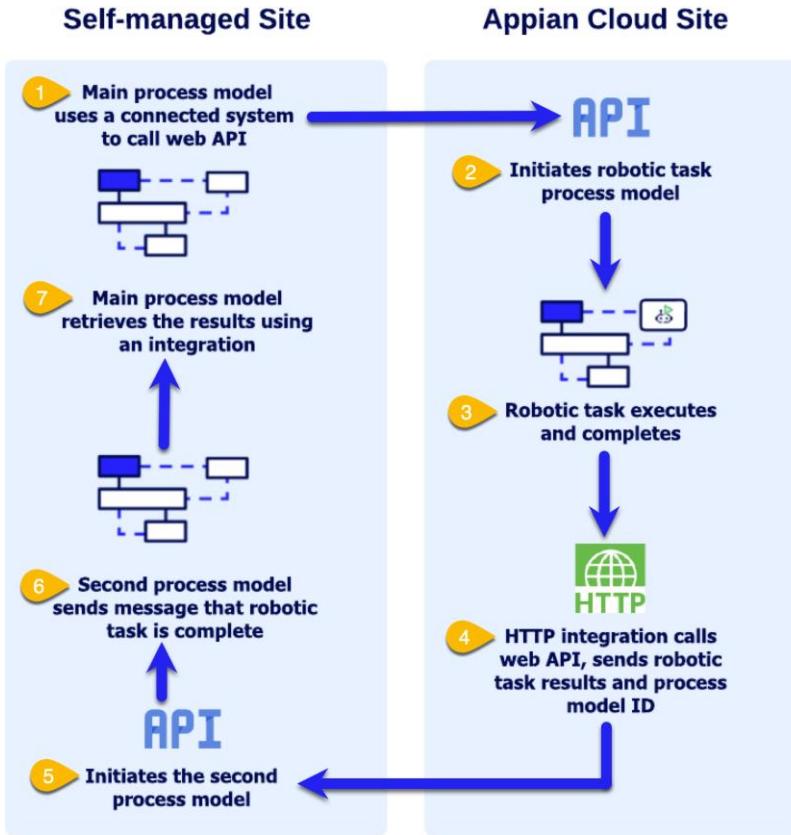
Custom Code Development



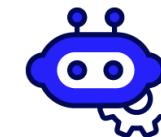
Hybrid Configuration



Hybrid Configuration

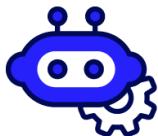


Self-managed customers can now self-host Appian RPA as a containerized application running on Kubernetes



Appian RPA Roles

- **Administrator** has access to every screen in the console and can modify all permissions. Can create new robotic tasks and have access to every setting available in the robotic task configuration. Can set up and run all available robotic tasks.
- **Developer** can build robotic tasks in the console, including modifying permissions for the robotic tasks and robots they can access. Have full access to the settings in the robotic task configuration. Cannot grant permissions to users or change some console settings for things like repositories.
- **Operations Manager** have limited access and actions in the Appian RPA Console. Cannot create or edit robotic tasks, or users. Can execute robotic tasks, monitor the execution, and view results. Can also create robots using the Operations Console. This role serves as operational support through routine troubleshooting.



Appian Group-Based Rolemaps

- Administrator
- Editor
- Viewer
- Initiator
- Deny

Robotic Task Security



Tip: To start a robotic task, basic users must have at least initiator rights. [Learn more](#)

Name

NRD_Example

User or Group	Permission Level
Default (All Other Users)	No Access
NRD Administrators	Administrator
NRD Users	Viewer
+ Add Users or Groups	

CANCEL

SAVE CHANGES

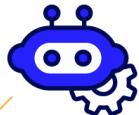


Lesson 3

Planning RPA Projects and Use Cases

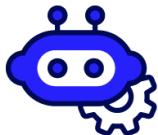
What is an Excellent Fit for Robotic Tasks?

- Repetitive: Tasks repeat a predefined workflow on the interface level
- **High volume:** Tasks with high volumes that increase your ROI
- Rule-based: Tasks that must be coded using rules
- Scheduled: Tasks are executed at regular intervals
- APIs: Tasks that are too costly and complicated to automate with APIs



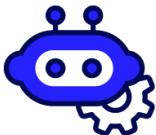
Common Business Use Cases

- Use Appian RPA as a Temporary Solution to Go Live on Time
- Appian RPA vs. Out-Of-Scope Integrations
- Use Existing Business Logic With Appian RPA
- Showing ROI by Using Appian on a Trial Basis
- Convert Documents to PDF Files Using Appian RPA
- Use Appian RPA as Access Proxies



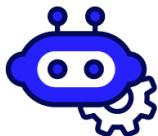
Non-RPA Use Cases

- Simple REST integration and Web API are more appropriate
- Tasks that require dynamic judgement
- Tasks that require highly trained human skills
- Document classification
- Email classification
- Extracting data from PDFs

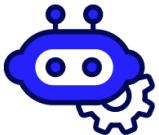


Good First Proposal Example

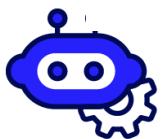
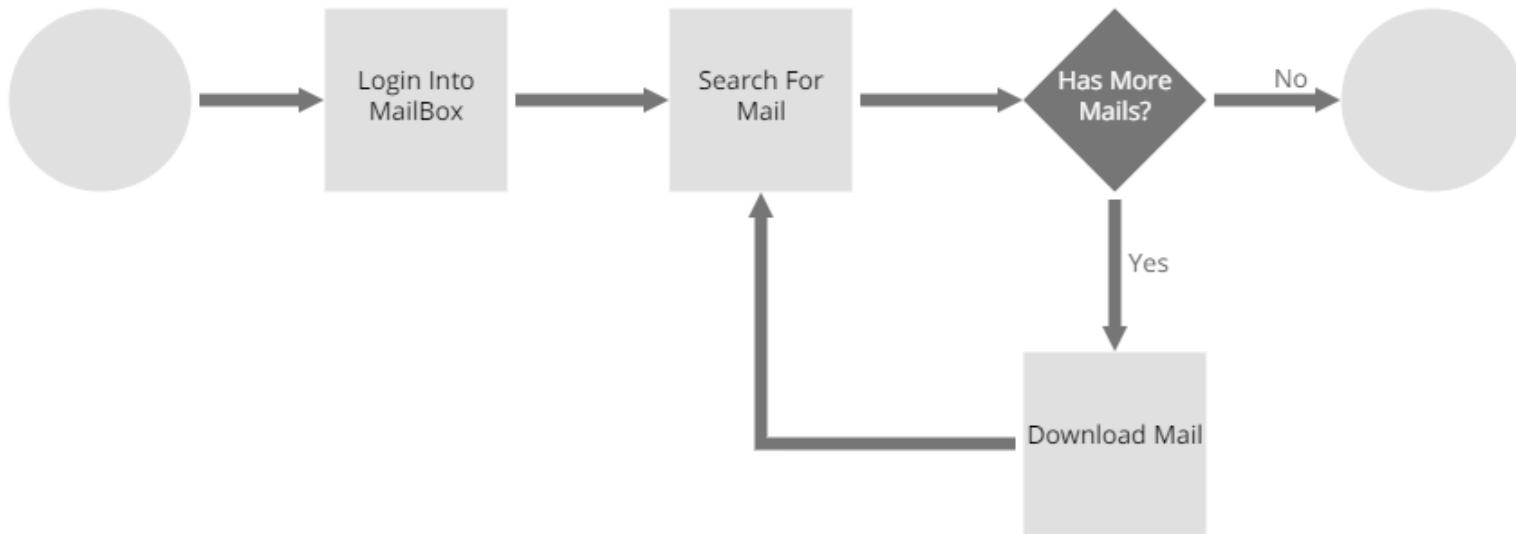
- Purpose
- Scope of activity
- SLA and schedules to carry out execution
- Systems involved
- Credentials
- Type of execution
- Input
- Output



