

Innovation mindset

Robotic Process Automation

Overview

The Robotics Process Automation (RPA) curriculum materials include a variety of deliverables that are highlighted below. Overall, these materials are presented in the order of recommended coverage and include:

- ▶ Slides (presentation to provide initial exposure to the innovation mindset and RPA concepts and application)
- ▶ Overview case (to foster an understanding and critical thinking)
- ▶ Hands on cases (to allow for the use of an RPA tool and its application to various processes)

A key feature of all of these materials is that they encourage students to develop an innovation mindset. In developing an innovation mindset, students are encouraged to consider how they might imagine a process or address a problem in a better manner than it is currently handled today, and specify how the use of emerging technology, such as RPA, can bring value. Students are also encouraged to learn more (and independently) in order to further develop their ideas. In this constantly changing environment, it is critical that students develop a passion for lifelong learning and that they're curious and actively seek out information and understanding. This can include reading, talking to others who might have valuable insights to offer or learning more about an emerging technology. Students are also encouraged to take action and look to the future. This entails having them apply what they've learned, including hands-on experience with RPA.

The following files are used for in this curriculum offering and are presented in the order of use by the type of file. Additional details about each curriculum item are also presented.

Presentation (lecture)

The slide presentation provides students with an initial exposure to RPA before completing any hands-on application activities. This presentation coverage includes the following:

- ▶ Innovation mindset (definition and importance)
- ▶ RPA foundational concepts (definition, primary uses, evolution, typical process characteristics, benefits, challenges)
- ▶ Approach to implementing RPA (process steps, skillsets and roles)
- ▶ Applications of RPA in audit and tax
- ▶ RPA vendors (to gain insight into different tools and their characteristics and specializations)
- ▶ RPA tool walkthrough (UiPath)



Presentation **Innovation_mindset_RPA_Overview.pptx**

42 slides

Overview case

This case can be completed without covering the overview presentation, although it is not ideal to do so. Select elements of the overview presentation are repeated at a high level and can be reinforced if the presentation has already been covered before beginning the case (definition of RPA; accounting, auditing and tax examples of RPA; RPA implementation steps and benefits; and challenges of RPA and RPA vendors). Students are required to perform research, to brainstorm and to write so they can share their insights and views of the impact of RPA on accounting and business. There is no solution set to this case because the questions are open-ended and a variety of responses could be acceptable.



Case study **[Innovation_mindset_case_studies_RPA_Overview.docx](#)**
[Innovation_mindset_case_studies_RPA_Overview.pdf](#)



Videos These video links are included in the case as well.

[Innovation mindset case studies_Overview_InsuranceAutoClaims](#)

- ▶ Demonstration of how a bot works and can transform an existing human process (i.e., digital processing of an auto insurance claim transaction). This link is provided directly in the case as well.

[Innovation mindset case studies_Overview_VATReturns](#)

- ▶ Demonstration of how EY helped implement an RPA solution for a financial technology client in China to help the client file VAT returns and free up staff for higher-value work.

Billing case

In this case, the students help automate an existing manual process to bill customers for wood products sold by Wood's Amazing Woods Inc. The case requirements include the completion of the overview case first. We strongly suggest this although the case can be completed without this requirement. This case has three parts, which increase with complexity. Each part has a unique, fictional data set of transactions. All parts use the same invoice template to complete the case:

- ▶ Part I: Students are required to create an invoice for a single transaction in the data file.
- ▶ Part II: Students are required to create an invoice for each transaction in the data file (the bot loops).
- ▶ Part III: Students are required to create an invoice for each transaction in the data file that has not already been billed and update the master data file to indicate when the item was billed.



Case study **[Innovation_mindset_case_studies_RPA_Billing.docx](#)**
[Innovation_mindset_case_studies_RPA_Billing.pdf](#)



Case study solutions Note that there is a no solution document. The solution is provided as a UiPath zip file. The bot can be executed using the .xaml file. Once this file has opened, you will need to enter the location where the bot can find the data files listed below (the bot prompts the user to do this). There is also a

video available with step-by-step instructions to create the bot and see the bot execute the tasks as noted in the videos section below.

