



Robotic Process Automation in a Day

Lab 2 – How to generate insights to optimize and automate your process using Process advisor

45 mins

April 2021



This document is provided “as-is.” Information and views expressed in this document, including URL and other Internet Web site references, may change without notice. You bear the risk of using it. Some examples are fictitious and are for illustration only. No real association is intended or inferred. This document does not provide you with any legal rights to any intellectual property in any Microsoft product. You may copy and use this document for your internal reference purposes.

© 2020 Microsoft Corporation. All rights reserved.

Lab Overview

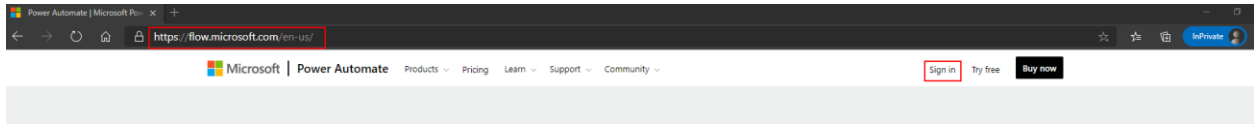
Process advisor records and analyzes your manual business tasks. It discovers inefficiencies and provides optimization and automation opportunities. For example, in a healthcare facility, you can use Process advisor to record patient check-in procedures. Process advisor automatically produces a process map that visualizes the check-in process. You can see which activities take the longest, how many variations of the check-in process there are, and what variations and actions take the most time. Using this information and the powerful features in Process advisor, you can drive improvements to make a difference for business.

Prerequisites

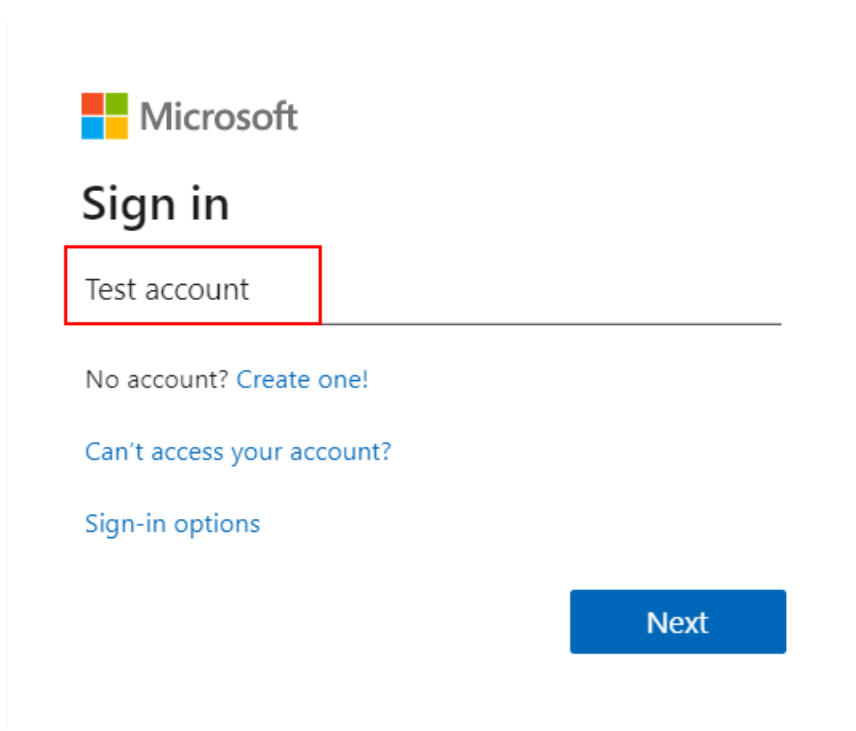
Before you start using Process advisor, make sure you have completed Lab 1.1 and 1.3 prerequisites.

Getting Familiar with Process advisor

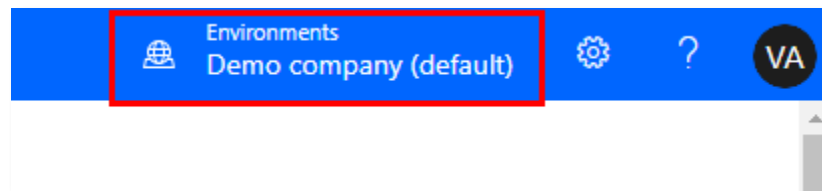
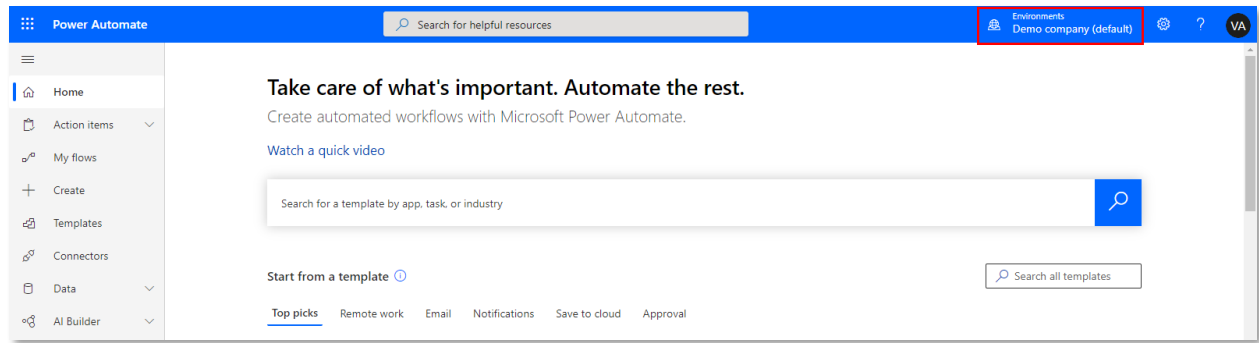
1. Navigate to flow.microsoft.com and click **Sign in**



2. Sign in with your test account

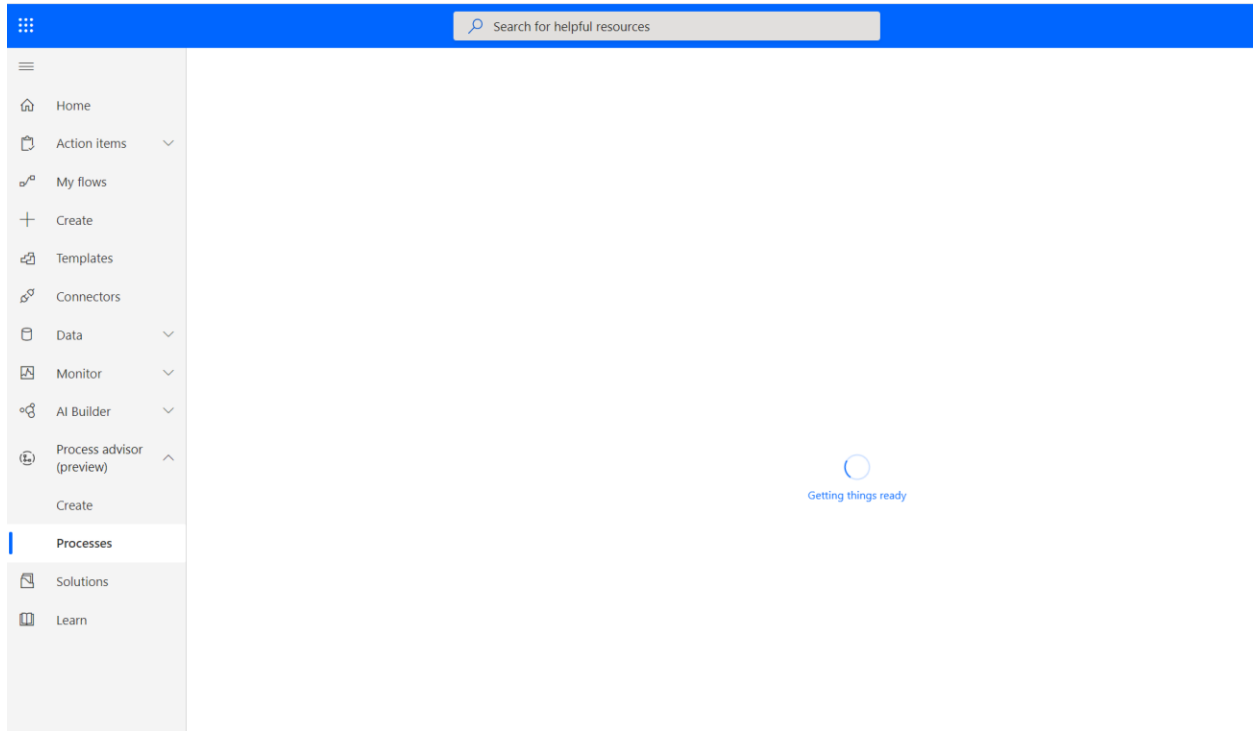


Note: Please make sure you have selected the correct environment (with database) when completing the labs. Either use the environment you created in lab 1.1, or the environment provided to you by your instructor. You can switch between different environments by clicking on the environment picker on the title bar.

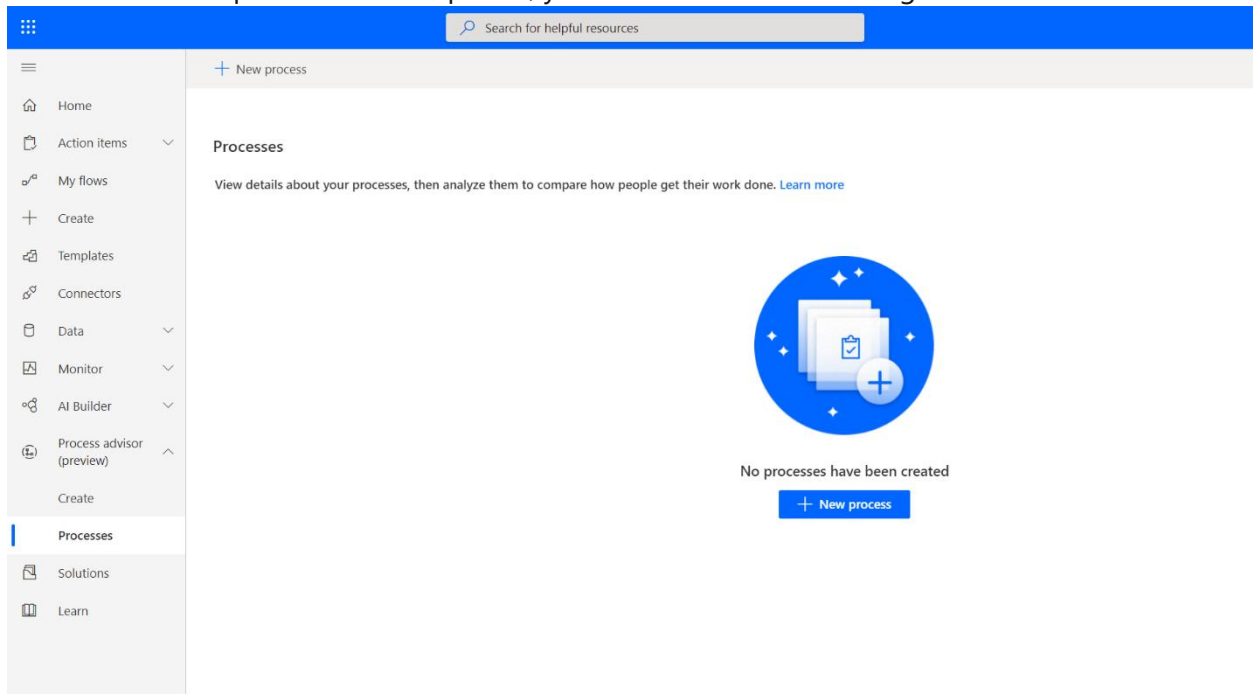


Note: To enhance the lab experience, we are going to import an existing solution that includes Process advisor recordings. If you are in a shared environment, your instructor has already imported this solution for the class to use. Proceed to step #11 (click Process advisor) if your instructor has already imported this solution. Otherwise, please proceed with the next step.

3. Click on **Process advisor (preview)** and then **Processes**. You will subsequently see a **Getting things ready** message. Allow this process to complete, it will take a few minutes.