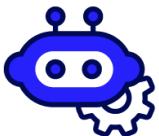
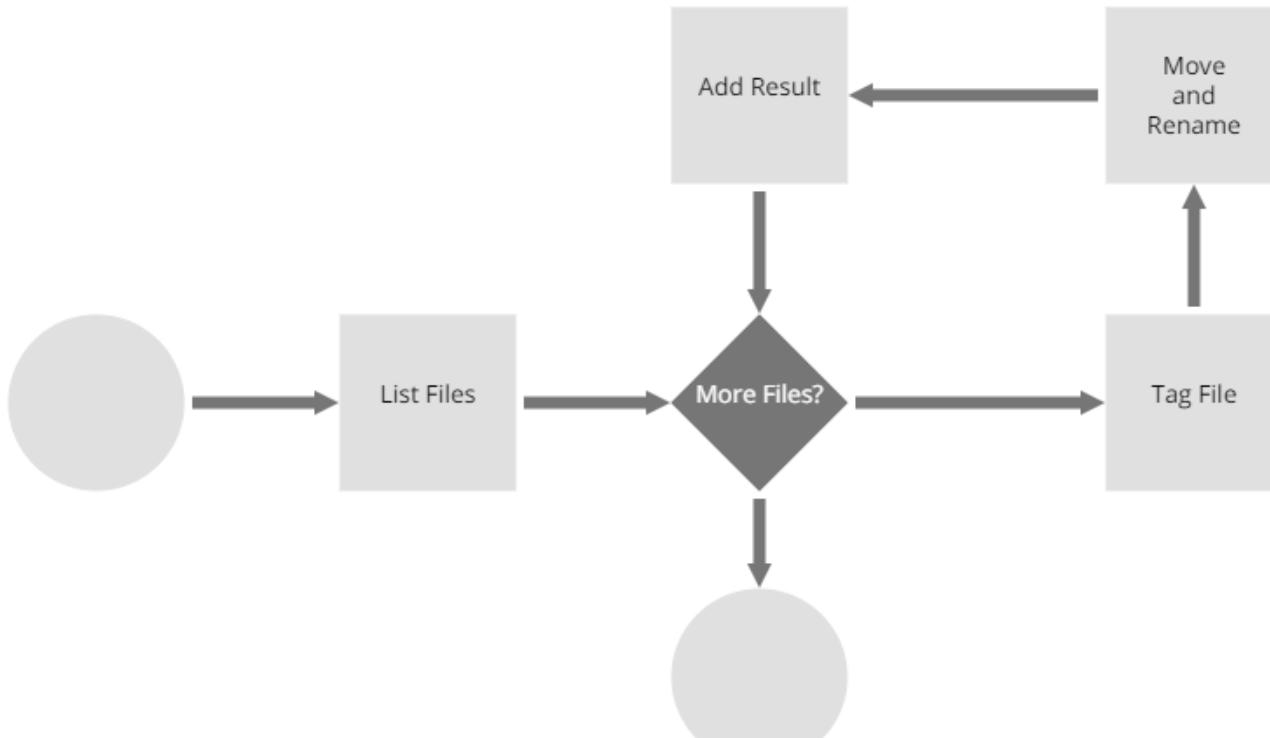
Workflow and Process



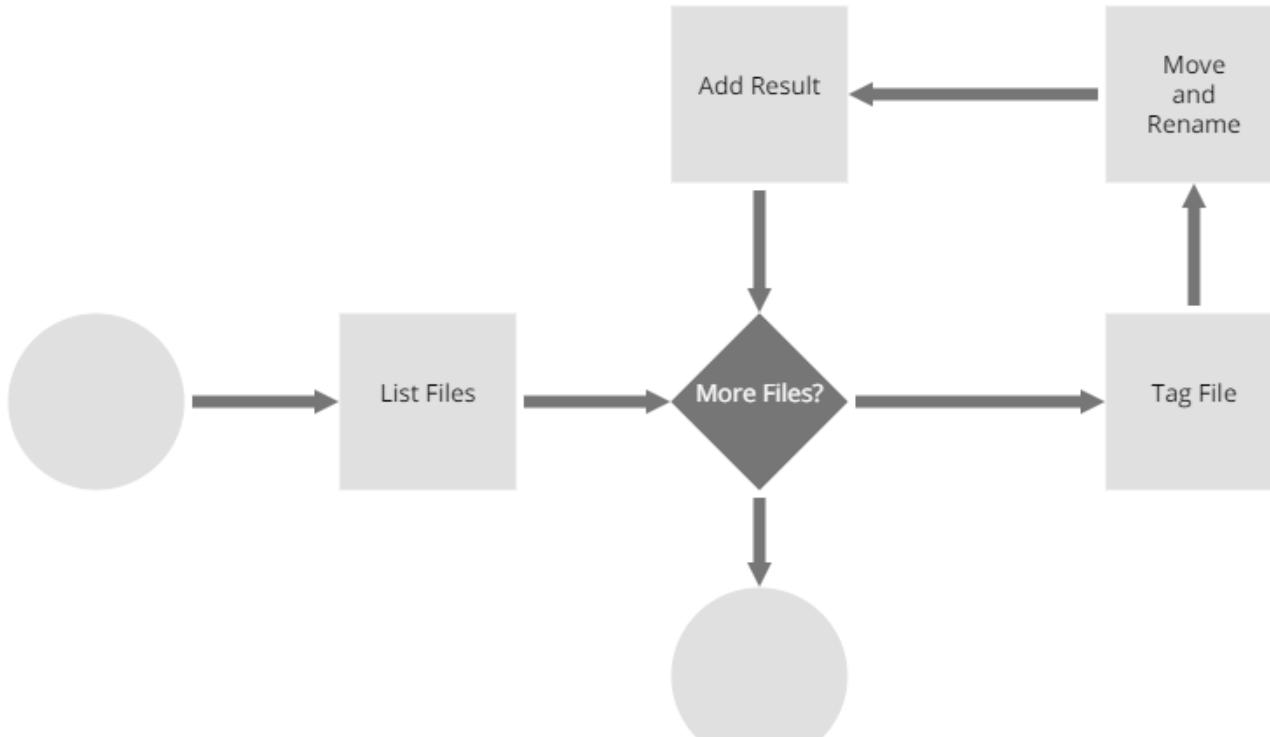
Download Files Workflow



Sort Files Workflow



Sort Files Workflow



Appian RPA Use Cases



Assets
Management



Real Estate
Payables



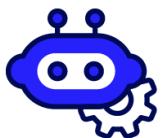
Issuing of
Credit Cards



Insurance
Supplier
Payments



Banking On-
Boarding



Appian AI Copilot

The screenshot shows the Appian AI Copilot interface. At the top, there's a navigation bar with icons for back, forward, and search, followed by the "appian" logo. Below the navigation bar is a header titled "Compose your application plan" with sub-instructions "Outline requirements, organize your ideas, and lay out the plan for your application". There are two main activity cards: "Retrieve Stock Information" and "Input Stock Data into Windows Application". Each card has a brief description and a list of steps. To the right of these cards is a sidebar titled "AI Copilot" which lists five AI functions with sample questions. A red arrow points from the text below to the "Input Stock Data into Windows Application" card.

RRNRD Nasdaq RPA Demo

Search objects

AI Copilot

Compose your application plan
Outline requirements, organize your ideas, and lay out the plan for your application

+ ADD ACTIVITY MANAGE PERSONAS

Retrieve Stock Information

This activity uses an RPA bot to extract stock data from th...

- Receive Stock Ticker Input
- Retrieve Stock Data from Nasdaq

ADD ▾

Input Stock Data into Windows Application

This activity uses the RPA bot to input the retrieved stock ...

- Navigate to Windows Application
- Input Stock Data

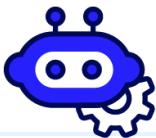
ADD ▾

What can you do with AI Copilot?

- Edit the application diagram
"Can you add a review step to the end of the process?"
- Generate application diagram ideas
"Can you suggest more actions users might take before the review step?"
- Ask questions about your application
"What is this application's purpose?"
- Request automation suggestions
"What steps in this app can I automate?"

Start typing...

The Appian AI Copilot can help plan your use case in 24.4 !



Lesson 4

How to Estimate RPA Applications

How to Estimate RPA Applications

Gather Information

- Learn As Much Possible About the Process
- Ask About Every Process Detail
- Inquire about Important Automation Characteristics
- Find Out about Each System
- Collect Every Document Possible for the Process while Corroborating it with the Client
- Consider More Subjective Parameters

How to Estimate RPA Applications

Appian RPA Project Estimation Guide

This document describes the most important factors when estimating the level of effort for an Appian RPA project.

This document is divided into two parts: 1) how to assess the complexity of a development, and 2) factors to be taken into account that may affect the calculation of this estimate.

Development complexity	Impact to estimation
Complexity of the application to automate	High
Conditions, decisions and exceptions	High
Number of Windows	Medium
Number of fields	Low
Tips/risks in estimating	Impact to estimation
Application Stability	High
Level of detail	High
Availability of data and environments	Medium
Use of subtasks	Low
Application Reliability	Low

Estimating

Nasdaq Search Use Case

appian



Builder

This site is temporarily unavailable due to scheduled maintenance.
Customers will be able to access the site again shortly.



What changes?

yahoo!finance

Nasdaq

Google Chrome

Chrome is up to date
Version 117.0.5938.63 (Official Build) (64-bit)

117.0.5938.62 | r1181205

Nasdaq

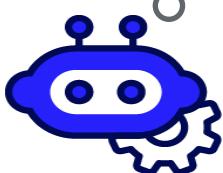
Audience Survey

User feedback will help us improve the Nasdaq user experience to better meet your needs.

To participate, you will have the opportunity to win one of three \$100 gift cards valued at \$300 each.

Start Survey

Issuer Name	Symbol	Reason	Status	Effective Date
9 Meters Biopharma, Inc.	NMTR	Regulatory/Non Compliance	Suspended	7/26/2023
Amrys, Inc.	AMRS	Regulatory/Non Compliance	Suspended	8/2/2023
AppHarvest, Inc.	APPH	Regulatory/Non Compliance	Suspended	8/2/2023



When?

Could it break?

