

Automating Tasks with IBM Robotic Process Automation 20.12.5

WB504 (Classroom)

ZB504 (Self-paced)

Course description

This course introduces developers to IBM Robotic Process Automation 20.12.5. You learn the skills that are needed to implement task automation by developing bots. Through hands-on exercises, you become familiar with IBM RPA environment, including RPA Studio and RPA Portal. You become comfortable with flow control, conditional logic, text processing, mathematical calculation, and file management commands. You learn how to automate browser interaction, capture and process information from spreadsheets, and process email. You publish your bots to the server and learn how to manage bot execution through scheduling, launchers, API calls, and orchestration processes. You are also introduced to BPMN workflows and chatbot development.

The lab environment for this course uses Windows Server 2016.

For information about other related courses, see the IBM Training website:

**ibm.com**/training

General information

Delivery method

Classroom or self-paced virtual classroom (SPVC)

Course level

ERC 1.0

Product and version

IBM Robotic Process Automation 20.12.5

Audience

This course is intended for developers.

Learning objectives

After completing this course, you should be able to:

* Describe the benefits of implementing robotic process automation
* Author and test bots in RPA Studio
* Implement web automation
* Use bots to read, respond to, and manage emails
* Implement error handling
* Publish scripts for production and configure target servers in RPA Portal
* Implement unattended bot execution through scheduling and orchestration workflow processes
* Set up launchers in RPA Portal to support attended bot execution
* Use the RPA Studio record and computer vision to capture interaction with stand-alone applications
* Use document scraping and OCR to extract data from PDF and image files
* Outline how to use workflows
* Explain how to develop digital assistants
* Implement machine learning to classify texts
* Incorporate business rules in scripts
* Implement version control, script modularity and reuse

Prerequisites

* Knowledge of data structures
* Basic knowledge of SQL syntax
* Basic knowledge of web services

Note: If you do not meet all the requirements, you can still complete the lab exercises for this class by following the step-by-step instructions that are provided.

Duration

5 days

Skill level

Intermediate

Notes

The following unit and exercise durations are estimates, and might not reflect every class experience. If the course is customized or abbreviated, the duration of unchanged units will probably increase.

This is a new course.

Course agenda

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| Course introduction  Duration: 15 minutes |

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| Unit 1. Introducing IBM Robotic Process Automation  Duration: 1 hour and 30 minutes | |
| Overview | This unit introduces you to robotic process automation technology and the benefits of implementing it. You also learn about the IBM Robotic Process Automation features and architecture. |
| Learning objectives | After completing this unit, you should be able to:   * Explain robotic process automation (RPA) * Outline the use cases and benefits of RPA * Describe the IBM RPA architecture |

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| Exercise 1. Creating a simple bot  Duration: 30 minutes | |
| Overview | This exercise introduces you to the RPA Studio environment. You learn how to create a simple bot that opens a message box. |
| Learning objectives | After completing this exercise, you should be able to:   * Sign in to the RPA Studio and RPA Portal environments * Create a bot script * Define a bot command * Test a bot * Publish a bot to the RPA server * View published scripts in IBM RPA Portal |

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| Unit 2. Getting started with RPA Studio  Duration: 2 hours | |
| Overview | This unit introduces you to the tools and commands in RPA Studio. |
| Learning objectives | After completing this unit, you should be able to:   * Describe the RPA Studio interface * Explain how to author and run scripts in RPA Studio * Outline how to work with variables * Use commands for file management, conditional logic, flow control, and subroutines in a script |

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| Exercise 2. Automating file management  Duration: 1 hour and 45 minutes | |
| Overview | In this exercise, you create and test a bot that organizes files into separate folders according to the file extension. |
| Learning objectives | After completing this exercise, you should be able to:   * Create, move, and delete files and file folders * Define variables and use commands to assign values * Implement flow control logic * Define, extract, and invoke subroutines |

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| Unit 3. Implementing web automation  Duration: 1 hour | |
| Overview | This unit describes how to automate interaction with browsers. |
| Learning objectives | After completing this unit, you should be able to:   * List script commands for handling web pages * Describe how to interact with web pages |