Once this process has completed, you should see the following screen:



4. Click Solutions

⋮

Home

Action items

My flows

Create

Templates

Connectors

Data

Monitor

AI Builder

Process advisor (preview)

Solutions

Learn

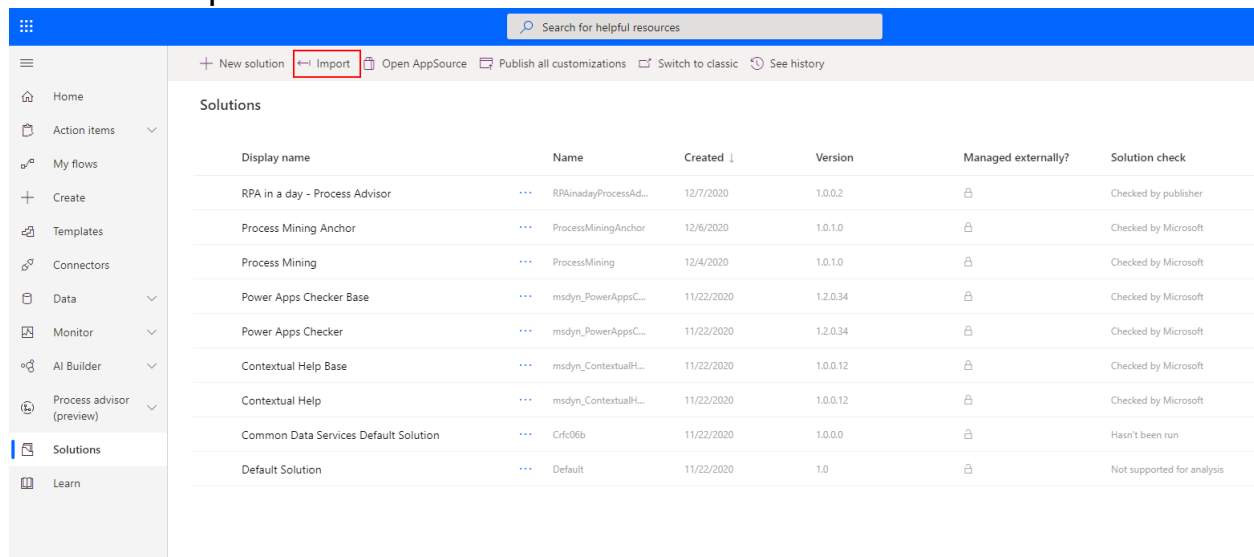
Search for helpful resources

New solution Import Open AppSource Publish all customizations Switch to classic See history

Solutions

Display name	Name	Created	Version	Managed externally?	Solution check	
RPA in a day - Process Advisor	...	RPAinadayProcessAd...	12/7/2020	1.0.0.2	⛔	Checked by publisher
Process Mining Anchor	...	ProcessMiningAnchor	12/6/2020	1.0.1.0	⛔	Checked by Microsoft
Process Mining	...	ProcessMining	12/4/2020	1.0.1.0	⛔	Checked by Microsoft
Power Apps Checker Base	...	msdyn_PowerAppsC...	11/22/2020	1.2.0.34	⛔	Checked by Microsoft
Power Apps Checker	...	msdyn_PowerAppsC...	11/22/2020	1.2.0.34	⛔	Checked by Microsoft
Contextual Help Base	...	msdyn_ContextualH...	11/22/2020	1.0.0.12	⛔	Checked by Microsoft
Contextual Help	...	msdyn_ContextualH...	11/22/2020	1.0.0.12	⛔	Checked by Microsoft
Common Data Services Default Solution	...	Cric06b	11/22/2020	1.0.0.0	⛔	Hasn't been run
Default Solution	...	Default	11/22/2020	1.0	⛔	Not supported for analysis

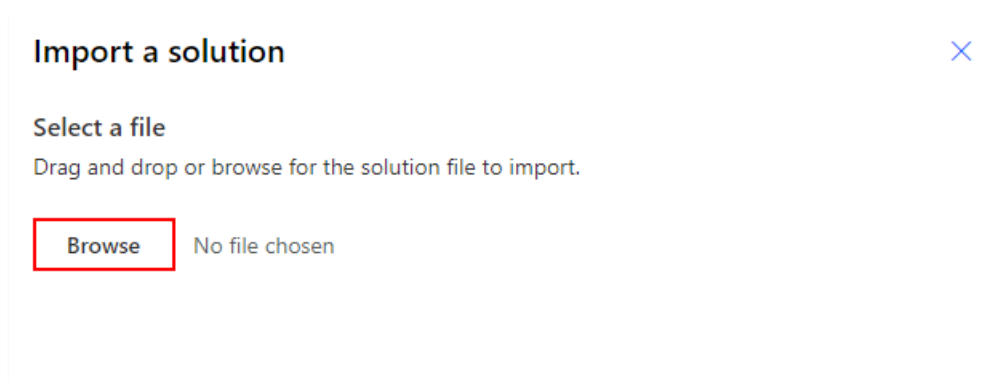
5. Click Import



The screenshot shows the Microsoft Power Automate interface. The left sidebar contains navigation options: Home, Action Items, My flows, Create, Templates, Connectors, Data, Monitor, AI Builder, Process advisor (preview), Solutions, and Learn. The 'Solutions' option is selected. The top navigation bar includes buttons for '+ New solution', 'Import' (highlighted with a red box), 'Open AppSource', 'Publish all customizations', 'Switch to classic', and 'See history'. Below the navigation bar, the 'Solutions' section displays a table of existing solutions.

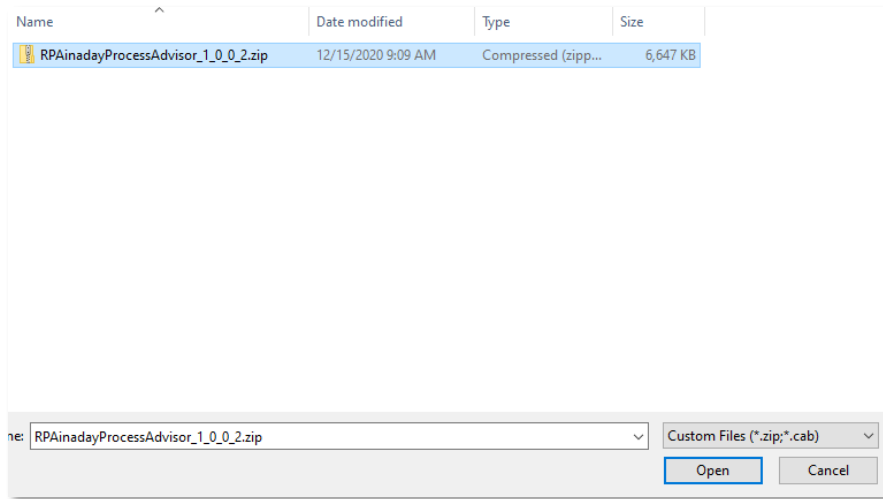
Display name	Name	Created	Version	Managed externally?	Solution check
RPA in a day - Process Advisor	RPAinadayProcessAd...	12/7/2020	1.0.0.2	Yes	Checked by publisher
Process Mining Anchor	ProcessMiningAnchor	12/6/2020	1.0.1.0	Yes	Checked by Microsoft
Process Mining	ProcessMining	12/4/2020	1.0.1.0	Yes	Checked by Microsoft
Power Apps Checker Base	msdyn_PowerAppsC...	11/22/2020	1.2.0.34	Yes	Checked by Microsoft
Power Apps Checker	msdyn_PowerAppsC...	11/22/2020	1.2.0.34	Yes	Checked by Microsoft
Contextual Help Base	msdyn_ContextualH...	11/22/2020	1.0.0.12	Yes	Checked by Microsoft
Contextual Help	msdyn_ContextualH...	11/22/2020	1.0.0.12	Yes	Checked by Microsoft
Common Data Services Default Solution	Crfc06b	11/22/2020	1.0.0.0	Yes	Hasn't been run
Default Solution	Default	11/22/2020	1.0	Yes	Not supported for analysis

6. Click Browse

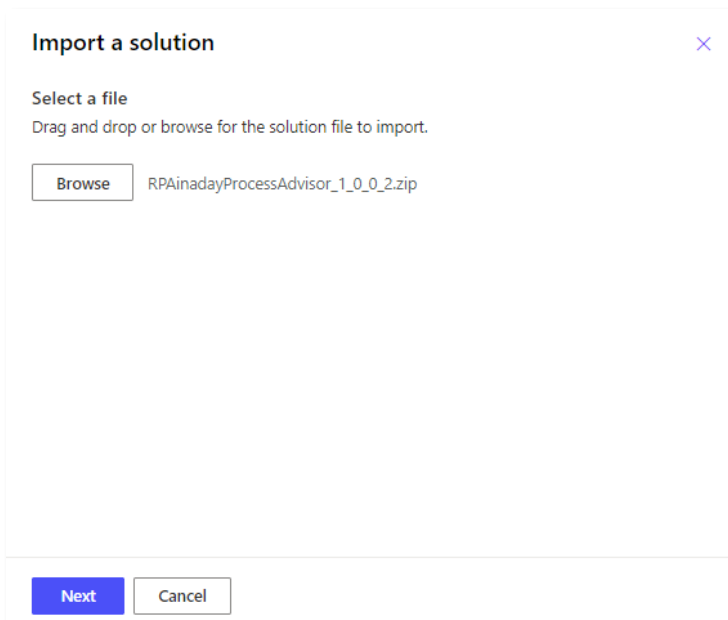


The screenshot shows the 'Import a solution' dialog box. It has a title bar with a close button (X). The main text says 'Select a file' and 'Drag and drop or browse for the solution file to import.' Below this, there is a 'Browse' button (highlighted with a red box) and the text 'No file chosen'.

7. Select the zip file from the lab package and click **Open**



8. Click **Next**



9. Click the **Import** button

Import a solution

Details

Name

RPAinadayProcessAdvisor

Type

Unmanaged

Publisher

CDS Default Publisher

Version

1.0.0.2

Patch

No

Advanced settings

Import

Cancel

10. After a couple minutes, you should see a confirmation message that your solution has been imported successfully and a new solution called **RPA in a day – Process Advisor** has been installed.

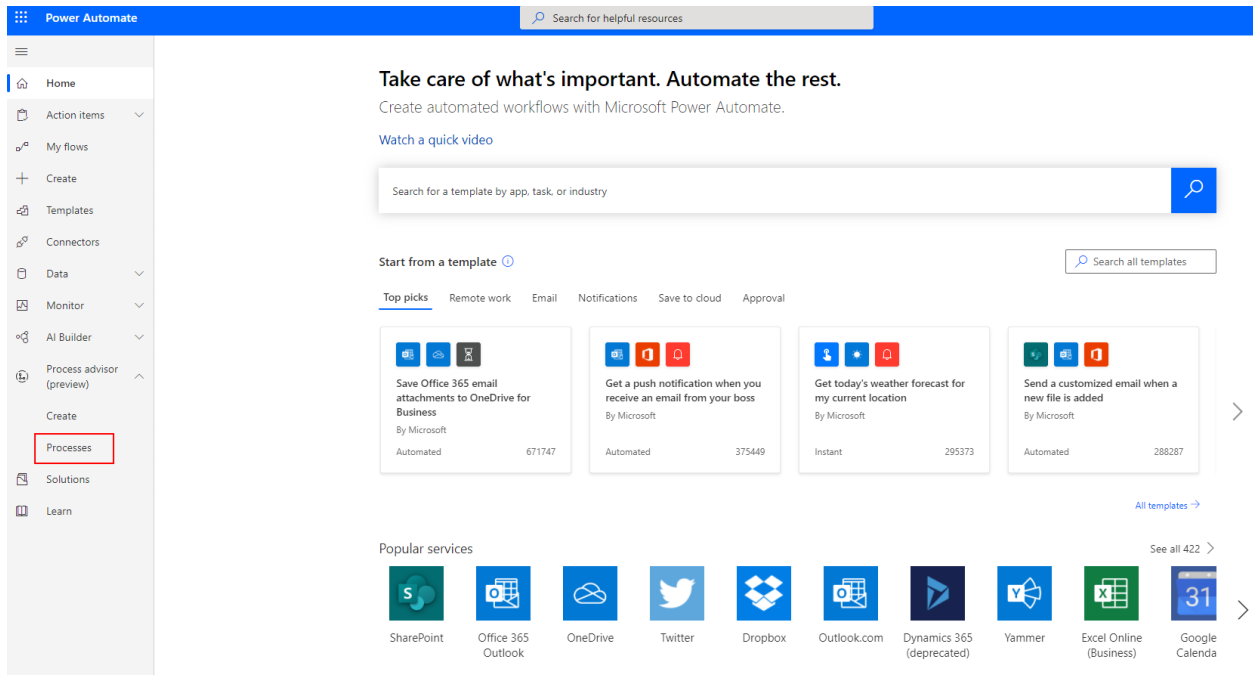
The screenshot shows the Power Automate interface. At the top, a green banner confirms: "Solution 'RPA in a day - Process Advisor' imported successfully." Below this, the 'Solutions' table lists various solutions. The 'RPA in a day - Process Advisor' solution is highlighted with a red box. The table has columns for Display name, Name, Created, and Version.