Lesson 5

Requirements

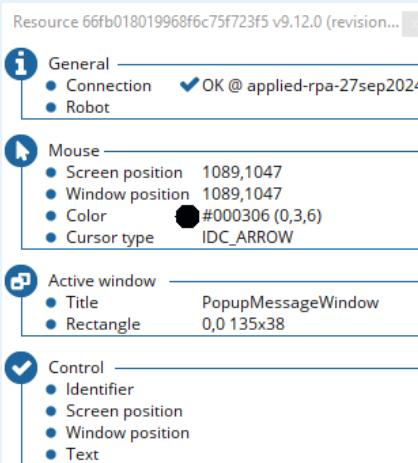
Class Exercise Requirements

- Appian Cloud Environment with Appian RPA
- A Developer Machine
- Google Chrome
- Host Machine

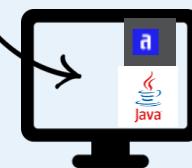
Lesson 6

Agents and Robots

RPA Agent



Appian RPA
Agent



Robot



Robot



Robot

Client Infrastructure

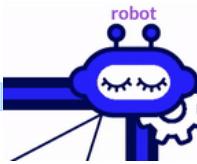


All agents are automatically pre-signed

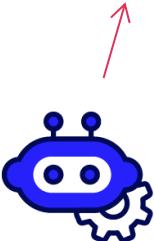
RPA Agent

This PC > New Volume (D:) > RPA_Agent > Appian RPA

Name	Date modified	Type	Size
jidoka-client	2/19/2024 6:58 PM	Text Document	3,998 KB
AppianRPA	2/19/2024 5:25 PM	PROPERTIES File	1 KB
rpa-uninstaller	2/19/2024 9:25 AM	Application	68 KB
AppianRPAagent	2/12/2024 12:01 PM	Application	75,138 KB



The RPA autologin service now automatically updates to the latest version when connecting to the newer version of Appian RPA in 9.13.

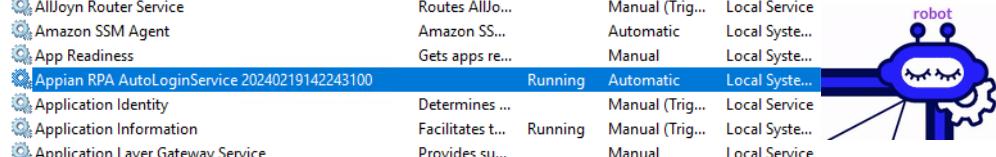


Start the Agent by quickly launching the *AppianRPAagent.exe*

or

Start it as a Windows service.

Services (Local)					
Name	Description	Status	Startup Type	Log On As	
Appian RPA AutoLoginService 20240219142243100	Provides Us...	Disabled	Local Syste...		
Stop the service	Routes AllJo...	Manual (Trig...	Local Service		
Restart the service	Amazon SS...	Automatic	Local Syste...		
	App Readiness	Gets apps re...	Manual	Local Syste...	
	Appian RPA AutoLoginService 20240219142243100	Running	Automatic	Local Syste...	
	ActiveX Installer (AxInstSV)	Determines ...	Manual (Trig...	Local Service	
	AllJoyn Router Service	Facilitates t...	Manual (Trig...	Local Syste...	
	Amazon SSM Agent	Provides su...	Manual	Local Service	
	App Readiness				

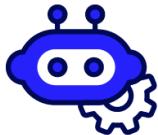


Lesson 7

Robotic Tasks

What is a Robotic Task?

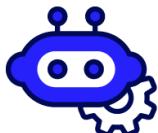
- A scripted program designed to automate tasks and steps in a business application
- Built to interact with user interfaces
- Perform steps that a human might otherwise need to do
- Consists of Low-code and/or Java code, and a workflow



Robotic Task

Notepad Example

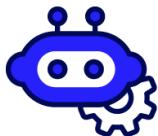
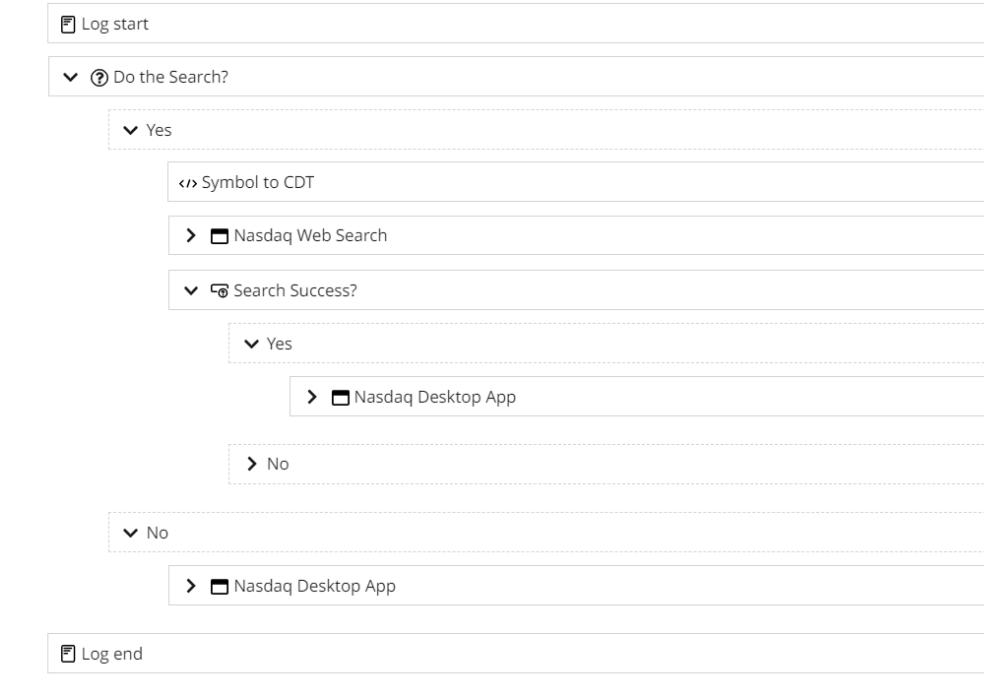
▼ Main



This is an action for a loop!

Robotic Task

Nasdaq Example



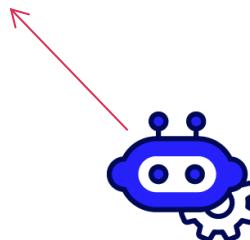
Basic Steps to Create a Robotic Task

- Add a robot pool
- Complete the details for Name and Permissions matching the Robot permissions
- Ensure the version of Chrome matches the ChromeDriver in the Support files.
- Add Robotic task variables
- Use Appian Task Recorder to Generate the Workflow
- Create New Actions to extract results
- Update the Robotic task variables and the Workflow



Designer Example

The screenshot shows the Appian Designer interface. On the left is a palette with various actions categorized under 'BROWSER'. The actions listed include: CLOSE BROWSER, GET ATTRIBUTE, GET BROWSER ALERT TEXT, GET TABLE VALUES, INTERACT WITH BROWSER ALERT, INTERACT WITH ELEMENT, NAVIGATE TO URL, OPEN BROWSER, RETURN TAB VALUE, RETURN WINDOW TITLE, SELECT FRAME, SET TIMEOUT IN SECONDS, and SWITCH TAB OR BROWSER. The 'CLOSE BROWSER' action is highlighted with a pink border. In the main workspace, there are three sections: 'Setup', 'Main', and 'Clean up'. The 'Main' section contains a single task: 'Open browser'. The 'Clean up' section contains a task: 'Close browser'. A blue box highlights the 'Open browser' task. At the top right of the workspace, there is a 'TEST' button. To the right of the workspace, there is a link 'How to configure a robotic task'.



The palette helps build robotic tasks fast !

Designer Example

Excel Actions

The screenshot shows the Appian Designer interface for configuring a robotic task. On the left is a palette containing a list of actions categorized under "EXCEL: LICENSE REQUIRED". A blue box highlights the "New Excel 9.5 Actions" section, which includes four actions: "Find value (license required)", "Clear Data Filters (license required)", "Clear Pivot Table Filters (license required)", and "Close workbook (license required)". The main configuration area shows a "Main" section with three actions: "List the contents of a folder", "Upload document", and "Evaluate expression". Below the main section is a "Clean up" section.

Palette

Search Actions...

EXCEL: LICENSE REQUIRED

- CLEAR DATA FILTERS
- CLEAR PIVOT TABLE FILTERS
- CLOSE WORKBOOK
- COPY AND PASTE
- CREATE WORKSHEET
- DELETE FROM ROW OR COLUMN
- DELETE WORKSHEET
- FILTER DATA
- FILTER PIVOT TABLE
- FIND RANGE
- FIND VALUE
- FORMAT CELLS
- GET VALUE
- GET WORKSHEET NAMES
- INSERT ROW OR COLUMN
- OPEN OR CREATE WORKBOOK
- REFRESH DATA
- RUN MACRO
- SAVE WORKBOOK AS
- SELECT WORKSHEET
- SORT DATA
- SWITCH WORKBOOK
- WRITE INTO WORKSHEET

Search actions

How to configure a robotic task TEST

Setup

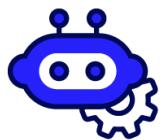
Main

- List the contents of a folder
- Upload document
- </> Evaluate expression

New Excel 9.5 Actions

- Find value (license required)
- Clear Data Filters (license required)
- Clear Pivot Table Filters (license required)
- Close workbook (license required)

Clean up



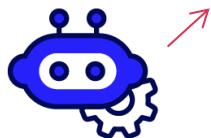
Excel Actions !