Innovation_mindset_case_study_solutions_RPA_Billing_PartI.zip

Innovation_mindset_case_study_solutions_RPA_Billing_PartII.zip

Innovation_mindset_case_study_solutions_RPA_Billing_PartIII.zip



Data sets
and forms

All parts:

Innovation_mindset_case_studies_RPA_Billing_MasterInvoice.xlsx

Part I:

Innovation_mindset_case_studies_RPA_Billing_InvoiceData1.xlsx

Part 2:

Innovation_mindset_case_studies_RPA_Billing_InvoiceData2.xlsx

Part 3:

Innovation_mindset_case_studies_RPA_Billing_InvoiceData3.xlsx



Videos

These videos provide “how to” instructions for each case part and related requirements. **This user guide for the EYARC Access has removed video links for external distribution. See the user guide on the EYARC site for links.**

Part I:

Part II:

Part III:

Tax form preparation case

In this case, the students help automate the preparation of tax Form 8805 for each foreign partner from the RiverBend Technologies whose earnings derive from the US and abroad. The case requirements include the completion of the overview case first. We strongly suggest this, although the case can be completed without this requirement. This case does not require the completion of the billing case, although the skills learned in that case will be beneficial to complete this case. Students are required to create a separate tax form (an Adobe pdf file) for each foreign partner using the tax data provided.



Case study

Innovation_mindset_case_studies_RPA_TaxFormPreparation.docx

Innovation_mindset_case_studies_RPA_TaxFormPreparation.pdf



Case study
solutions

Note that there is no a solution document. The solution is provided as a series of UiPath zip files. The bots can be executed using the .xaml file in each zip file. Once this file has opened, you will need to enter the location where the bot can find the data files listed below (the bot prompts the user to do this). There are also videos available with step-by-step instructions

to create each bot and see the bot execute the tasks as noted in the videos section below.

Innovation_mindset_case_study_solutions_TaxFormPreparation.zip



Data sets
and forms

Innovation_mindset_case_studies_RPA_TaxFormPreparation_TaxData.xlsx

Innovation_mindset_case_studies_RPA_TaxFormPreparation_Form8805.pdf

- ▶ To make certain that students use a consistent Adobe pdf software, they are asked to download Acrobat Reader DC from <https://acrobat.adobe.com/us/en/acrobat/pdf-reader.html> and set this as their default program for reading pdf files (<https://www.cnet.com/how-to/how-to-set-default-programs-in-windows-10/>).



Videos

This video provides “how to” instructions for each case requirement. **This user guide for the EYARC Access has removed video links for external distribution. See the user guide on the EYARC site for links.**

Sales reporting case

In this case, the students help automate the creation of sales reports for Pure Guitar Inc. The case requirements include the completion of the overview case first. We strongly suggest this, although the case can be completed without this requirement. This case does not require the completion of the billing and tax form preparation cases, although the skills learned in those cases will be beneficial to complete this case. Students are required to generate this report in Microsoft Word with the information segregated by employee and by quarter and displayed using an Excel bar chart. Students will use the data from two .csv files and an Access database. Students will also be encouraged to utilize two additional UiPath packages to make the automation tasks easier (interaction with Microsoft Word (UiPath.Word.Activities) and the creation of a bar chart in Excel (BalaReva.Excel.Activities)).



Case study

Innovation_mindset_case_studies_RPA_SalesReporting.docx

Innovation_mindset_case_studies_RPA_SalesReporting.pdf



Case study
solutions

Note that there is no a solution document. The solution is provided as a UiPath zip file. The bot can be executed using the .xaml file. Once this file has opened, you will need to enter the location where the bot can find the data files listed below (the bot prompts the user to do this). There is also a video available of step-by-step instructions to create the bot and to see the bot execute the tasks as noted in the video section listed below.