Display name ↓	Name	Created	Version
Vacation Tracker	VacationTracker	9/8/2020	1.0.0.0
Update PVA Solution	UpdatePVASolution	6/28/2020	1.0.0.7
Test Nikita	TestNikita	9/17/2020	1.0.0.0
Test App	TestApp	9/8/2020	1.0.0.0
Sample Project	SampleProject	9/8/2020	1.0.0.0
RPA in a day - Process Advisor	RPAinadayProcessAd...	12/11/2020	1.0.0.2
Power Platform GitHub ALM	PowerPlatformGitHu...	9/9/2020	1.0.0.17
Power Platform 24 Demo 1	PowerPlatform24De...	10/1/2020	1.0.0.0
Power Apps Checker Base	msdyn_PowerAppsC...	3/22/2020	1.2.0.24
Power Apps Checker	msdyn_PowerAppsC...	3/22/2020	1.2.0.24
Power 24 Demo 2	Power24Demo2	10/1/2020	1.0.0.0

11. Once you successfully imported the zip file, go to **Process advisor (preview)**

The screenshot shows the 'Process advisor (preview)' page in Power Automate. The page has a blue header with 'Power Automate' and a search bar. The left sidebar shows the 'Process advisor (preview)' option highlighted with a red box. The main content area features a heading 'Take care of what's important. Automate the rest.' and a search bar for templates. Below the search bar, there are four template cards: 'Save Office 365 email attachments to OneDrive for Business', 'Get a push notification when you receive an email from your boss', 'Get today's weather forecast for my current location', and 'Send a customized email when a new file is added'. At the bottom, there is a section for 'Popular services' including SharePoint, Office 365 Outlook, OneDrive, Twitter, Dropbox, Outlook.com, Dynamics 365 (deprecated), Yammer, Excel Online (Business), and Google Calendar.

12. Click Processes



13. Click on **Contoso Invoice Processing** label

Note: If this is the first time you access Process Advisor make sure you have clicked at least once on "Processes" and wait until the "Getting things ready" loading spinner disappeared before importing. If you try to import the RPAinadayProcessAdvisor_1_0_0_2.zip solution without first initializing the Processes section of Process advisor you will see only a couple of recordings in the imported solution

Power Automate

Search for helpful resources

Home

Action items

My flows

Create

Templates

Connectors

Data

Monitor

AI Builder

Process advisor (preview)

Create

Processes

Solutions

Learn

New process

Processes

View details about your processes, then analyze them to compare how people get their work done. [Learn more](#)

<input type="radio"/>	Name	Owner	My role	Created	Modified	Status
<input type="radio"/>	Contoso Invoice Processing		Owner	11 h ago	10 h ago	Analyzed

14. You can see all the existing recordings under **Recordings**

Processes > Contoso Invoice Processing

Details [Edit](#)

Description	Owner	Created
Submit a new invoice using Contoso Invoice App		12/7/2020, 12:50 PM
	Status	Modified by
	Analyzed	Chris Lan
Modified	Analyzed	Analyzed recordings
12/7/2020, 1:16 PM	12/7/2020, 1:16 PM	6

Shared with

Co-owners

Contributors

Recordings

Name	Created by	Created	Modified by	Modified	Status
Shakti Menon 12/1/2020, 11:06 AM		11 h ago	Chris Lan	11 h ago	Analyzed
Wasanthi Gamage 12/7/2020, 6:46 PM		11 h ago	Chris Lan	11 h ago	Analyzed
Egon Nilsson 12/7/2020, 6:48 PM		11 h ago	Chris Lan	11 h ago	Analyzed
Preston Morales 12/1/2020, 11:01 AM		11 h ago	Chris Lan	11 h ago	Analyzed
Preston Morales 12/7/2020, 6:38 PM		11 h ago	Chris Lan	11 h ago	Analyzed
Christopher Reed 12/7/2020, 6:30 PM		11 h ago	Chris Lan	11 h ago	Analyzed

[See all](#)

15. Click **See all**, you will be able to see all the existing recordings

Recordings [+ New recording](#)

Name	Created by	Created	Modified by	Modified	Status
Shakti Menon 12/1/2020, 11:06 AM		11 h ago		11 h ago	Analyzed
Wasanthi Gamage 12/7/2020, 6:46 PM		11 h ago		11 h ago	Analyzed
Egon Nilsson 12/7/2020, 6:48 PM		11 h ago		11 h ago	Analyzed
Preston Morales 12/1/2020, 11:01 AM		11 h ago		11 h ago	Analyzed
Preston Morales 12/7/2020, 6:38 PM		11 h ago		11 h ago	Analyzed
Christopher Reed 12/7/2020, 6:30 PM		11 h ago		11 h ago	Analyzed

[See all](#)

Processes > Contoso Invoice Processing > Recordings

<input type="radio"/>	Name	Created by	Created	Modified by	Modified	Status
<input type="radio"/>	Shakti Menon 12/1/2020, 11:06 AM		11 h ago		11 h ago	Analyzed
<input type="radio"/>	Wasanthi Gamage 12/7/2020, 6:46 PM		11 h ago		11 h ago	Analyzed
<input type="radio"/>	Egon Nilsson 12/7/2020, 6:48 PM		11 h ago		11 h ago	Analyzed
<input type="radio"/>	Preston Morales 12/1/2020, 11:01 AM		11 h ago		11 h ago	Analyzed
<input type="radio"/>	Preston Morales 12/7/2020, 6:38 PM		11 h ago		11 h ago	Analyzed
<input type="radio"/>	Christopher Reed 12/7/2020, 6:30 PM		11 h ago		11 h ago	Analyzed

16. Let's go back to Contoso Invoice Processing Processes by clicking **Contoso Invoice Processing**

Processes > **Contoso Invoice Processing** > Recordings

<input type="radio"/>	Name	Created by	Created	Modified by	Modified ↓	Status
<input type="radio"/>	Shakti Menon 12/1/2020, 11:06 AM	Virtual Agent	5 min ago	Virtual Agent	5 min ago	Analyzed
<input type="radio"/>	Wasanthi Gamage 12/7/2020, 6:46 PM	Virtual Agent	5 min ago	Virtual Agent	5 min ago	Analyzed
<input type="radio"/>	Egon Nilsson 12/7/2020, 6:48 PM	Virtual Agent	5 min ago	Virtual Agent	5 min ago	Analyzed
<input type="radio"/>	Preston Morales 12/1/2020, 11:01 AM	Virtual Agent	5 min ago	Virtual Agent	5 min ago	Analyzed
<input type="radio"/>	Christopher Reed 12/7/2020, 6:30 PM	Virtual Agent	5 min ago	Virtual Agent	5 min ago	Analyzed
<input type="radio"/>	Preston Morales 12/7/2020, 6:38 PM	Virtual Agent	5 min ago	Virtual Agent	5 min ago	Analyzed

17. You will be able to see below features:

New recording Analytics Share Analyze Delete

Processes > **Contoso Invoice Processing**

- **+ New Recording** - You can create a new recording by clicking **+ New Recording** (We will create a new recording in an upcoming exercise)

New recording

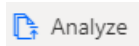
- **Analytics** - You can see the process map and insights by clicking **Analytics**

Analytics

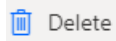
- **Share** - You can share your processes with your team members by clicking **Share**

Share

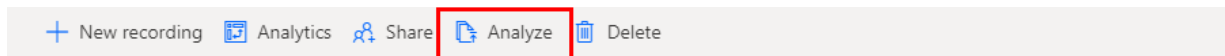
- **Analyze** - You can click **Analyze** to analyze your processes



- **Delete** - You can delete your Processes by clicking **Delete**



18. Now, let's click **Analyze** to analyze our processes. When we perform this action, Process advisor is going to analyze existing recordings to identify any bottlenecks within the business process.



Processes > Contoso Invoice Processing

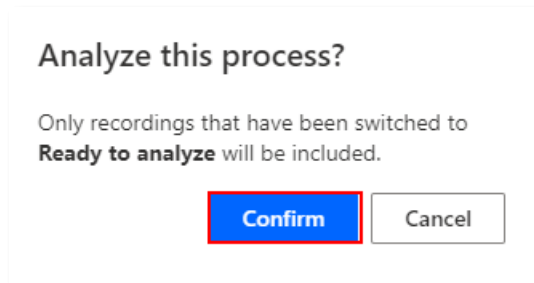
Details[Edit](#)

Description	Owner	
Submit a new invoice using Contoso Invoice App	Virtual Agent	
	Created	
	3/16/2021, 2:31 AM	
Status	Modified by	Modified
Analyzed	Virtual Agent	3/16/2021, 5:13 PM
Analyzed	Analyzed recordings	
3/16/2021, 5:13 PM	7	

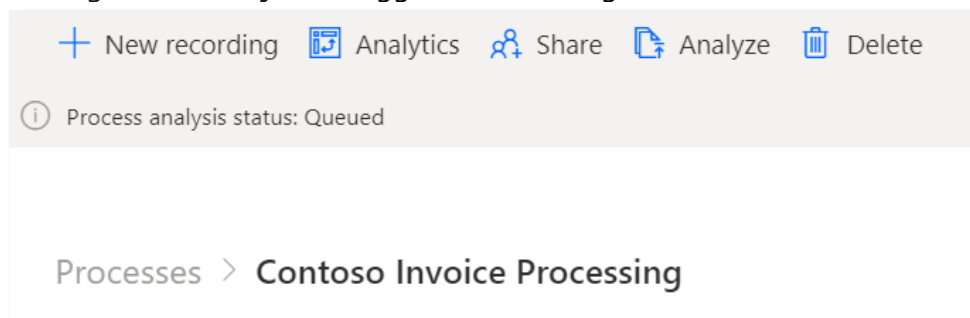
Shared with

Co-ownersContributors

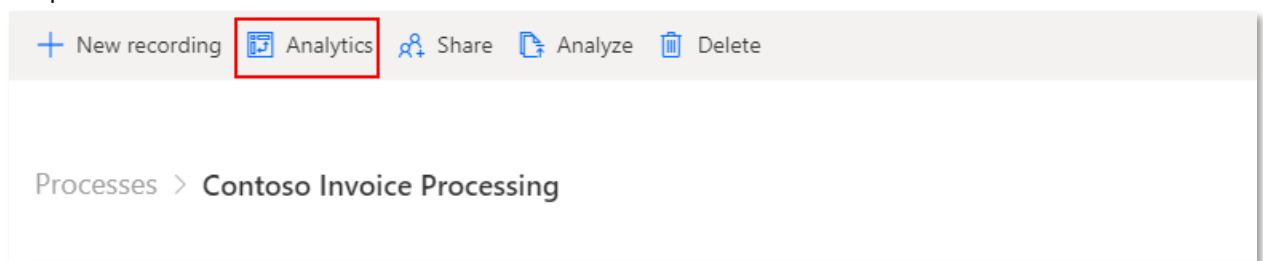
19. Click **Confirm** to proceed.



20. The analysis will take a few minutes to complete. During this process, a status message is displayed under the **New recording** button. If you run into an error during the analysis stage, click **Analyze** to trigger this action again.



21. Once it is done, click **Analytics** to see Contoso Invoice Processing process map and insights. This step may take a couple minutes to complete after the analysis has been performed.

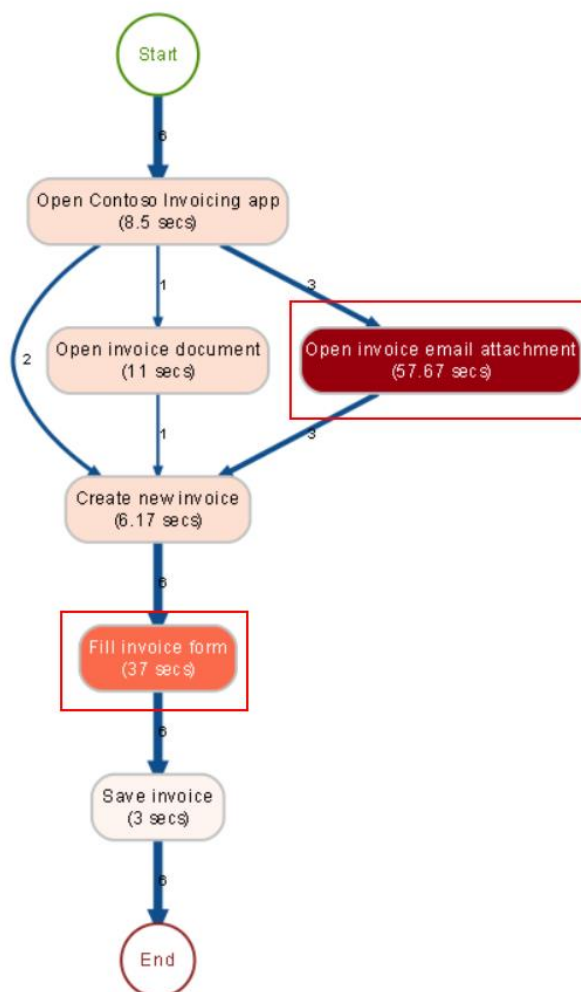


22. We can see the various steps in our business process and their related durations. These steps include:

- a. Open Contoso Invoicing app (8.5 seconds)
- b. Open invoice email attachment (57.67 seconds)
- c. Open invoice document (11 seconds)
- d. Create new invoice (6.17 seconds)
- e. Fill invoice form (37 seconds)
- f. Save invoice (3 seconds)

The process map makes it possible to visualize and analyze processes. By looking at a graphical representation of how your business processes are performed, you can gather insights about where improvement opportunities exist. To get to the process map, go to Analytics and select Process map tab.