Designer Example

Versioning

Versions

Created By		From	To	
		mm/dd/yyyy	mm/dd/yyyy	Clear Filters
Version	Name	Description	Created	
Latest	RRNRD_NasdaqWebSearch	Robotic task that performs a lookup and captures data ...	7/11/2024 7:14 PM by Randy Richeson	
1	RRNRD_NasdaqWebSearch	Robotic task that performs a lookup and captures data ...	7/11/2024 6:59 PM by Randy Richeson	

[CLOSE](#)

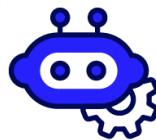
Robotic tasks are versioned!

AppMarket Example

WINDOWSTOOLSLIBRARY_V1:V1.0.0

- ⚡ WINL GET ENVIRONMENT VARIA...
- ⚡ WINL GET SYSTEM PROPERTY
- ⚡ WINL GET SCREEN RESOLUTION

New actions can quickly be deployed from the AppMarket!



ACTION CONFIGURATION
WinL Get Environment Variable

Display Name: WinL Get Environment Variable

Configuration:
Name: abc TMP
 Fail if variable does not exist

Outputs:
Operator: is stored as
Target: tmpDir

AFTER COMPLETION:
 Wait before executing next action (seconds)
 Take a screenshot

ACTION CONFIGURATION
WinL Get Screen Resolution

Display Name: WinL Get Screen Resolution

Configuration:
Operator: is stored as
Target: Select a variable

AFTER COMPLETION:
 Wait before executing next action (seconds)
 Take a screenshot

ACTION CONFIGURATION
WinL Get System Property

Display Name: WinL Get System Property

Configuration:
Property: User Name

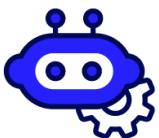
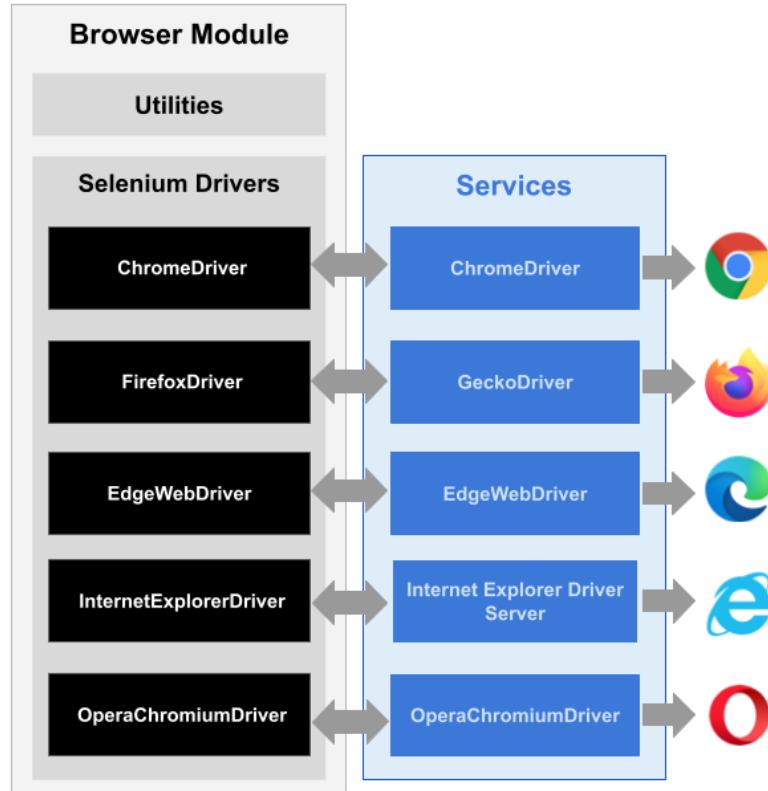
Outputs:
Operator: is stored as
Target: Select a variable

AFTER COMPLETION:
 Wait before executing next action (seconds)
 Take a screenshot

Lesson 8

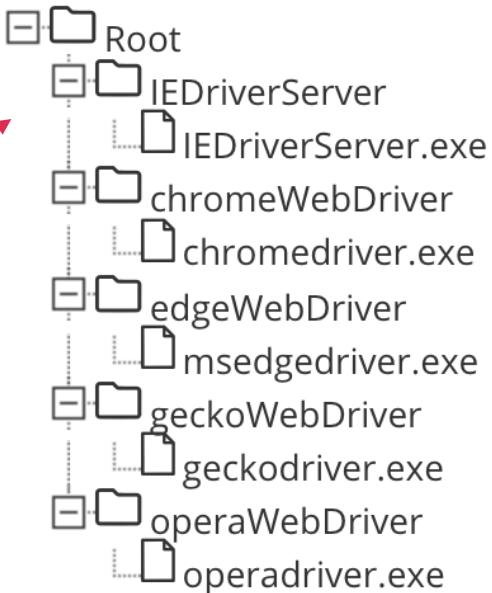
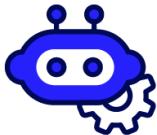
Building Robotic Tasks with the Appian Task Recorder and Browser Actions

Browser Module Architecture



Browser Module Support File Structure

Driver paths for Windows and Mac are case insensitive.

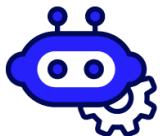


Task Recorder: Start recording

Start Task Recorder

Robot

rr-robot



CANCEL

OK

Appian Task Recorder: Add Group

Appian Task Recorder
applied-rpa-10may2024-curdev.appiancl...

- 1 Open browser
- 2 Click on onetrust-accept-btn-handler
- 3 Update value in q
- 4 Click
- 5 Get Is Enabled?

Interact with
Css select: nsdq-quote-he
1 element matches this selector

Actions
Get attribute

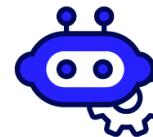
Attribute
Is Enabled?

Attribute value
true

Save into
Search variables

Nasdaq site

Yahoo Finance site



Appian Task Recorder
applied-rpa-10may2024-curdev.appiancl...

- 1 Open browser
- 2 Click
- 3 Click
- 4 Click
- 5 Click
- 6 Click on quote-market-notice

Interact with
Id: quote-market-
1 element matches this selector

Actions
Click on element

Interact with elements to create actions

Recording element interactions on Chrome

SELECT APPLICATION ▾ DONE

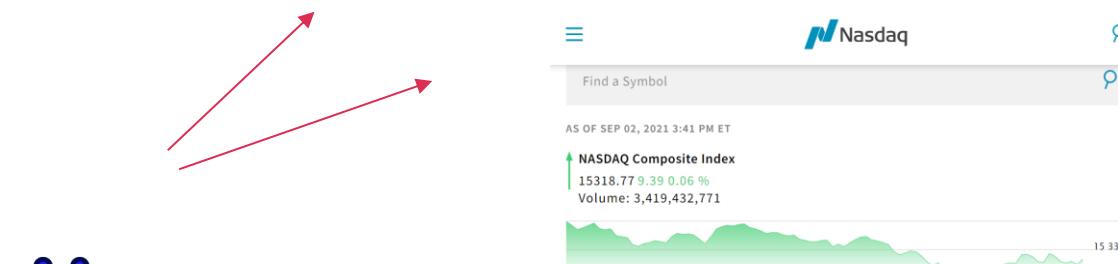
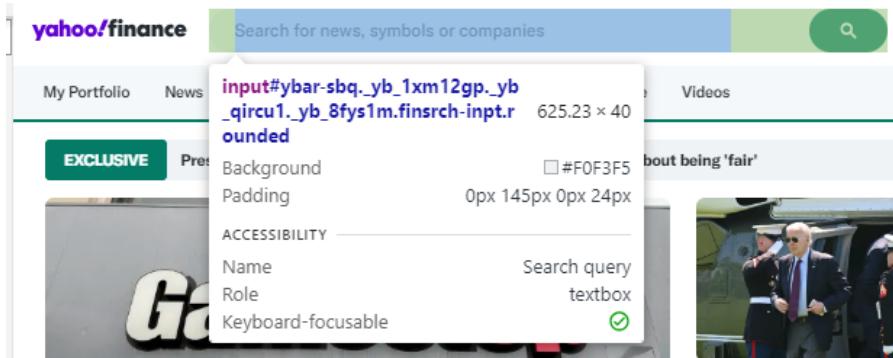
Selenium Components

- Selenium WebDriver: Collection of language specific bindings to drive a browser.
- Selenium IDE: A Chrome, Firefox and Edge add-on that will do simple record-and-playback of interactions with the browser.
- Selenium Grid: Run tests against a combination of browsers and operating system.