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| Exercise 3. Implementing web automation  Duration: 2 hours and 15 minutes | |
| Overview | In this exercise, you create and test a bot that reads information from a CSV file, signs in to a website, and enters the information in form fields on a web page. |
| Learning objectives | After completing this exercise, you should be able to:   * Automate basic browser tasks * Capture elements on a web page to automate interaction and navigation * Automate data entry from CSV files to web forms |

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| Unit 4. Handling errors  Duration: 1 hour | |
| Overview | This unit demonstrates how to handle errors during bot execution. |
| Learning objectives | After completing this unit, you should be able to:   * Explain how to implement error handling * Describe RPA Studio debugging tools |

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| Exercise 4. Handling errors  Duration: 45 minutes | |
| Overview | This exercise demonstrates how to throw, catch, and handle errors in a bot script. |
| Learning objectives | After completing this exercise, you should be able to:   * Throw and catch a “file does not exist” error * Work with RPA Studio debugging tools * Automate error handling and recovery |

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| Unit 5. Working with email  Duration: 1 hour | |
| Overview | This unit demonstrates how to use RPA for working with emails. |
| Learning objectives | After completing this unit, you should be able to:   * Describe how RPA can support business processes by automating email processing * Explain how to connect to an email server * Search, read, and reply to email messages * Outline how bots can read and reply to emails |

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| Exercise 5. Working with email  Duration: 2 hours and 15 minutes | |
| Overview | In this exercise, you work with email messages for data entry to an online system. You connect to an email server, search for specific messages, and process the message body. |
| Learning objectives | After completing this exercise, you should be able to:   * Connect to an IMAP email server * Search, read, and reply to email messages * Extract information from email messages for data entry to a web form |

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| Unit 6. Working with published scripts  Duration: 1 hour and 30 minutes | |
| Overview | This unit outlines how to publish scripts so that your bots can be available as resources for users to schedule, launch, and call through APIs. |
| Learning objectives | After completing this unit, you should be able to:   * Identify requirements for publishing a bot to RPA Server * Explain how to schedule a bot * Describe how to use RPA Launcher to run a bot * Describe how to call bots with the REST API |

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| Exercise 6. Publishing and running scripts  Duration: 1 hour and 30 minutes | |
| Overview | This lab demonstrates how to publish a bot, configure a target server, schedule bot execution and use the RPA launcher. |
| Learning objectives | After completing this exercise, you should be able to:   * Publish bots to RPA server * Configure a target server * Schedule bot execution * Create a launcher for users to run bots * Use the REST API to call bots |

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| Unit 7. Orchestrating bots  Duration: 1 hour and 30 minutes | |
| Overview | This unit introduces you to process orchestration. You learn how to set up queues and orchestration processes in RPA Portal. |
| Learning objectives | After completing this unit, you should be able to:   * Explain how orchestration works * Describe how to prepare bots for orchestration * Outline how to set up an orchestration process in RPA Portal |

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| Exercise 7. Orchestrating bots  Duration: 1 hour and 30 minutes | |
| Overview | This exercise introduces bot orchestration. You learn how to create queues and orchestration processes in RPA Portal. |
| Learning objectives | After completing this exercise, you should be able to:   * Create an orchestration process * Create a queue * Connect to the queue server and put messages on a queue * Use orchestration to call bots in response to messages on a queue |

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| Unit 8. Creating workflows  Duration: 1 hour | |
| Overview | This unit introduces you to the RPA workflows. |
| Learning objectives | After completing this unit, you should be able to:   * Describe how to define a workflow in RPA Studio * Explain how to create a workflow bot * Run workflow instances by using batches |

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| Unit 9. Working with RPA Studio recorder and computer vision  Duration: 1 hour | |
| Overview | This unit introduces you to the RPA Studio recorder and computer vision for surface automation. |
| Learning objectives | After completing this unit, you should be able to:   * Describe how to record screen interactions * Explain computer vision and surface automation * List interactions that can be recorded and mapped to bot commands |

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| Exercise 8. Working with the RPA Studio recorder and computer vision  Duration: 2 hours | |
| Overview | In this exercise, you use the RPA Studio recorder and computer vision to capture interaction with stand-alone applications and map the interactions to script commands. |
| Learning objectives | After completing this exercise, you should be able to:   * Record interaction with stand-alone applications * Use computer vision to enable bot interaction with the screen * Configure recorded actions as bot commands * Organize recorded actions that are converted to commands within a script |