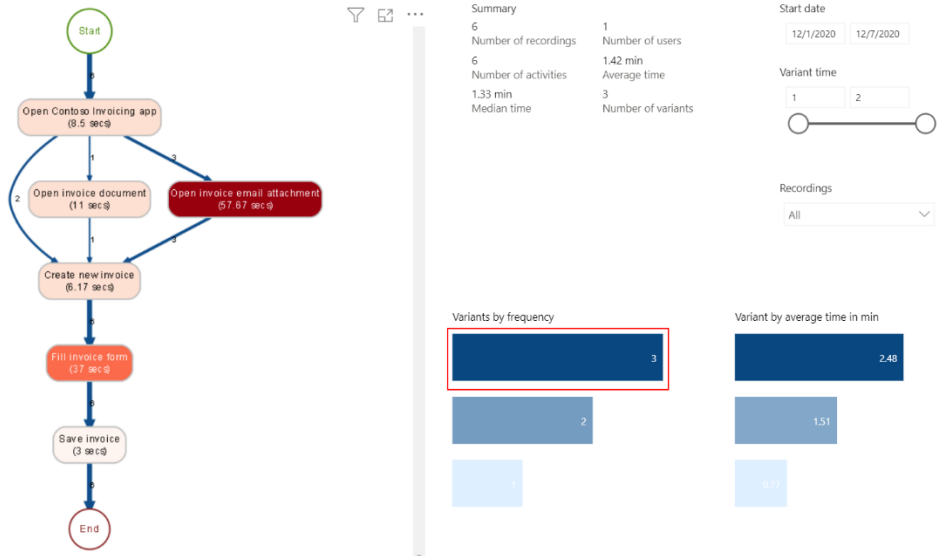
Different activity combinations and variants are shown separately on the process map. A process variant is a unique path from the very beginning to the very end of the process. In other words, a process variant is a specific activity sequence, like a "trace" through the process, from start to end. Each variant differs from the others by at least one activity. You can see additional metrics, frequency of the activities, as well as throughput time, on the process map. Frequency shows you the total number of recordings/cases passing through it. Throughput time is the time between the very first event of the case and the very last.



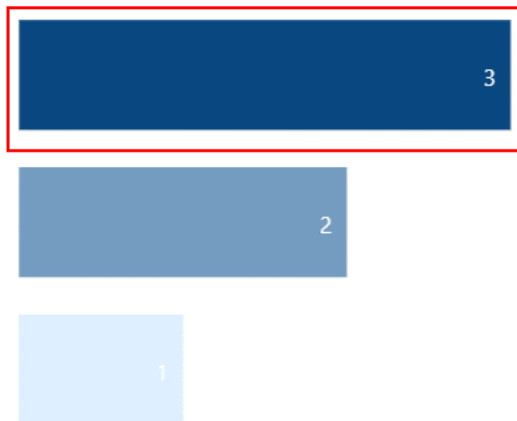
23. Click on the most frequent variant (the 1st blue box under Variants by frequency)

Note: It might take a while for you to see the changes from the chart

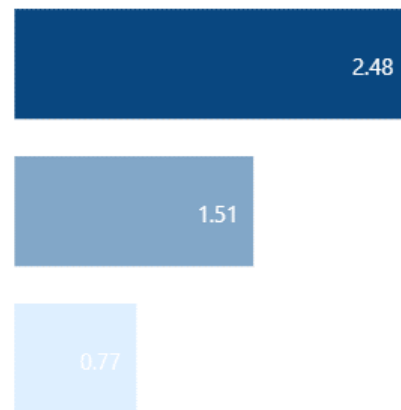
Processes > Contoso Invoice Processing > Analytics



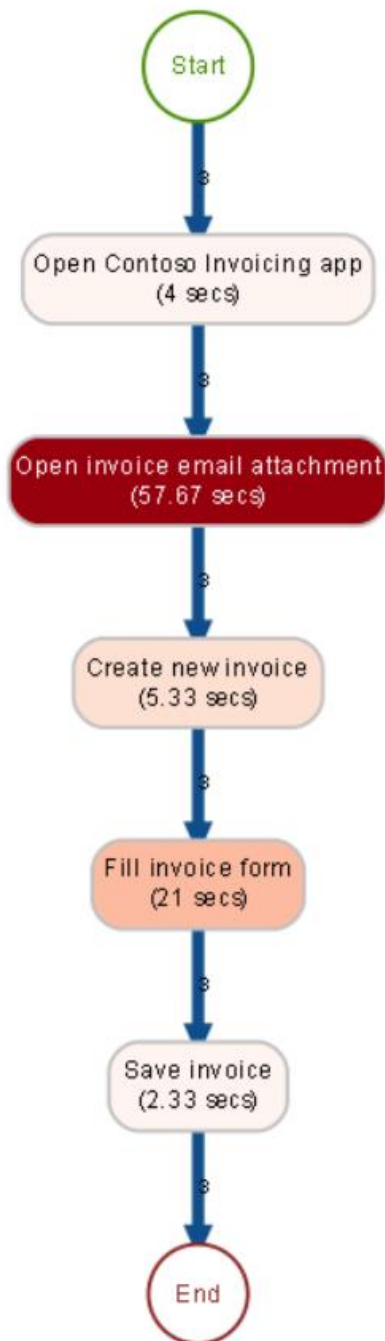
Variants by frequency



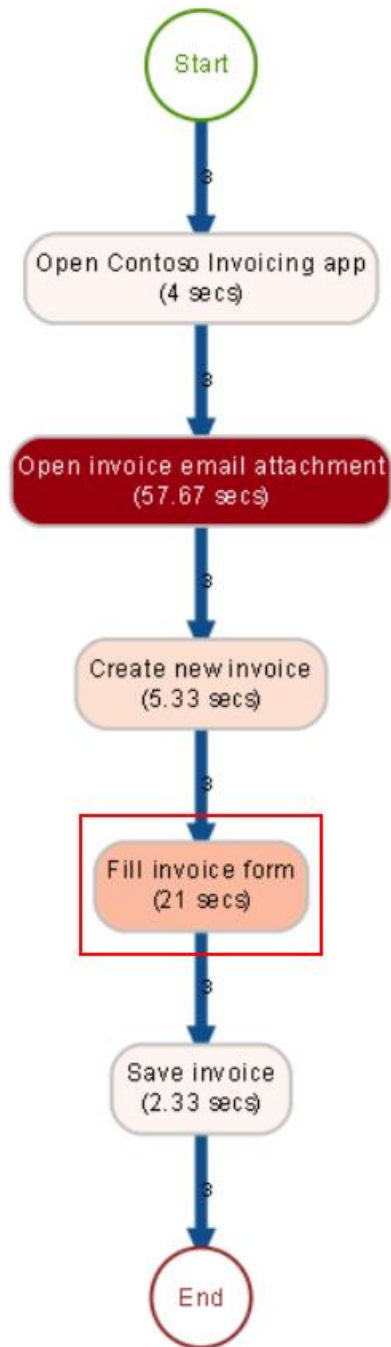
Variant by average time in min



24. You can see that the invoice coming through email is the most frequent process variant

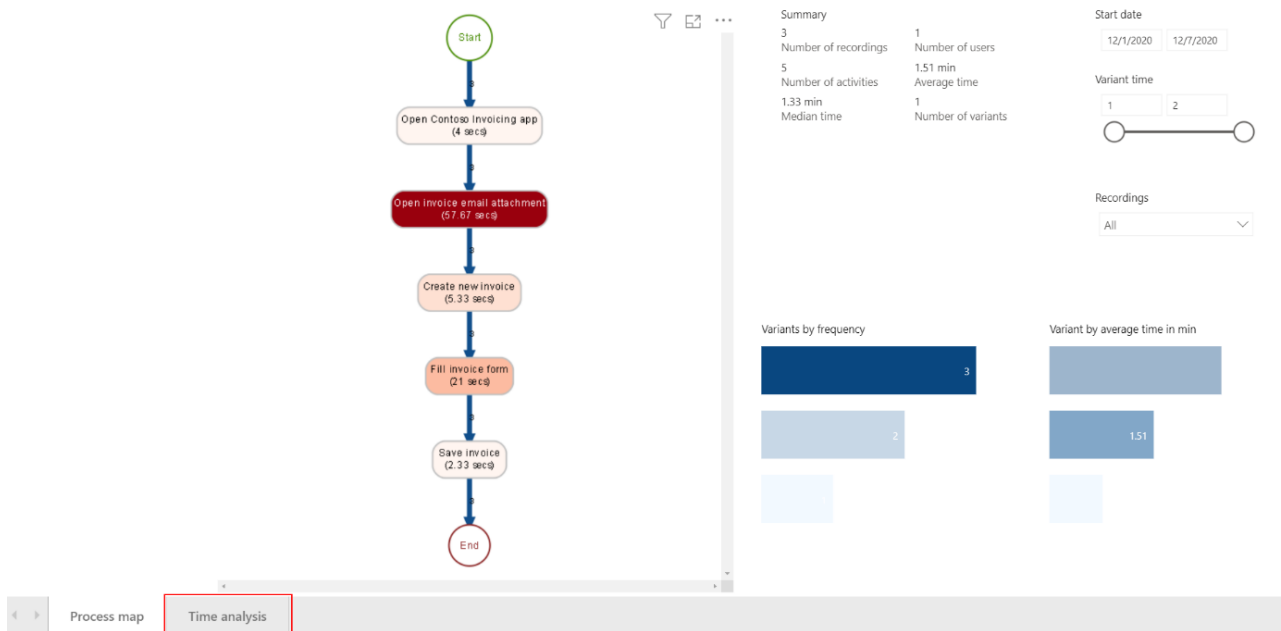


25. Additionally, we can see people spend a lot of their time in entering the information in the application. This helps identify the opportunity to automate the process.

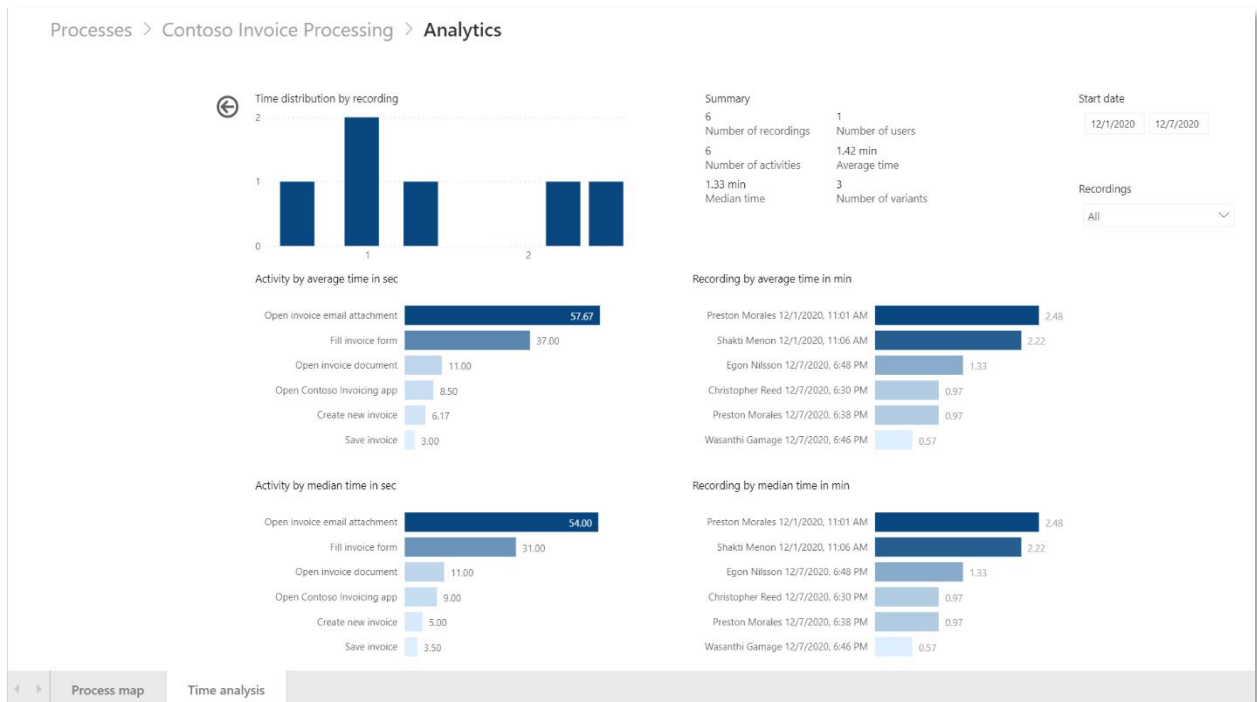


26. Click Time analysis

Processes > Contoso Invoice Processing > Analytics



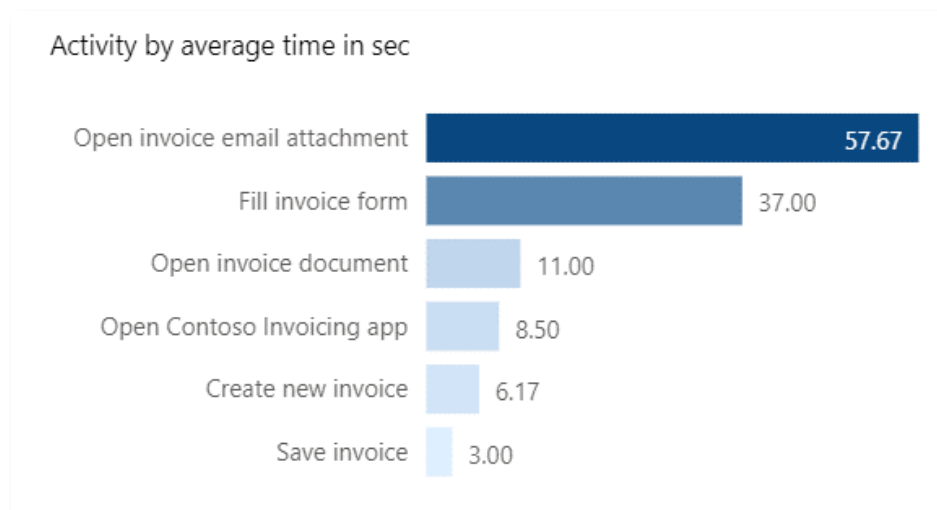
27. You can see the different time-based metrics.