The Selenium IDE and Selenium Grid are not needed by Appian

Inspect find-symbol-input Example



A screenshot of the browser developer tools' element inspector. The element being inspected is `input#find-symbol-input`. The properties tab shows the following details:

```
find-symbol-input
  Styles Computed Layout Event Listeners DOM Breakpoints Properties
  1 of 2 ▾
  1.0.0
  enterkeyHint: ""
  files: null
  firstChild: null
  firstElementChild: null
  form: form.find-symbol_form
  formAction: "https://www.nasdaq.com/"
  formEncType: ""
  formMethod: ""
  formNoValidate: false
  formTarget: ""
  height: 0
  hidden: false
  id: "find-symbol-input"
  incremental: false
  indeterminate: false
```

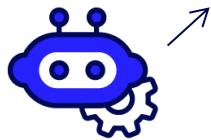


Inspect with your browser

Example

Task Recorder with Get table values

The screenshot shows the Appian Task Recorder interface overlaid on a web browser window displaying a table from [mdbootstrap.com](https://mdbootstrap.com/docs/b4/jquery/tables/pagination/). The recorder's sidebar on the right lists steps: 1. Open browser and 2. Get table values. Under 'Get table values', the 'Interact with' section shows 'Css select: <td>' and the 'Actions' dropdown is set to 'Get table values'. A checkbox 'Get data from all table pages' is checked. The 'Save into' section shows a dropdown menu for 'Search variables'. At the bottom, there are 'SELECT APPLICATION' and 'DONE' buttons, and a status message 'Recording element interactions on Firefox'.



Quickly Extract data from HTML tables with the **Get table values** action !

Lesson 9



Create New Actions to Extract and Log Results

New Actions for Nasdaq site

▼ Nasdaq Section

File Log start of NASDAQ section

File Open browser

Search Search Symbol

Get Get Is Enabled?

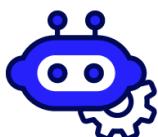
Image Locate green

▶ ⓘ Is color green?

Get Get Name

File Debug Name

File Log end of NASDAQ section



New Actions for Yahoo Finance site

▼ Main

▼ Nasdaq Section

 Log start of NASDAQ section

 Open browser

 Search Symbol

▼ Get Company Info

 Get Name

 Get Last Price

 Get Increment

 Get Percent

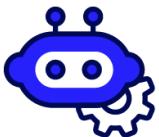
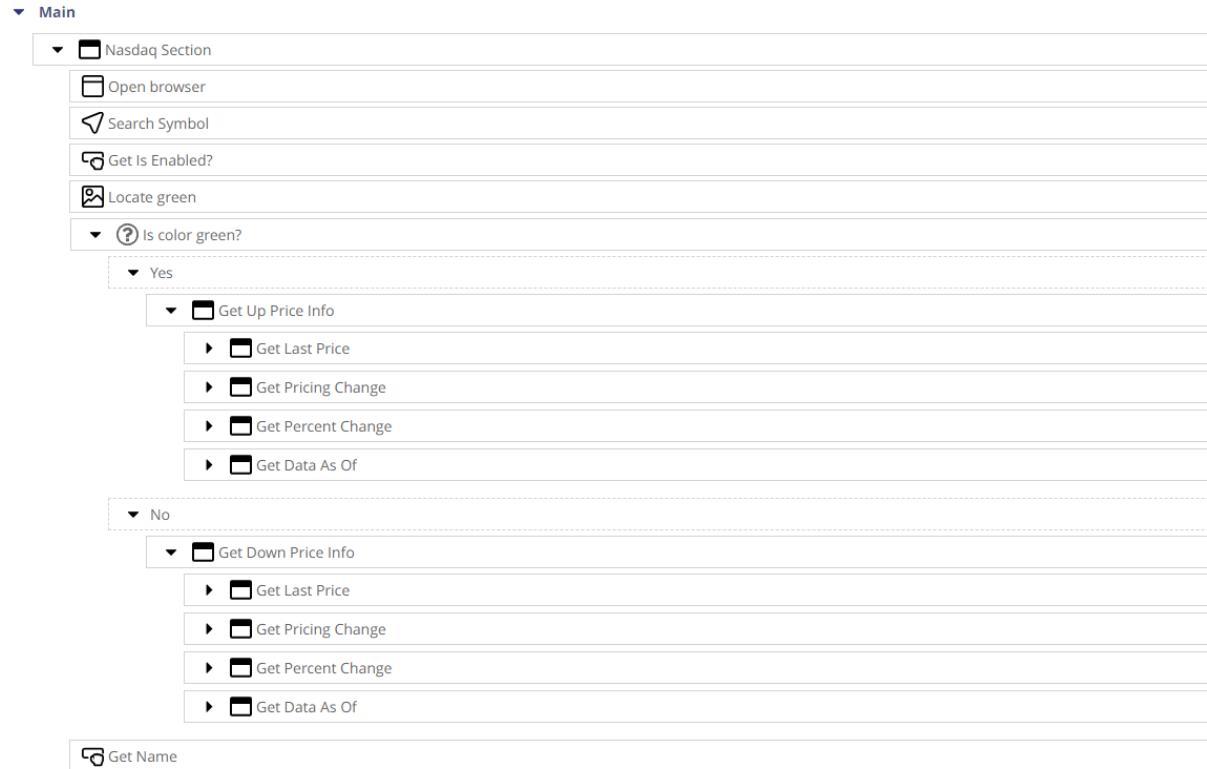
 Get Data as Of

 Debug

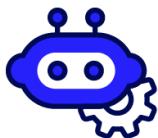
 Log end of NASDAQ section



Condition Actions



Condition Actions



Grouping Actions

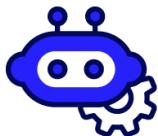
▼ Get Up Price Info

▶ Get Last Price

▶ Get Pricing Change

▶ Get Percent Change

▶ Get Data As Of



Lesson 10

Exception Handling

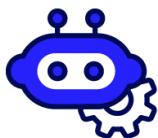
System Exceptions

- Browser does not open
- No internet connection
- Problems connecting to the server
- Error loading components of the page
- Other various browser interruptions
- File not be found



Business Exceptions

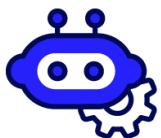
- Informed by the client in the use case of a robotic task
- Found in the development of the robotic task, both in the preliminary study and in the tests



Nasdaq Search Workflow Example

The screenshot shows the Appian workflow configuration interface with the following details:

- Header:** Search actions, How to configure a robotic task, TEST button.
- Setup:** Main section expanded.
- Main Section:** Nasdaq Section
 - Log start of NASDAQ section
 - Open browser
 - Search Symbol
 - Get Is Enabled?
 - Search Failed?
 - Yes
 - No
 - Locate green
 - Is color green?
 - Yes
 - No
 - Get Down Price Info
 - Set Decrease
 - Debug Behaviour
 - Set Search Success
 - Get Name
 - Debug Name
 - Log end of NASDAQ section

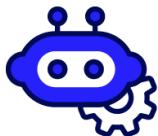


Lesson 11

Items Actions

Items Actions

- Easily handle items in your robotic task
- Associate a workflow action with one of the following actions:
 - Set number of items
 - Set next item
 - Set item result



Items Actions Results Example

@ WORKFLOW RESULTS EXECUTION LOG

Execution cycle by work item

Duration: 0h 3m 59s
By items: 0h 3m 59s
ETC: 0h 0m 0s

Results by work item: ✓ 1 11

Summary

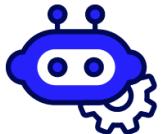
```
*****
Total number of items: #1
Result #Items
[OK] 1
-----
Result Duration #Index item Key (Detail) [Properties]
[OK:LINE] 02m 21s 1 GOOGL (Alphabet Inc. Class A Common Stock (GOOGL) - INCREASE)
*****
```

Results

Robotic task without results

Sub-results description

Robotic task without sub-results descriptions

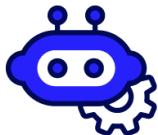


Lesson 12

Executions, Testing and Debugging

Debug Types

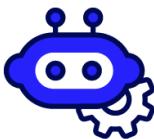
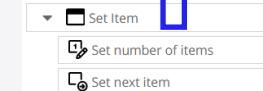
- Additional Information with an Individual Action which depends on the developer
- Low-code actions which cannot be controlled