Innovation_mindset_case_study_solutions_SalesReporting.zip



Data sets
and forms

Innovation_mindset_case_studies_RPA_SalesReporting_NewOrdersData.csv
 Innovation_mindset_case_studies_RPA_SalesReporting_NewOrderDetailData.csv
 Innovation_mindset_case_studies_RPA_SalesReporting_Database.accdb



Videos

This video provides “how to” instructions for each case requirement.
 This user guide for the EYARC Access has removed video links for external distribution. See the user guide on the EYARC site for links.

Bot-a-thon case

In this case, students will identify a process in business or in their personal life that can be automated using RPA and develop the bot to automate this process. Students can develop a bot that has different levels of sophistication in terms of how many programs it interacts with and that uses various principles (variables, looping, if/then logic, try/catch activity). Students are also encouraged to learn on their own and teach themselves an additional principle, technique, activity or anything else unique that they can demonstrate with the bot.

The case is written to be completed on an individual basis and a grading rubric is provided as follows:

Level	1	2	3	4	5
Grade range	55%–65%	66%–75%	76%–85%	86%–95%	96%–100%
Interacts with ___ (different) programs:	1	1	2	2	2
Uses ___ of the following principles: ▶ Variables ▶ Looping ▶ If/then logic ▶ Try/catch activity	1	2	3	4	4
Show your ability to learn on your own by demonstrating that you learned how to program one additional feature into your bot. That is, you should show that you taught yourself an additional principle, technique, activity or something else unique to the items listed above.	N/A	N/A	N/A	N/A	X

The case could also be given as a final exam since the requirements culminate the learning through the series of previous cases. It could also be completed in groups of small teams and the requirements could

include a final presentation of the bot, after which the students or faculty member could vote on the best bot to receive the “Bot-a-thon Champion” title!



Case study **Innovation_mindset_case_studies_RPA_Bot_a_thon.docx**
Innovation_mindset_case_studies_RPA_Bot_a_thon.pdf

Emerging technology tools

This case has been designed to utilize UiPath RPA software, although other RPA software tools can easily be used instead. UiPath is conducive to teaching in the classroom for the following reasons:

- ▶ It is easy to obtain a free license to a fully functioning Community Edition version of the software. Setting up the software is also easy. Subscribe for download access using this [link](#). While there is no phone or email support for this edition, there are video tutorials, user guides, resources and a robust community forum.
- ▶ UiPath provides some online training that students can complete on their own. The training can be found at using this [link](#). Once you login to this training platform, the training that is most relevant to students who are new to UiPath is titled “Level 1 RPA Developer Foundation – revamped.”
 - The training can be used as an out-of-class exercise to prepare students for class (i.e., flip the classroom). Based on previous experience with faculty using this training, some positive and negatives aspects to be aware of include:
 - ▶ Positives:
 - The training provides hands-on demonstrations, practice problems and examples of using UiPath.
 - If students complete all the training, they can pass an exam and have a credential to include on their resumes.
 - ▶ Negatives:
 - The training is not always up-to-date with the latest software release of UiPath. While students were able to understand what was going on, buttons were not in the same areas and not all the training bots worked correctly.
 - Students report the trainings can be boring and cover too much material and at too fast of a pace.
 - ▶ One medium ground that has worked effectively for some faculty is to assign the first few lessons in the beginning training to help students get oriented, learn about the possibility of additional self-training material and yet not have students get frustrated with other aspects of the training.
 - ▶ It is fairly easy to work with a lot of different programs.
 - ▶ It has a record feature that is helpful.
 - ▶ Students can continue to learn using the software after course completion because the license doesn't expire.

Blue Prism can also be utilized in the classroom as well and it strongly supports academia. See this [link](#) for information about how to obtain free academic access to the software and additional training resources. Its benefits include the ease of stepping through the process, the internal control built around the process and the order of the program. Note, however, that this software is a little more difficult to set up and it also requires the SQL Express engine, which can make it more difficult to work with students. Also, students are unable to continue using the software after their student license expires.

Breaking the bot

It is important to note that bots require maintenance. This can include making certain that the files used by the bot remain as the same version of the software program for which the bot was initially created. Keep this in mind in the event that a bot is created and then later utilized again after a software version update has occurred. It is possible this might cause an issue with the bot running effectively.