28. You can take a closer look on the following chart:

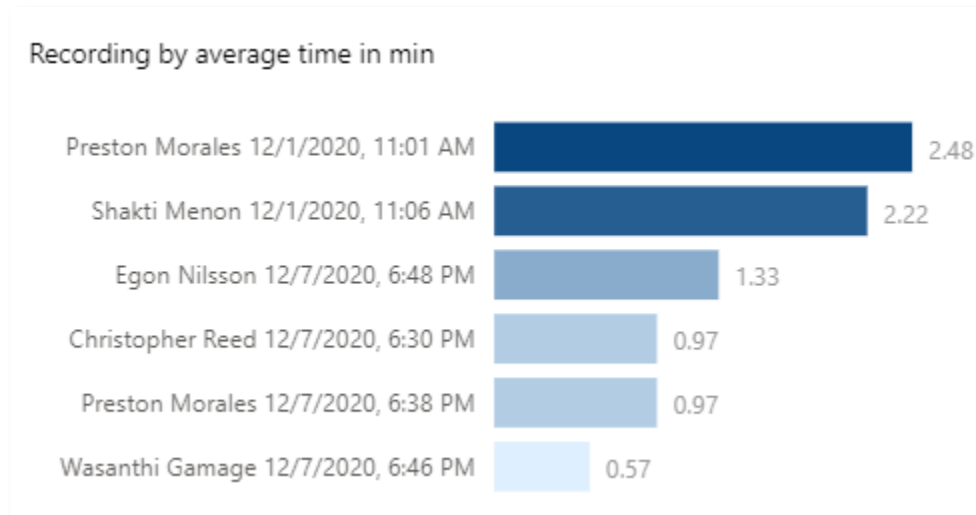
- **Activity by average time in sec**

You will notice that Open invoice email attachment and Fill invoice Form are taking the most time



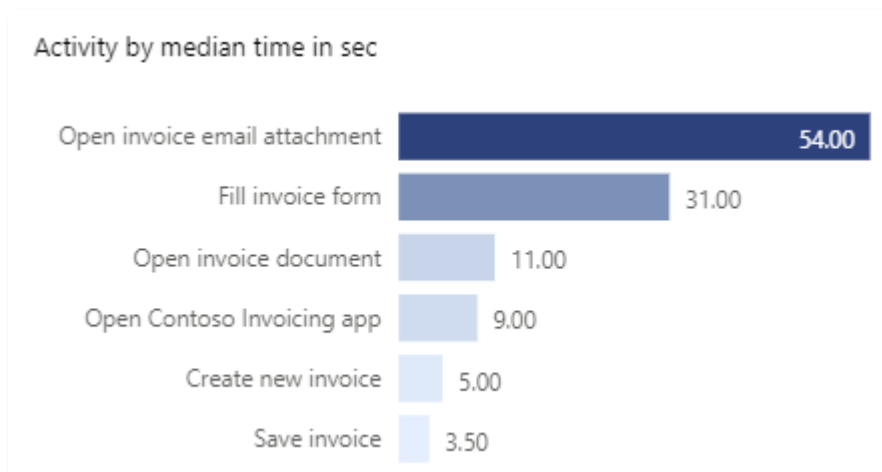
- **Recording by average time in min**

You will notice that Preston Morales and Shakti Menon are taking more time than others



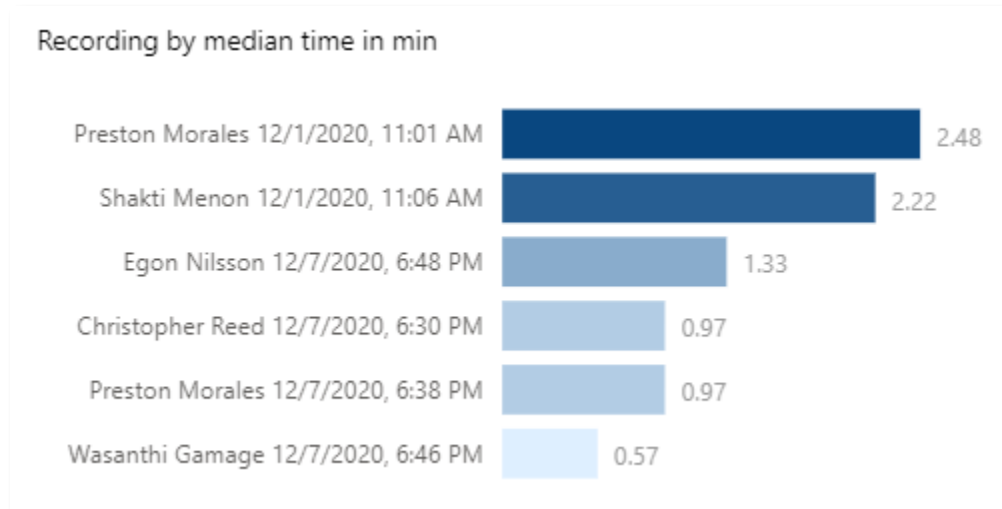
- **Activity by median time in sec**

You will notice that Fill invoice Form and Open invoice email attachment are taking the most time



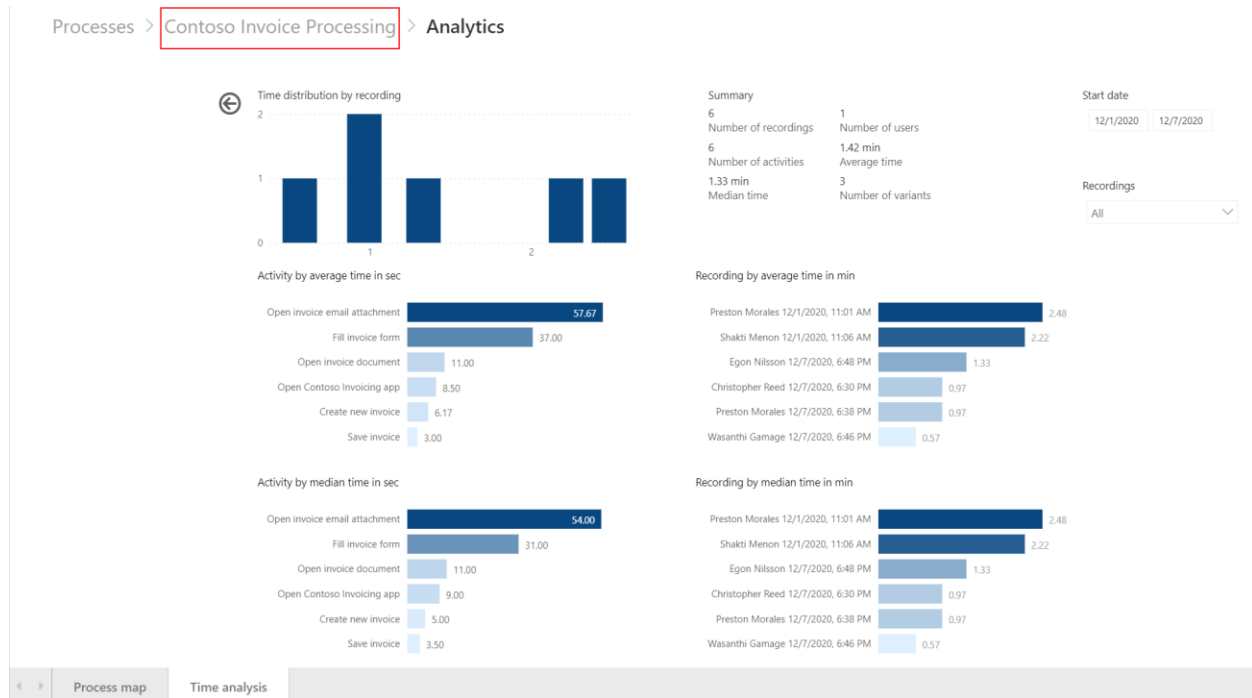
- **Recording by median time in min**

You will notice that Preston Morales and Shakti Menon are taking more time than others



Create your first recording

1. Now, let's go back to Contoso Invoice Processing processes by clicking **Contoso Invoice Processing**



2. Click **+ New Recording** to create your first recording

[+ New recording](#) [Analytics](#) [Share](#) [Analyze](#) [Delete](#)



Processes > **Contoso Invoice Processing**

Details [Edit](#)


Description	Owner	
Submit a new invoice using Contoso Invoice App	Virtual Agent	
	Created	
	3/16/2021, 2:31 AM	
Status	Modified by	Modified
Analyzed	Virtual Agent	3/16/2021, 5:13 PM
Analyzed	Analyzed recordings	
3/16/2021, 5:13 PM	7	