Execution Log Example

```
[STAT] 2024-01-23 14:17:21 - - <ACTION_START> - Start action 'items->set-number-of-items' - 'Set number of items' // dur: - - avg: - etc:  
[STAT] 2024-01-23 14:17:21 - - <NUMBER_OF_ITEMS> - #1 of total items // dur: - - avg: - etc:  
[STAT] 2024-01-23 14:17:21 - - <ACTION_END> - End action 'items->set-number-of-items' - 'Set number of items' (transition through '' to 'items->set-next-item') // dur: - - avg: - etc:  
[STAT] 2024-01-23 14:17:21 - - <ACTION_START> - Start action 'items->set-next-item' - 'Set next item' // dur: - - avg: - etc:  
[STAT] 2024-01-23 14:17:21 - - <ITEM_START> - Start #1 of #1 (id: GOOGL) () // dur: - - avg: - etc: -  
[STAT] 2024-01-23 14:17:21 - - <ACTION_END> - End action 'items->set-next-item' - 'Set next item' (transition through '' to '[no-action]') // dur: - - avg: - etc:  
[STAT] 2024-01-23 14:17:21 - - <ACTION_START> - Start action '[no-action]' - 'end' // dur: - - avg: - etc:  
[STAT] 2024-01-23 14:17:21 - - <ACTION_END> - End action '[no-action]' - 'end' (transition through '' to 'section-1705949907904') // dur: - - avg: - etc:  
[STAT] 2024-01-23 14:17:21 - - <ACTION_START> - Start action '[no-action]' - 'start' // dur: - - avg: - etc:  
[STAT] 2024-01-23 14:17:21 - - <ACTION_END> - End action '[no-action]' - 'start' (transition through '' to 'execution->log') // dur: - - avg: - etc:  
[STAT] 2024-01-23 14:17:21 - - <ACTION_START> - Start action 'execution->log' - 'Log start of NASDAQ section' // dur: - - avg: - etc:  
[INFO] 2024-01-23 14:17:21 - - Start of section NASDAQ Test.  
[STAT] 2024-01-23 14:17:21 - - <ACTION_END> - End action 'execution->log' - 'Log start of NASDAQ section' (transition through '' to 'browser->open-browser-v2') // dur: - - avg: - etc:  
[STAT] 2024-01-23 14:17:21 - - <ACTION_START> - Start action 'browser->open-browser-v2' - 'Open browser' // dur: - - avg: - etc:  
  
[INFO] 2024-01-23 14:17:21 - - Detected SO: WINDOWS  
[DEBUG] 2024-01-23 14:17:21 - - Waiting for condition "Browser initialization", try #1 of #5  
[DEBUG] 2024-01-23 14:17:21 - - The web driver file must exist at: D:\RPA-Agent\Appian RPA\.Jidoka-workspace\65aeaf43b0bcaa5e6ea70336\.geckoWebDriver\geckodriver.exe  
[DEBUG] 2024-01-23 14:17:21 - - Using default module Firefox options  
[DEBUG] 2024-01-23 14:17:25 04s (0h) - Browser version: 121.0.1  
[DEBUG] 2024-01-23 14:17:25 04s (0h) - Condition "Browser initialization" satisfied with #1 of #5 attempts  
[DEBUG] 2024-01-23 14:17:25 04s (0h) - New page load timeout established: 60  
[DEBUG] 2024-01-23 14:17:25 04s (0h) - Waiting for condition "Activate browser window", try #1 of #4  
[DEBUG] 2024-01-23 14:17:25 04s (0h) - Maximizing browser window  
[DEBUG] 2024-01-23 14:17:25 04s (0h) - Condition "Activate browser window" satisfied with #1 of #4 attempts  
[DEBUG] 2024-01-23 14:17:25 04s (0h) - Navigating to https://www.nasdaq.com/  
[DEBUG] 2024-01-23 14:17:28 07s (0h) - Navigation finished  
  
[STAT] 2024-01-23 14:17:28 07s (0h) - <ACTION_END> - End action 'browser->open-browser-v2' - 'Open browser' (transition through '' to 'common-actions->pause') // dur: 07s - avg: - etc:
```

Internal log of the low-code method



Execution Options Example

Enable video recording?

Record a video of the robotic process execution in MP4 format

Make a full execution recording?

1 Frame rate

0 Minutes from start

1 Minutes from end

Deferred execution?

Execute from this date and time

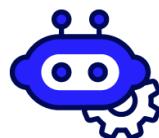
12/19/2017

Date

08:30



Time



Lesson 13

Windows Automation, Keyboard, Image Recognition and Operating System Actions

Windows Automation Module Example

Search actions

How to configure a robotic task  TEST

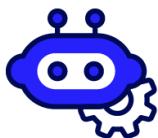
Setup

Main

- Log start of Stock Manager
- Log open StockManager
- Open StockManager
- Close StockManager
- Log end of Stock Manager

Clean up

- Close StockManager

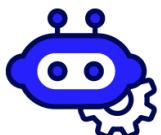
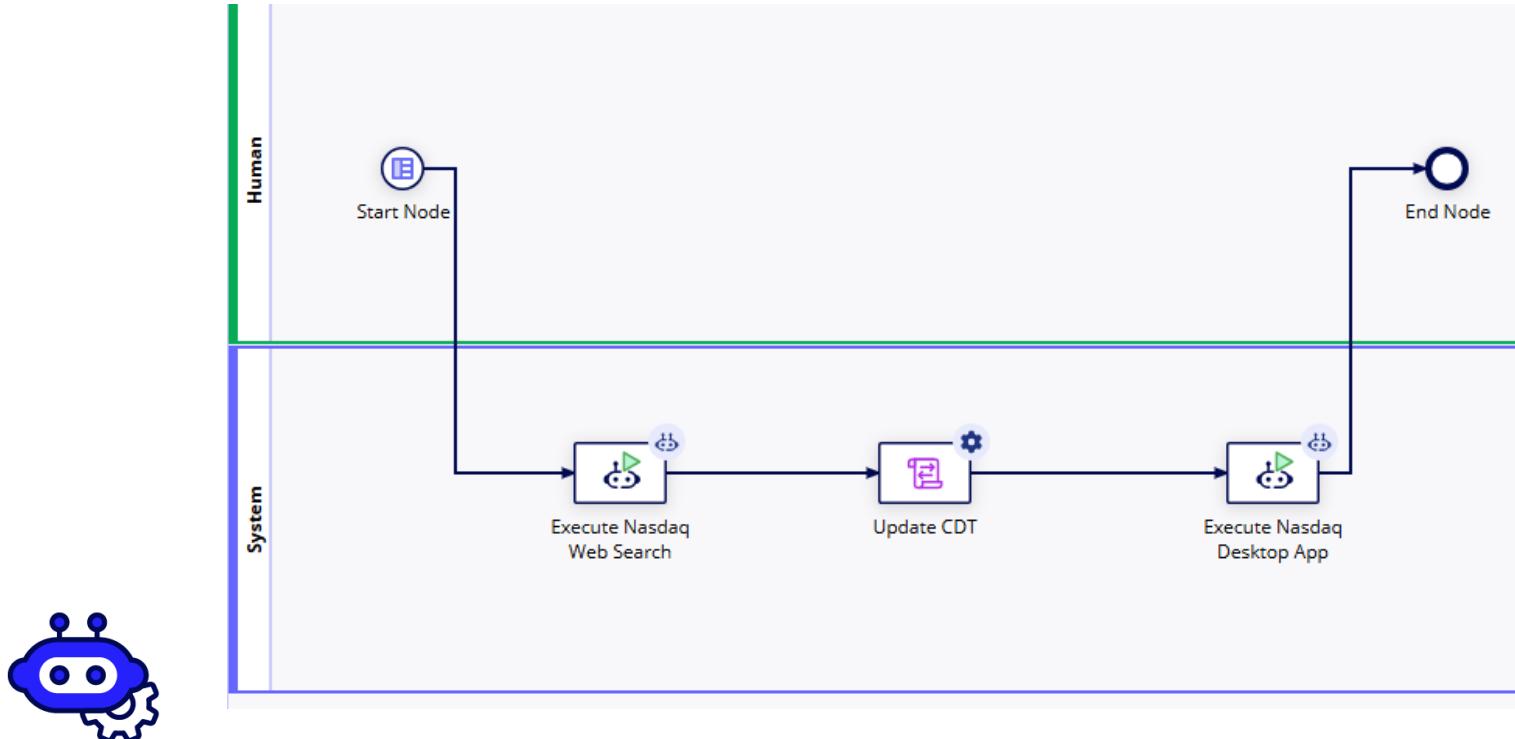


Lesson 14

Execute Robotic Tasks using Process Model RPA Smart Service

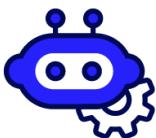
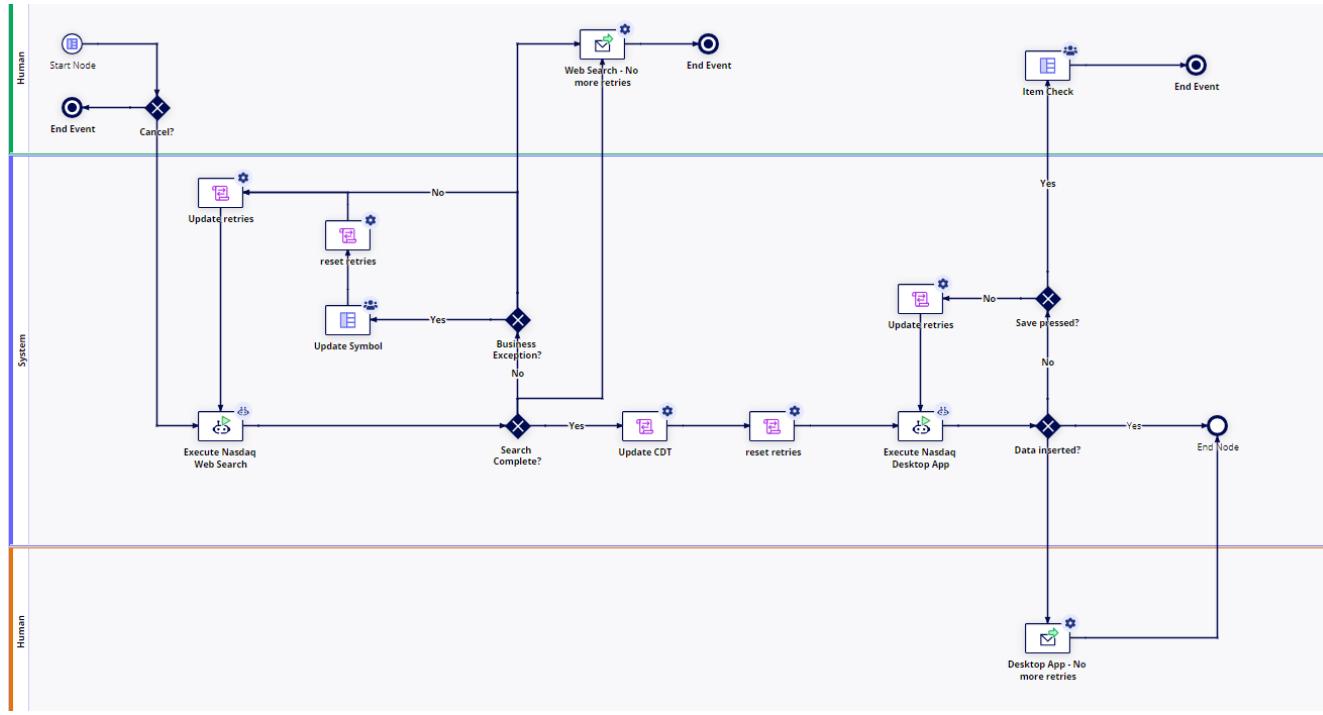
Process Model