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| Unit 10. Document scraping  Duration: 1 hour and 45 minutes | |
| Overview | This unit introduces OCR and document scraping for extracting text from PDF documents. |
| Learning objectives | After completing this unit, you should be able to:   * Describe OCR and document scraping * List commands for processing PDF documents * List commands for working with Excel spreadsheet documents |

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| Exercise 9. Creating a document scraping bot  Duration: 2 hours | |
| Overview | In this exercise, you create and test a bot that extracts information from PDF files and compares it to an Excel spreadsheet to find discrepancies. The bot updates the spreadsheet based on the results. |
| Learning objectives | After completing this exercise, you should be able to:   * Use the Region Selector feature to extract (or scrape) text from PDF files * Work with bot commands to extract, map, and edit Excel spreadsheet data * Organize script commands as subroutines |

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| Unit 11. Extracting data with OCR  Duration: 1 hour | |
| Overview | This unit describes OCR capabilities within IBM RPA. |
| Learning objectives | After completing this unit, you should be able to:   * List the supported OCR engines * Explain how to use OCR in a script |

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| Exercise 10. Automating OCR data extraction from image files  Duration: 1 hour | |
| Overview | This exercise demonstrates how to work with OCR to extract and process information from image files. |
| Learning objectives | After completing this exercise, you should be able to:   * Read and extract data from a set of image files * Use regular expressions to extract specific label-value pairs |

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| Unit 12. Working with chatbots  Duration: 1 hour | |
| Overview | This unit introduces you to chatbot development. |
| Learning objectives | After completing this unit, you should be able to:   * Describe what are digital assistants * Describe how to build a chatbot * Create a knowledge base file and model * Outline how to create a chatbot |

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| Unit 13. Machine learning and text classification  Duration: 1 hour | |
| Overview | This unit introduces you to text classification and machine learning models. |
| Learning objectives | After completing this unit, you should be able to:   * Describe how to design machine learning model * Explain the text classification feature concept |

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| Exercise 11. Working with text classification  Duration: 30 minutes | |
| Overview | In this exercise, you learn how to create and use text classification machine learning models. |
| Learning objectives | After completing this exercise, you should be able to:   * Create a machine learning model * Use a machine learning model to classify data |

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| Unit 14. Working with business rules  Duration: 1 hour | |
| Overview | This unit describes how to define and call business rules within your scripts. |
| Learning objectives | After completing this unit, you should be able to:   * Define a rule and rule set * Explain when to use a Case and Imply commands * Use script commands to invoke a rule set |

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| Exercise 12. Working with business rules  Duration: 1 hour | |
| Overview | In this exercise, you create and invoke business rules by using RPA Automation Studio. |
| Learning objectives | After completing this exercise, you should be able to:   * Create a business rule set * Use the Case command with various options inside a business rule * Use the When command inside a business rule * Use the Calculate Mathematical Expression command inside a business rule * Invoke a rule set within a script |

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| Unit 15. Reusing and administering bots  Duration: 1 hour | |
| Overview | This unit introduces you script administration tools in IBM RPA Portal. You also learn how RPA can work with Business Automation Workflow. |
| Learning objectives | After completing this unit, you should be able to:   * Describe script management and version control tools in RPA Portal * Explain how to implement modularity and reuse in bot scripts |

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| Exercise 13. Reusing and administering bots  Duration: 40 minutes | |
| Overview | In this exercise, you split an existing bot in two by creating a generic script and calling it in the original script. You also explore some administrative properties of the RPA Portal. |
| Learning objectives | After completing this exercise, you should be able to:   * Manage script versions through RPA Portal * Implement modularity in bot scripts |

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| Unit 16. Course summary  Duration: 30 minutes | |
| Overview | This unit summarizes the course. |
| Learning objectives | After completing this unit, you should be able to:   * Explain how the course met its learning objectives * Access the IBM Training website * Identify other IBM Training courses that are related to this topic * Locate appropriate resources for further study * Explain how to implement modularity and reuse in bot scripts |

For more information

To learn more about this course and other related offerings, and to schedule training, see **ibm.com**/training

To learn more about validating your technical skills with IBM certification, see **ibm.com**/certify

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