Shared with

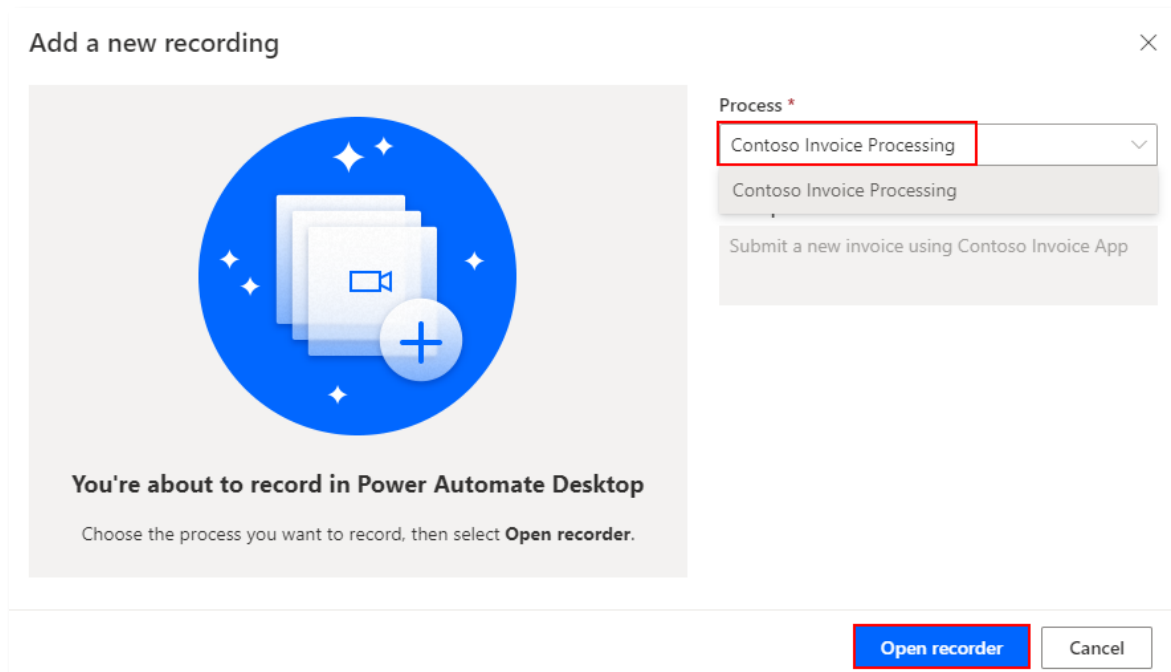
Co-owners

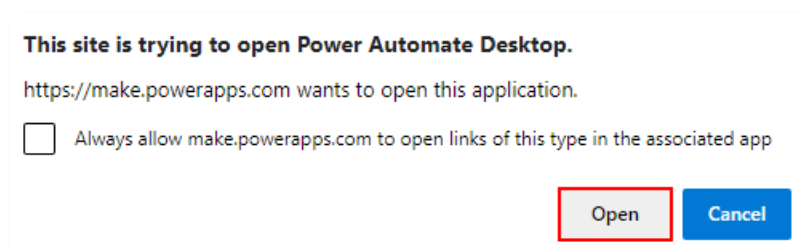
Contributors



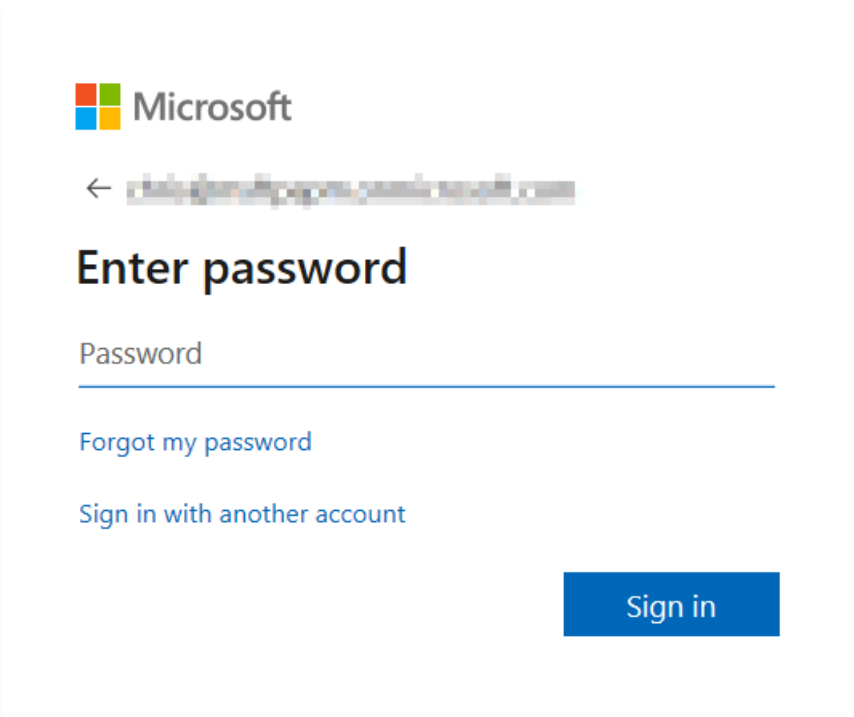
3. Select **Contoso Invoice Processing** under **Process**, then click **Open recorder**



4. You will see this pop-up window, click **Open**



5. Sign in with your test account

A screenshot of the Microsoft sign-in page. At the top left is the Microsoft logo. Below it is a back arrow and a blurred URL. The main heading is "Enter password". Below that is a text input field labeled "Password". Under the input field are two links: "Forgot my password" and "Sign in with another account". At the bottom right is a blue "Sign in" button.

Microsoft

← [https://login.microsoftonline.com/...](#)

Enter password

Password

[Forgot my password](#)

[Sign in with another account](#)

Sign in

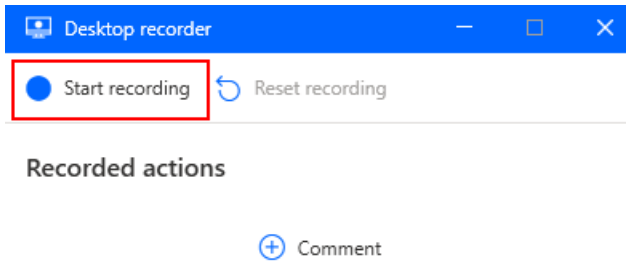
6. Open **Contoso Invoicing** app you downloaded in Lab 1



7. Click **Start recording**

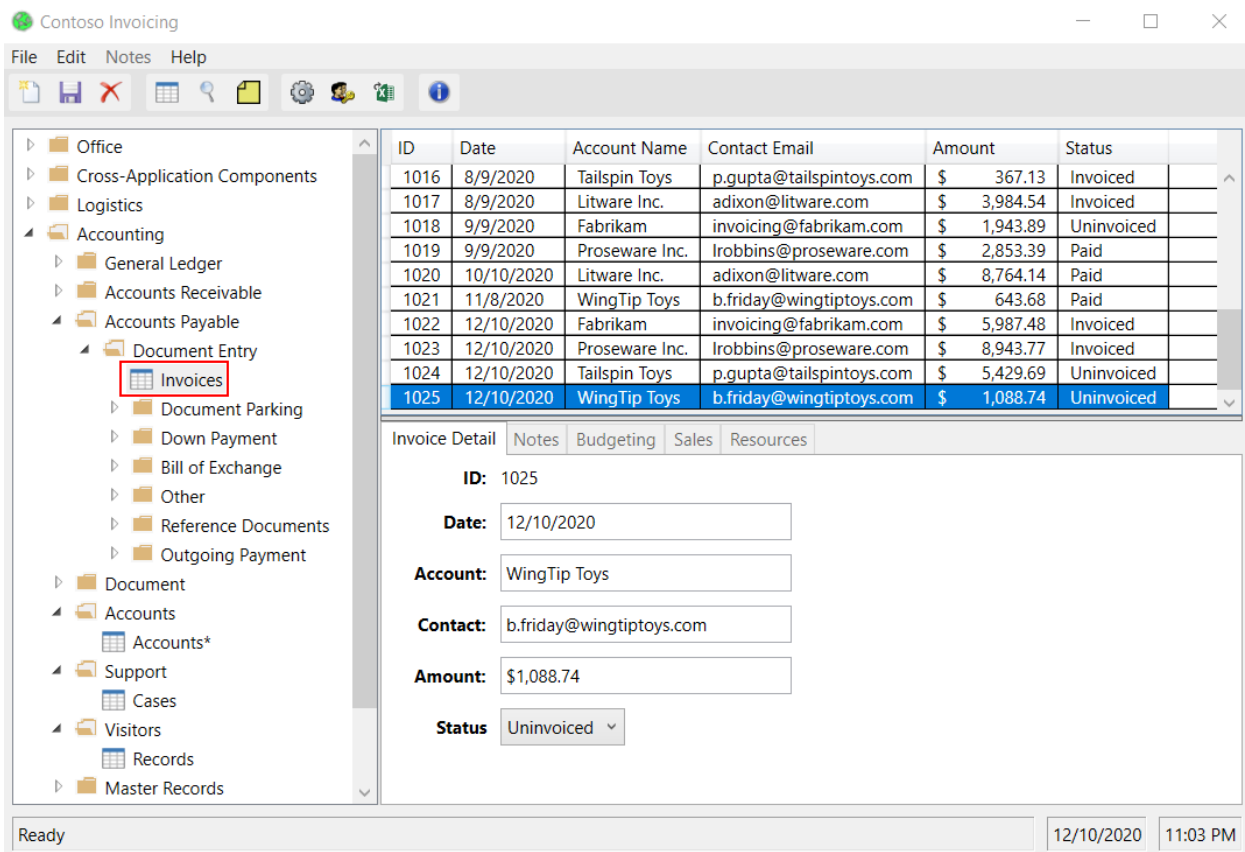
Tip 1: We are going to start recording. It is strongly recommended you get familiar with steps below before you begin recording. This allows you to finish the recording in one shot without the need to go back and forth with this manually which may alter results. If your first few recordings were not very good. Feel free to delete the recording after (using the ... icon) and practice more until you have a good recording

Tip 2: to help with the resilience of UI automation playbacks, it is recommended to minimize other apps from your desktop



8. In Contoso Invoicing, Click Invoices










Tip: As your mouse hovers over controls in the app, you'll notice that a **red outline** highlights each control. Don't record at very fast speed and always wait a bit between each mouse move and click, until you see the blue highlight rectangle around the control first, before you click to select the control. If the red highlight did not show up before you clicked, the action may not be recorded properly



9. Create a new record by clicking **New record** icon on the left

Contoso Invoicing

File Edit Notes Help

ID	Date	Account Name	Contact Email	Amount	Status
1016	8/9/2020	Tailspin Toys	p.gupta@tailspintoys.com	\$ 367.13	Invoiced
1017	8/9/2020	Litware Inc.	adixon@litware.com	\$ 3,984.54	Invoiced
1018	9/9/2020	Fabrikam	invoicing@fabrikam.com	\$ 1,943.89	Uninvoiced
1019	9/9/2020	Proseware Inc.	lrobbins@proseware.com	\$ 2,853.39	Paid
1020	10/10/2020	Litware Inc.	adixon@litware.com	\$ 8,764.14	Paid
1021	11/8/2020	WingTip Toys	b.friday@wingtiptoys.com	\$ 643.68	Paid
1022	12/10/2020	Fabrikam	invoicing@fabrikam.com	\$ 5,987.48	Invoiced
1023	12/10/2020	Proseware Inc.	lrobbins@proseware.com	\$ 8,943.77	Invoiced
1024	12/10/2020	Tailspin Toys	p.gupta@tailspintoys.com	\$ 5,429.69	Uninvoiced
1025	12/10/2020	WingTip Toys	b.friday@wingtiptoys.com	\$ 1,088.74	Uninvoiced

Invoice Detail | Notes | Budgeting | Sales | Resources

ID: 1025

Date: 12/10/2020

Account: WingTip Toys

Contact: b.friday@wingtiptoys.com

Amount: \$1,088.74

Status: Uninvoiced

Ready 12/10/2020 11:03 PM

10. Use these values to complete the recording (Note: you can also use any arbitrary values)

- **Date:** Current date
- **Account:** WingTip Toys
- **Contact:** b.friday@wingtiptoys.com
- **Amount:** \$500
- **Status:** Invoiced

Contoso Invoicing

File Edit Notes Help

Office

Cross-Application Components

Logistics

Accounting

General Ledger

Accounts Receivable

Accounts Payable

Document Entry

Invoices*

Document Parking

Down Payment

Bill of Exchange

Other

Reference Documents

Outgoing Payment

Document

Accounts

Accounts*

Support

Cases

Visitors

Records

Master Records

ID	Date	Account Name	Contact Email	Amount	Status
1017	8/9/2020	Litware Inc.	adixon@litware.com	\$ 3,984.54	Invoiced
1018	9/9/2020	Fabrikam	invoicing@fabrikam.com	\$ 1,943.89	Uninvoiced
1019	9/9/2020	Proseware Inc.	lrobbins@proseware.com	\$ 2,853.39	Paid
1020	10/10/2020	Litware Inc.	adixon@litware.com	\$ 8,764.14	Paid
1021	11/8/2020	WingTip Toys	b.friday@wingtiptoys.com	\$ 643.68	Paid
1022	12/10/2020	Fabrikam	invoicing@fabrikam.com	\$ 5,987.48	Invoiced
1023	12/10/2020	Proseware Inc.	lrobbins@proseware.com	\$ 8,943.77	Invoiced
1024	12/10/2020	Tailspin Toys	p.gupta@tailspintoys.com	\$ 5,429.69	Uninvoiced
1025	12/10/2020	WingTip Toys	b.friday@wingtiptoys.com	\$ 1,088.74	Uninvoiced
1026	12/10/2020	WingTip Toys	b.friday@wingtiptoys.com	\$ 500.00	Invoiced

Invoice Detail Notes Budgeting Sales Resources

ID: 1026

Date: 12/10/2020

Account: WingTip Toys

Contact: b.friday@wingtiptoys.com

Amount: \$500.00

Status: Invoiced

Ready 12/10/2020 11:10 PM

11. Click Save icon to keep your changes

Contoso Invoicing

File Edit Notes Help

Save icon highlighted

ID	Date	Account Name	Contact Email	Amount	Status
1017	8/9/2020	Litware Inc.	adixon@litware.com	\$ 3,984.54	Invoiced
1018	9/9/2020	Fabrikam	invoicing@fabrikam.com	\$ 1,943.89	Uninvoiced
1019	9/9/2020	Proseware Inc.	lrobbins@proseware.com	\$ 2,853.39	Paid
1020	10/10/2020	Litware Inc.	adixon@litware.com	\$ 8,764.14	Paid
1021	11/8/2020	WingTip Toys	b.friday@wingtiptoy.com	\$ 643.68	Paid
1022	12/10/2020	Fabrikam	invoicing@fabrikam.com	\$ 5,987.48	Invoiced
1023	12/10/2020	Proseware Inc.	lrobbins@proseware.com	\$ 8,943.77	Invoiced
1024	12/10/2020	Tailspin Toys	p.gupta@tailspintoys.com	\$ 5,429.69	Uninvoiced
1025	12/10/2020	WingTip Toys	b.friday@wingtiptoy.com	\$ 1,088.74	Uninvoiced
1026	12/10/2020	WingTip Toys	b.friday@wingtiptoy.com	\$ 500.00	Invoiced

Invoice Detail | Notes | Budgeting | Sales | Resources

ID: 1026

Date: 12/10/2020

Account: WingTip Toys

Contact: b.friday@wingtiptoy.com

Amount: \$500.00

Status: Invoiced

Ready 12/10/2020 11:10 PM

12. Click **Finish** in the Desktop recorder and close the **Contoso Invoicing** app.

Note: We did not record closing the app. This is for simplicity to view the result as the Contoso app will remain open after we test the Desktop flow. In a real-world use case, you can decide to record the closing action or not.

Note 2: By default, the Desktop flow will launch a new instance of the app every time when it runs. Even if you leave the app open, the next Desktop flow run will launch another new app window. You can also change this behavior to only attach to existing app instead of launching another new instance from the portal (details see following steps).