Happy Path Example



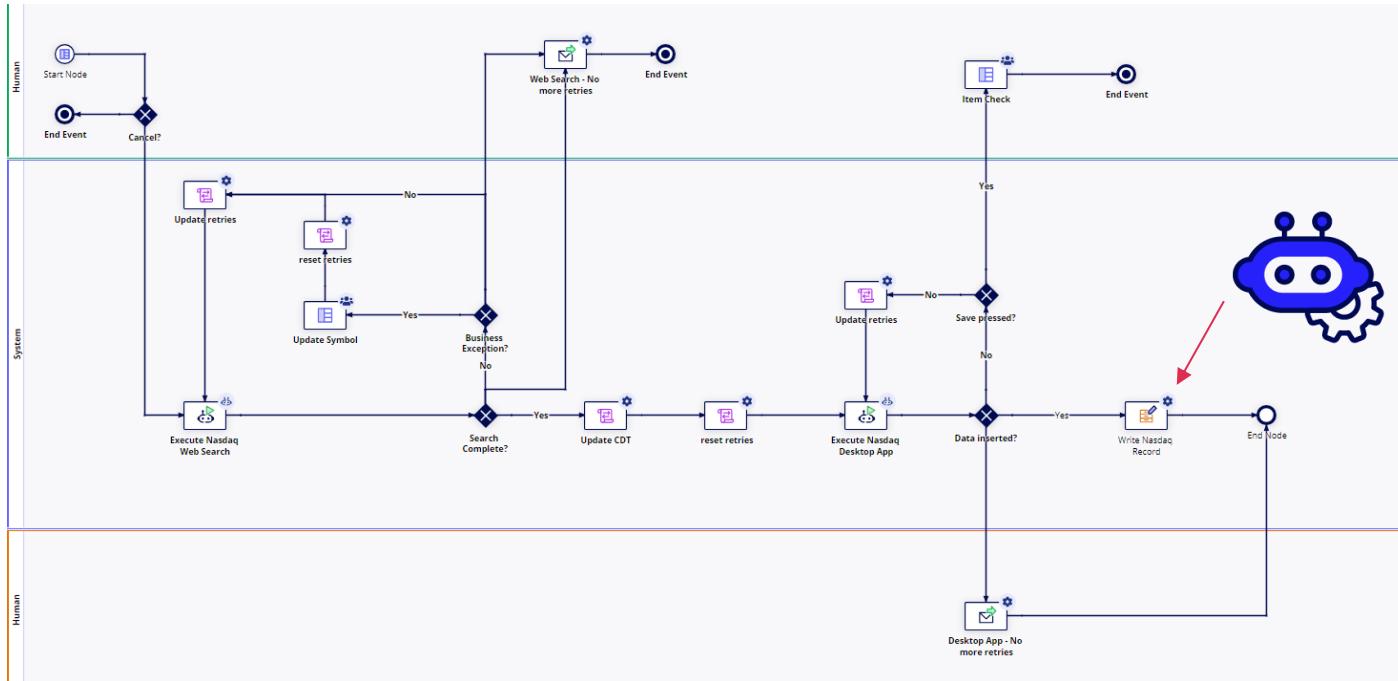
Process Model

Exception Handling Example



Process Model

Write Records Example



Data Fabric !!!

Process Model

Write Records Setup Example

Configure Write Nasdaq Record

General **Setup** Data Forms Scheduling Assignment Escalations Exceptions Other

Records Input Record Type ? *

cast(
 NRD Nasdaq Stock 

 The selected record type has record events configured! Use the section below to write events for this record type.

Write Events

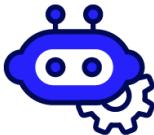
Learn More about writing events

Choose when to write events for the NRD Nasdaq Stock record type

Always
 Never
 Only when...

Event Type * User Automation Type * Timestamp

Created Nasdaq Stock Process Initiator RPA Now

 CANCEL OK

Process Model

Write Records Input Example

Records Input (Any Type)

DATA FUNCTIONS

▶ Process Variables
▶ Activity Class Parameters
▶ Task Properties
▶ Process Properties
▶ Process Model Properties

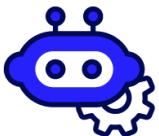
1 cast(
2 recordType!NRD_Nasdaq_Stock,
3 'type':{urn:com:appian:types:RRNRD}RRNRD_TrainingNasdaqInfo'{
4 id: null,
5 symbol: pv!RRNRD_TrainingNasdaqInfo.symbol,
6 name: pv!RRNRD_TrainingNasdaqInfo.name,
7 behaviour: pv!RRNRD_TrainingNasdaqInfo.behaviour,
8 changePercent: pv!RRNRD_TrainingNasdaqInfo.changePercent,
9 lastPrice: pv!RRNRD_TrainingNasdaqInfo.lastPrice,
10 pricingChange: pv!RRNRD_TrainingNasdaqInfo.pricingChange,
11 dataAsOf: pv!RRNRD_TrainingNasdaqInfo.dataAsOf,
12 createdBy: ppiInitiator,
13 createdOn: now(),
14 updatedBy: pv!RRNRD_TrainingNasdaqInfo.updatedBy,
15 updatedOn: pv!RRNRD_TrainingNasdaqInfo.updatedOn
16 })
17)

pm! - Process Model Properties

Used to reference [process model properties](#).

Clear expression

CANCEL SAVE AND CLOSE



CANCEL

SAVE AND CLOS

Lesson 15

Excel Actions

Excel Actions

License Not Required Example

▼ Main

↳ Does uploaded Nasdaq Excel file exist?

▼ Yes

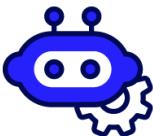
- Get Nasdaq Excel Data
 - Open Nasdaq workbook (license not required)
 - Get Nasdaq worksheet name (license not required)
 - Find range end (license not required)
 - Get Excel Nasdaq values (license not required)
 - Set Created By
 - Set Created On
 - Upload Nasdaq Excel Sheet
 - Set uploaded to true
 - Save Nasdaq workbook as (license not required)
 - Delete a file or a folder

▼ No

- Set uploaded to false:

▼ Clean up

- Close Nasdaq workbook (license not required)



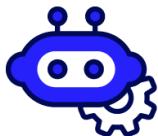
Lesson 16

Troubleshooting RPA

Potential Issues

Diagnose and Troubleshoot

- Host Machine
- Robot
- Selenium Drivers
- Browser
- Robot Pool
- Robotic Task
- Process Model



Helpful Troubleshooting Components

Host

- jidoka-client.log
- appianLoginAgent.log

RPA

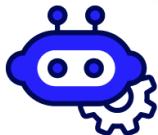
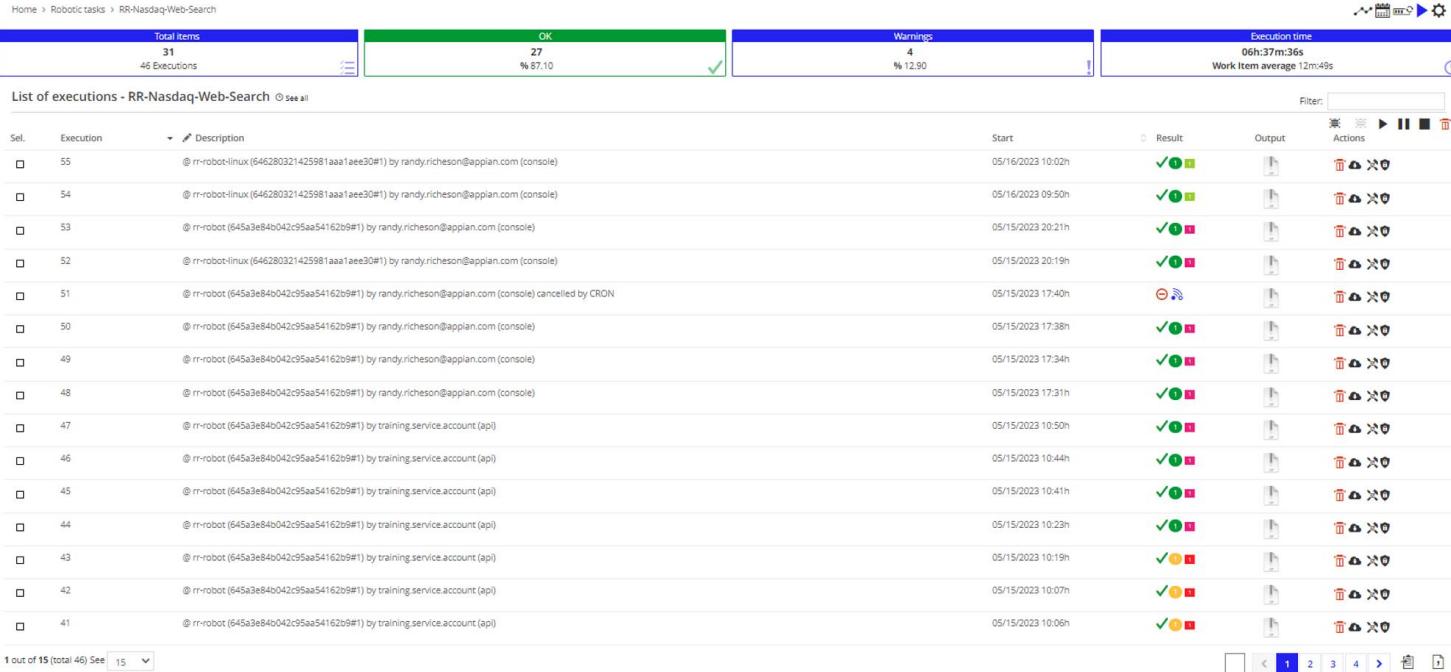
- Execution log
- Items Actions
- Robotic Task Chart

Process Model

- Process Model Process Instance Details
- Monitor Health Dashboard
- Monitor Process Activity



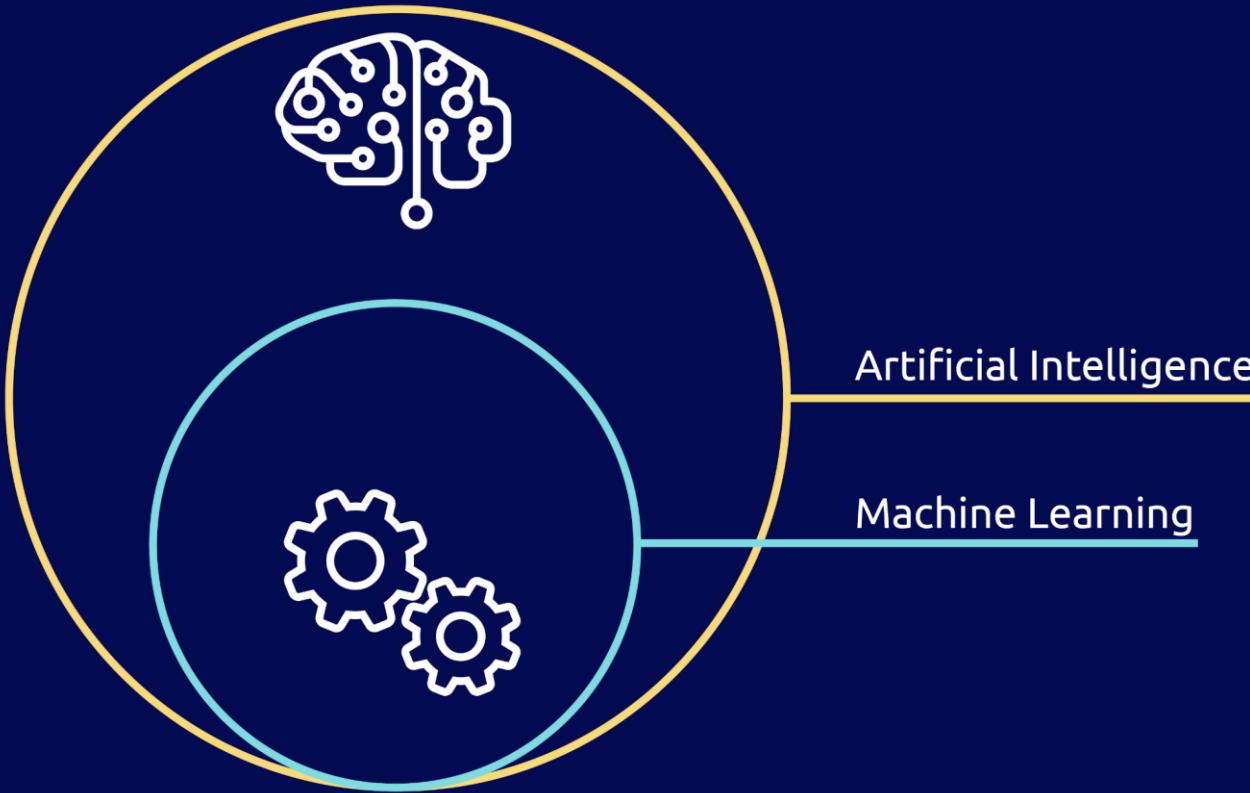
Robotic Tasks Chart Example



Conclusion

Bonus Lesson

RPA with AI Skills



AI can mimic human intelligence to solve problems and make predictions in uncertain circumstances.

Machine learning (ML) is how AI autonomously learns over time.

Generative AI creates new content based on a natural language prompt.



Test Prompt

Create & Test Prompt

Models enforce token limits on prompts, including the input text. Larger prompts may limit the amount of input text the model will accept. There is a maximum of 150,000 characters between the prompt and examples.

Prompt

Describe what you'd like the model to do when it receives the input.

<Role>

You are an expert at summarizing the performance of a stock in 2023.

</Role>

<Task> You will be given a stock ticker. Summarize this NASDAQ Stock as of 2024. This summary should be more than 150 words and less than 300 words. Use 3-5 paragraphs. Use information from 3 sources. You need to answer the following questions using the input example and provide the source of your information.

</Task>

<Questions>

Is this stock a good investment?

What is the probability that this stock will increase in the next year?

What is the probability that this stock will double in the next five years?

What is the probability this company could be acquired in the next five years?

Is there any pending legal actions that could lower the value of this stock?

</Questions>

Temperature

Tell the model how similar or varied you'd like the responses to be



Provide Examples

This model can deliver more precise results when you provide example inputs and outputs. The inputs and outputs are specific to your use case.

Test Input

GOOGL

TEST

Output

Review AI-generated content to make sure it is accurate and appropriate.

[Learn more about Generative AI](#)

Here is a summary of Google (NASDAQ: GOOGL) stock as of 2024:

Google remains a strong investment as one of the largest technology companies in the world. In 2023, the stock increased over 15% as the company continues to dominate internet search and online advertising (Investopedia, 2024).

Google has several promising growth areas that are likely to boost revenues and earnings in coming years. Its cloud computing division Google Cloud is growing rapidly and competing strongly against Amazon Web Services and Microsoft Azure. Google's hardware products such as Pixel phones and Nest smart home devices are also gaining popularity (The Motley Fool, 2024).

The company's autonomous vehicle subsidiary Waymo is seen as a leader in self-driving car technology. If Waymo is successful in deploying autonomous taxis and trucks, it could become a huge new business for Google. There is also potential for Google to expand into healthcare and other industries with its artificial intelligence expertise (CNN Business, 2024).

Given its strong market position, innovative culture and massive cash flows, there is a high probability that Google stock will continue to appreciate over the next year. Financial analysts estimate the stock has a 60-70% chance of gains. However, sustained 20% annual returns may be unlikely given Google's large size. Over five years, there is a solid 40-50% probability the stock could double in value based on continued growth of Google's core businesses and new opportunities.

Bonus Lesson

Service Accounts and API Keys

Web API Authentication

The API Keys tab helps you to create and manage API keys and Service Accounts, which can be used to invoke Appian Web APIs. This page allows you to:

- Create a new API key and/or service account
- Deactivate and reactivate API keys
- Permanently delete API keys

The screenshot shows the Appian Administration Console interface. The top navigation bar includes the Appian logo, a search bar, and links for EXPORT, IMPORT, and user profile. The left sidebar has a tree view with nodes like AUTHENTICATION, Web API Authentication (selected), and DEVOPS. The main content area is titled "Web API Authentication". It contains tabs for "API Keys" (selected) and "OAuth 2.0 Clients". A descriptive text explains how to use API keys for web APIs. Below it is a filter section with radio buttons for "Active", "Inactive", and "All", and buttons for "CREATE" and "DEACTIVATE". A table lists existing API keys, showing columns for Description, Service Account, Created By, Created On, and Last Used. One row is shown in the table.

Description	Service Account	Created By	Created On	Last Used
RR RPA API Key for the NASDAQ Search	training rpa	Randy Richeson	5/15/2022	05/26/2022 3:46:37 PM x

Create New API Key Example

Create New API Key

Description*

RPA API Key for training

Describe what this key will be used for. This should be unique across your API keys.

Service Account*



training rpa 



All API keys must be associated with a user in the Service Accounts group. These users are prevented from logging into Appian.

[View Service Accounts group](#)

CANCEL

CREATE

Bonus Lesson

Connected System and Integration for Appian RPA

Connecting Appian to Appian RPA

You can connect Appian to Appian RPA using:

- Appian RPA Connected System
- Integration

Create Connected System

Search Connected Systems...



HTTP



OpenAPI



Amazon Machine
Learning



Appian RPA



Thank you.