The screenshot shows the 'Contoso Invoicing' application window on the left and the 'Desktop recorder' window on the right. The application window has a menu bar (File, Edit, Notes, Help) and a toolbar. A left-hand navigation pane lists various categories like Office, Logistics, Accounting, and Accounts Payable. The main area displays a table of invoices with columns for ID, Date, Account Name, Contact Email, Amount, and Status. The selected row (ID 1032) is highlighted in blue. Below the table, the 'Invoice Detail' tab is active, showing fields for ID (1032), Date (9/07/2020), Account (WingTip Toys), Contact (b.friday@wingtip toys.com), Amount (\$500.00), and Status (Invoiced). The Desktop recorder window on the right shows a list of recorded actions: 'Populate text field in window' (twice) and 'Set drop down list value in window'. At the bottom of the recorder window, there are buttons for 'Help', 'Finish' (highlighted with a red box), and 'Cancel'.

ID	Date	Account Name	Contact Email	Amount	Status
1024	9/7/2020	Tailspin Toys	p.gupta@tailspintoys.com	\$ 5,429.69	Uninvoiced
1025	9/7/2020	WingTip Toys	b.friday@wingtip toys.com	\$ 1,088.74	Uninvoiced
1026	9/7/2020	WingTip Toys	b.friday@wingtip toys.com	\$ 500.00	Invoiced
1027	9/7/2020	WingTip Toys	b.friday@wingtip toys.com	\$ 500.00	Invoiced
1028	9/7/2020	WingTip Toys	b.friday@wingtip toys.com	\$ 500.00	Invoiced
1029	9/7/2020	WingTip Toys	b.friday@wingtip toys.com	\$ 500.00	Invoiced
1030	9/7/2020	WingTip Toys	b.friday@wingtip toys.com	\$ 200.00	Invoiced
1031	9/7/2020	WingTip Toys	b.friday@wingtip toys.com	\$ 200.00	Invoiced
1032	9/7/2020	WingTip Toys	b.friday@wingtip toys.com	\$ 500.00	Invoiced

Recorded actions

- Start recording
- Reset recording

Populate text field in window

Populate Edit 'TextBox' 2 on screen:

Window 'Contoso Invoicing' with text: b.friday@wingtip toys.com

Populate text field in window

Populate Edit 'TextBox' 1 on screen:

Window 'Contoso Invoicing' with text: 500

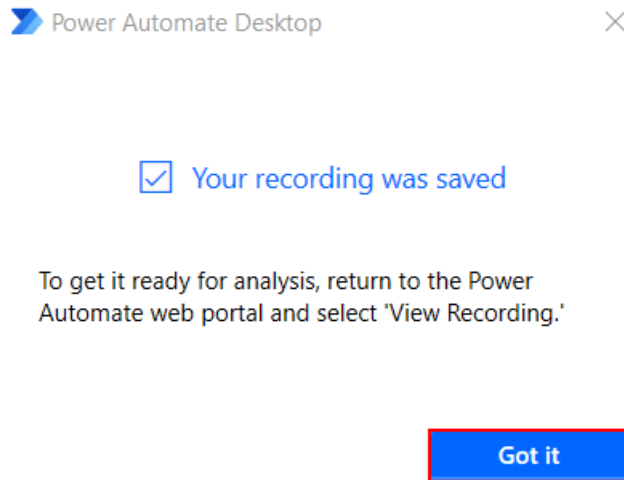
Set drop down list value in window

Select option by name Invoiced of UI element Combo Box 'ComboBox' on screen

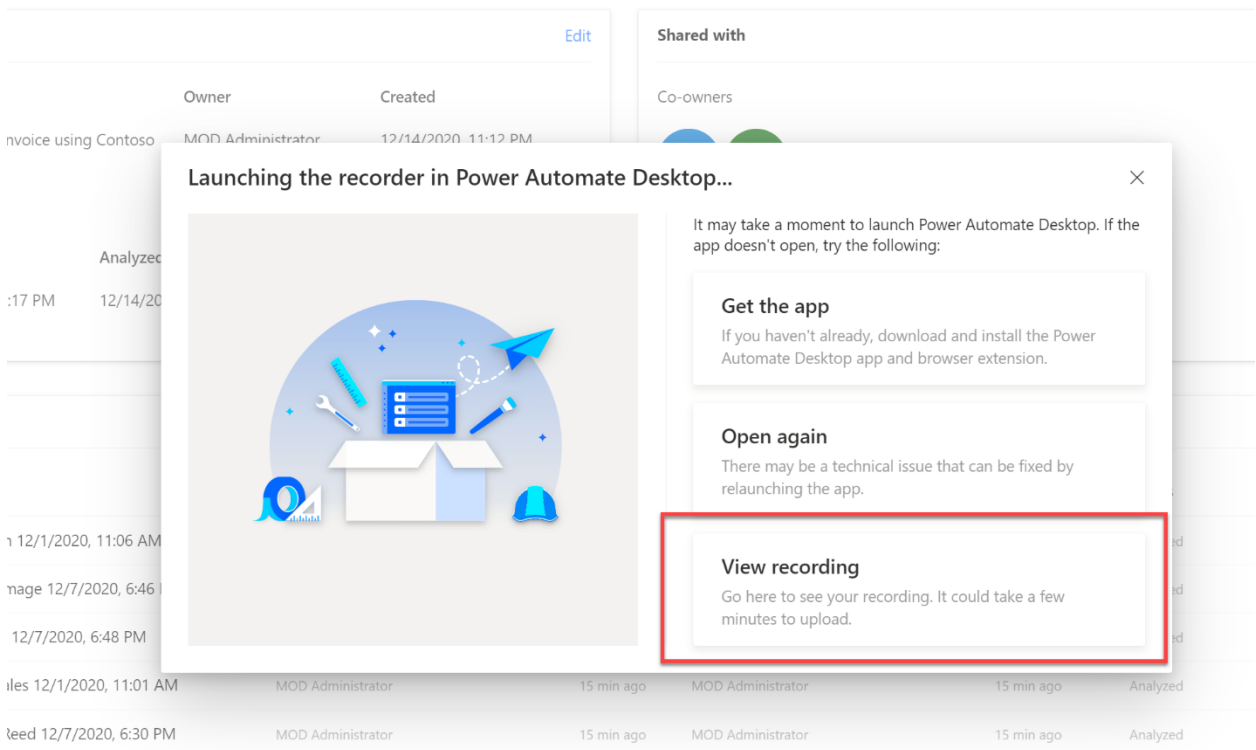
Window 'Contoso Invoicing'

Help Finish Cancel

13. You will see that your recording has been saved, click **Got it**



14. Go back to Process advisor and select **View recording**.



If the window is not present, navigate back to "Processes" and open "Contoso Invoice Processing". Then click the last recording.

Processes > **Contoso Invoice Processing**

Details [Edit](#)

Description	Owner	Created
Submit a new invoice using Contoso Invoice App	Virtual Agent	3/16/2021, 2:31 AM
	Status	Modified by
	Analyzed	Virtual Agent
Modified	Analyzed	Analyzed recordings
3/16/2021, 3:09 AM	12/14/2020, 5:45 AM	7

Shared with [Manage](#)

Co-owners

Contributors

Recordings [+ New recording](#)

Name	Created by	Created	Modified by	Modified ↓	Status ⓘ
Virtual Agent 3/16/2021, 3:04 AM	Virtual Agent	6 min ago	Virtual Agent	1 min ago	Not analyzed
Shakti Menon 12/1/2020, 11:06 AM	Virtual Agent	39 min ago	Virtual Agent	39 min ago	Analyzed

15. When you click on a specific action, you will be able to see a screenshot of that corresponding action.

Processes > Contoso Invoice Processing > Recordings > **Virtual Agent 3/16/2021, 3:04 AM**

Start time: 03/16/2021, 03:07:15 AM **Status:** Not analyzed **Actions:** 8 **Length:** 1 minute(s)

Timestamp	Application	Name	Description
03:07:15 AM	---	Press button in window	Contoso Invoicing - 1 running window in Quick Launch Bar
03:07:19 AM	LegacyInvoicingApp	Click UI element in window	Text 'Invoices' in Window 'Contoso Invoicing'
03:07:29 AM	LegacyInvoicingApp	Click UI element in window	Image 'Image' in Window 'Contoso Invoicing'
03:07:39 AM	LegacyInvoicingApp	Populate text field in wind...	Edit 'TextBox' in Window 'Contoso Invoicing'; Text:'WingTip Toys'
03:08:01 AM	LegacyInvoicingApp	Populate text field in wind...	Edit 'TextBox' 2 in Window 'Contoso Invoicing'; Text:'b.friday@wingtiploys.com'
03:08:10 AM	LegacyInvoicingApp	Populate text field in wind...	Edit 'TextBox' 3 in Window 'Contoso Invoicing'; Text:'\$500'
03:08:15 AM	LegacyInvoicingApp	Set drop-down list value L...	Combo Box 'ComboBox' in Window 'Contoso Invoicing'
03:08:19 AM	LegacyInvoicingApp	Click UI element in window	Image 'Image' 2 in Window 'Contoso Invoicing'

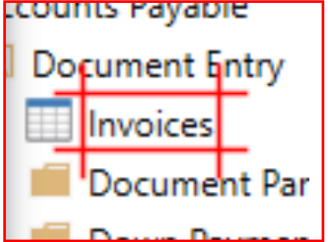
Action name *

Click UI element in window

Description

Text 'Invoices' in Window 'Contoso Invoicing'

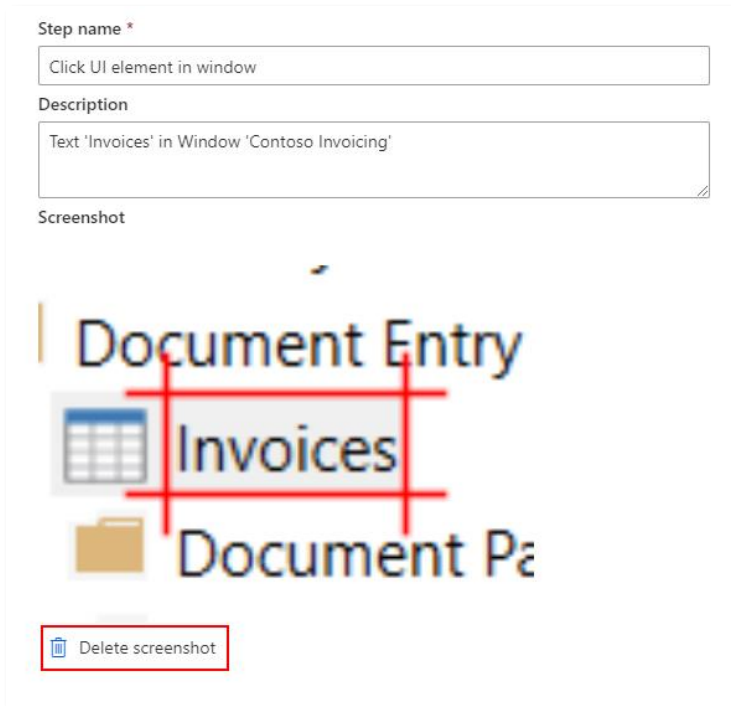
Screenshot



Delete screenshot

16. If you don't want to save the screenshot, you can also delete your screenshots by clicking **Delete screenshot** on the right corner

Note: It will not affect your recordings analysis by deleting the screenshots.



17. Long business processes may require the need to group related tasks to document or describe the overall business process. We can use a feature called **activities** that allows us to break-up a large business process into smaller activities which enables better management. To label your first activity. Select **+ Add activity** to add an activity header

Tip1: Since we are adding a recording to an existing process, we have some existing activities that are available for us to use. It is recommended you use existing activity name; this creates a more consistent and accurate process map.

Tip2: Activity names will be available in the dropdown list whenever a recording is saved. To remove activity names from the dropdown list after it was removed from all recordings that used that activity name, you need to analyze the recording.

Tips3: To analyze, you need at least two activities. Otherwise, the process map would not be very meaningful.

+ Add activity

Processes > Contoso Invoice Processing > Recordings > Virtual Agent 3/16/2021, 3:04 AM

Start time: 03/16/2021, 03:07:15 AM **Status:** Not analyzed **Actions:** 8 **Length:** 1 minute(s)

Timestamp	Application	Name	Description
03:07:15 AM	---	Press button in window	Contoso Invoicing - 1 running window in Quick Launch Bar
03:07:19 AM	LegacyInvoicingApp	Click UI element in window	Text 'Invoices' in Window 'Contoso Invoicing'
03:07:29 AM	LegacyInvoicingApp	Click UI element in window	Image 'Image' in Window 'Contoso Invoicing'
03:07:39 AM	LegacyInvoicingApp	Populate text field in wind...	Edit 'TextBox' in Window 'Contoso Invoicing'; Text:'WingTip Toys'
03:08:01 AM	LegacyInvoicingApp	Populate text field in wind...	Edit 'TextBox' 2 in Window 'Contoso Invoicing'; Text:'b.friday@wingtiptoy.com'
03:08:10 AM	LegacyInvoicingApp	Populate text field in wind...	Edit 'TextBox' 3 in Window 'Contoso Invoicing'; Text:'\$500'
03:08:15 AM	LegacyInvoicingApp	Set drop-down list value i...	Combo Box 'ComboBox' in Window 'Contoso Invoicing'
03:08:19 AM	LegacyInvoicingApp	Click UI element in window	Image 'Image' 2 in Window 'Contoso Invoicing'

18. Let's label step 1 to 2 as your first activity. Move the activity header above the first step. Here's where you want your first activity to start.

+ Add activity Delete

Processes > Contoso Invoice Processing > Recordings > Virtual Agent 3/16/2021, 3:04 AM

Start time: 03/16/2021, 03:07:15 AM **Status:** Not analyzed **Actions:** 8 **Length:** 1 minute(s)

Timestamp	Application	Name	Description
03:07:15 AM	---	Press button in window	Contoso Invoicing - 1 running window in Quick Launch Bar
03:07:19 AM	LegacyInvoicingApp	Click UI element in window	Text 'Invoices' in Window 'Contoso Invoicing'
03:07:29 AM	LegacyInvoicingApp	Click UI element in window	Image 'Image' in Window 'Contoso Invoicing'
03:07:39 AM	LegacyInvoicingApp	Populate text field in wind...	Edit 'TextBox' in Window 'Contoso Invoicing'; Text:'WingTip Toys'
03:08:01 AM	LegacyInvoicingApp	Populate text field in wind...	Edit 'TextBox' 2 in Window 'Contoso Invoicing'; Text:'b.friday@wingtip toys.com'
03:08:10 AM	LegacyInvoicingApp	Populate text field in wind...	Edit 'TextBox' 3 in Window 'Contoso Invoicing'; Text:'\$500'
03:08:15 AM	LegacyInvoicingApp	Set drop-down list value i...	Combo Box 'ComboBox' in Window 'Contoso Invoicing'
03:08:19 AM	LegacyInvoicingApp	Click UI element in window	Image 'Image' 2 in Window 'Contoso Invoicing'

19. Name your activity on the right side of the screen. You can use the dropdown menu to find activity names that already exist for the process or create your own. For this Lab, we will use the existing activity name **Open Contoso Invoicing app** from the dropdown menu to name our first activity.

Name


Open Contoso Invoicing app

▼

- Open Contoso Invoicing app
- Create new invoice
- Open invoice email attachment
- Fill invoice form
- Save invoice
- Open invoice document

20. Should you make a mistake creating an activity name, you can always delete it by clicking on the trash can icon next to the + Add activity to delete an activity name. Otherwise, proceed to next step.

+ Add activity

 Delete

Processes > Contoso Invoice Processing > Recordings > Virtual Agent 3/16/2021, 3:04 AM

Start time: 03/16/2021, 03:07:15 AM Status: Analyzed Actions: 8 Length: 1 minute(s)

Timestamp	Application	Name	Description
Open Contoso Invoicing app			
03:07:15 AM	—	Press button in window	Contoso Invoicing - 1 running window in Quick Launch Bar
03:07:19 AM	LegacyInvoicingApp	Click UI element in window	Text 'Invoices' in Window 'Contoso Invoicing'

21. Select + Add activity to label your second activity

+ Add activity

Delete

Save

Ready to analyze

Close

Processes > Contoso Invoice Processing > Recordings > Virtual Agent 3/16/2021, 3:04 AM

Start time: 03/16/2021, 03:07:15 AM Status: Not analyzed Actions: 8 Length: 1 minute(s)

Timestamp	Application	Name	Description
		Open Contoso Invoicing app	
03:07:15 AM		Press button in window	Contoso Invoicing - 1 running window in Quick Launch Bar
03:07:19 AM	LegacyInvoicingApp	Click UI element in window	Text 'Invoices' in Window 'Contoso Invoicing'
03:07:29 AM	LegacyInvoicingApp	Click UI element in window	Image 'Image' in Window 'Contoso Invoicing'
03:07:39 AM	LegacyInvoicingApp	Populate text field in wind...	Edit 'TextBox' in Window 'Contoso Invoicing'; Text:'WingTip Toys'
03:08:01 AM	LegacyInvoicingApp	Populate text field in wind...	Edit 'TextBox' 2 in Window 'Contoso Invoicing'; Text:'b.friday@wingtip toys.com'
03:08:10 AM	LegacyInvoicingApp	Populate text field in wind...	Edit 'TextBox' 3 in Window 'Contoso Invoicing'; Text:'\$500'
03:08:15 AM	LegacyInvoicingApp	Set drop-down list value i...	Combo Box 'ComboBox' in Window 'Contoso Invoicing'
03:08:19 AM	LegacyInvoicingApp	Click UI element in window	Image 'Image' 2 in Window 'Contoso Invoicing'

Name

Open Contoso Invoicing app

Quick tips

- Select a published activity, or create a new one.
- Try to create a simple and meaningful name, such as "Download invoice attachment" or "Enter invoice details".
- To see an activity on the process map, publish the process first.
- Deleting an activity will only remove it from this recording.

22. Let's label step 3 to 9 as your second activity. Move the activity header above the third step. Here's where you want your second activity to start

+ Add activity

Delete

Processes > Contoso Invoice Processing > Recordings > Virtual Agent 3/16/2021, 3:04 AM

Start time: 03/16/2021, 03:07:15 AM Status: Not analyzed Actions: 8 Length: 1 minute(s)

Timestamp	Application	Name	Description
		Open Contoso Invoicing app	
03:07:15 AM		Press button in window	Contoso Invoicing - 1 running window in Quick Launch Bar
03:07:19 AM	LegacyInvoicingApp	Click UI element in window	Text 'Invoices' in Window 'Contoso Invoicing'
03:07:29 AM	LegacyInvoicingApp	Click UI element in window	Image 'Image' in Window 'Contoso Invoicing'
03:07:39 AM	LegacyInvoicingApp	Populate text field in wind...	Edit 'TextBox' in Window 'Contoso Invoicing'; Text:'WingTip Toys'
03:08:01 AM	LegacyInvoicingApp	Populate text field in wind...	Edit 'TextBox' 2 in Window 'Contoso Invoicing'; Text:'b.friday@wingtip toys.com'
03:08:10 AM	LegacyInvoicingApp	Populate text field in wind...	Edit 'TextBox' 3 in Window 'Contoso Invoicing'; Text:'\$500'
03:08:15 AM	LegacyInvoicingApp	Set drop-down list value i...	Combo Box 'ComboBox' in Window 'Contoso Invoicing'
03:08:19 AM	LegacyInvoicingApp	Click UI element in window	Image 'Image' 2 in Window 'Contoso Invoicing'

23. We are also going to use the existing activity name **Create new invoice** from the dropdown menu to name our second activity.

Name

Create new invoice

Open Contoso Invoicing app

Create new invoice

Open invoice email attachment

Fill invoice form

Save invoice

Open invoice document

24. Click Save to save your changes

+ Add activity

Delete

Save

Ready to analyze

Close

Processes > Contoso Invoice Processing > Recordings > Virtual Agent 3/16/2021, 3:04 AM

Start time: 03/16/2021, 03:07:15 AM

Status: Not analyzed

Actions: 8

Length: 1 minute(s)

Timestamp	Application	Name	Description
Open Contoso Invoicing app			
03:07:15 AM	---	Press button in window	Contoso Invoicing - 1 running window in Quick Launch Bar
03:07:19 AM	LegacyInvoicingApp	Click UI element in window	Text 'Invoices' in Window 'Contoso Invoicing'
Create new invoice			
03:07:29 AM	LegacyInvoicingApp	Click UI element in window	Image 'Image' in Window 'Contoso Invoicing'
03:07:39 AM	LegacyInvoicingApp	Populate text field in wind...	Edit 'TextBox' in Window 'Contoso Invoicing'; Text: 'WingTip Toys'
03:08:01 AM	LegacyInvoicingApp	Populate text field in wind...	Edit 'TextBox' 2 in Window 'Contoso Invoicing'; Text: 'b.friday@wingtiploys.com'
03:08:10 AM	LegacyInvoicingApp	Populate text field in wind...	Edit 'TextBox' 3 in Window 'Contoso Invoicing'; Text: '\$500'
03:08:15 AM	LegacyInvoicingApp	Set drop-down list value L...	Combo Box 'ComboBox' in Window 'Contoso Invoicing'
03:08:19 AM	LegacyInvoicingApp	Click UI element in window	Image 'Image' 2 in Window 'Contoso Invoicing'

Name

Create new invoice

Quick tips

- Select a published activity, or create a new one.
- Try to create a simple and meaningful name, such as "Download invoice attachment" or "Enter invoice details".
- To see an activity on the process map, publish the process first.
- Deleting an activity will only remove it from this recording.

25. Your recoding is now ready to analyze. Toggle the Ready to analyze button.

The screenshot shows the Process Advisor interface. At the top, there's a header bar with '+ Add activity', 'Delete', 'Save', a toggle switch for 'Ready to analyze' (which is currently off), and a 'Close' button. Below this, the breadcrumb navigation reads 'Processes > Contoso Invoice Processing > Recordings > Virtual Agent 3/16/2021, 3:04 AM'. The recording details show 'Start time: 03/16/2021, 03:07:15 AM', 'Status: Not analyzed', 'Actions: 8', and 'Length: 1 minute(s)'. A table lists the activities performed during the recording. On the right, there's a 'Name' field with a dropdown menu set to 'Create new invoice' and a 'Quick tips' section with four bullet points. At the bottom, there's a footer bar with 'Save', a toggle switch for 'Ready to analyze' (which is currently off), and a 'Close' button.

Timestamp	Application	Name	Description
Open Contoso Invoicing app			
03:07:15 AM	---	Press button in window	Contoso Invoicing - 1 running window in Quick Launch Bar
03:07:19 AM	LegacyInvoicingApp	Click UI element in window	Text 'Invoices' in Window 'Contoso Invoicing'
Create new invoice			
03:07:29 AM	LegacyInvoicingApp	Click UI element in window	Image 'Image' in Window 'Contoso Invoicing'
03:07:39 AM	LegacyInvoicingApp	Populate text field in wind...	Edit 'TextBox' in Window 'Contoso Invoicing'; Text: 'WingTip Toys'
03:08:01 AM	LegacyInvoicingApp	Populate text field in wind...	Edit 'TextBox 2' in Window 'Contoso Invoicing'; Text: 'b.friday@wingtiploys.com'
03:08:10 AM	LegacyInvoicingApp	Populate text field in wind...	Edit 'TextBox 3' in Window 'Contoso Invoicing'; Text: '\$500'
03:08:15 AM	LegacyInvoicingApp	Set drop-down list value L...	Combo Box 'ComboBox' in Window 'Contoso Invoicing'
03:08:19 AM	LegacyInvoicingApp	Click UI element in window	Image 'Image 2' in Window 'Contoso Invoicing'

26. Click Save and then click Close to return to the process details page

The screenshot shows the Process Advisor interface after saving the recording. The 'Ready to analyze' toggle switch is now turned on. The 'Save' button is highlighted with a red box. The 'Close' button is also highlighted with a red box. The rest of the interface, including the breadcrumb navigation, recording details, activity table, and quick tips, remains the same as in the previous screenshot.

27. We are going to analyze your recording now, click **Contoso Invoice Processing**

[+ New recording](#)

Processes > **Contoso Invoice Processing** > Recordings





	Name	Created by	Created
<input type="radio"/>	Virtual Agent 3/16/2021, 3:04 AM	Virtual Agent	28 min ago
<input type="radio"/>	Shakti Menon 12/1/2020, 11:06 AM	Virtual Agent	1 h ago
<input type="radio"/>	Wasanthi Gamage 12/7/2020, 6:46 PM	Virtual Agent	1 h ago
<input type="radio"/>	Egon Nilsson 12/7/2020, 6:48 PM	Virtual Agent	1 h ago
<input type="radio"/>	Preston Morales 12/1/2020, 11:01 AM	Virtual Agent	1 h ago
<input type="radio"/>	Christopher Reed 12/7/2020, 6:30 PM	Virtual Agent	1 h ago
<input type="radio"/>	Preston Morales 12/7/2020, 6:38 PM	Virtual Agent	1 h ago

28. You can see that the status your recording has been changed to **Ready to analyze**

Processes > Contoso Invoice Processing > Recordings

	Name	Created by	Created	Modified by	Modified ↓	Status ⓘ
<input type="radio"/>	Virtual Agent 3/16/2021, 3:04 AM	Virtual Agent	29 min ago	Virtual Agent	45 sec ago	Ready to analyze
<input type="radio"/>	Shakti Menon 12/1/2020, 11:06 AM	Virtual Agent	1 h ago	Virtual Agent	1 h ago	Analyzed
<input type="radio"/>	Wasanthi Gamage 12/7/2020, 6:46 PM	Virtual Agent	1 h ago	Virtual Agent	1 h ago	Analyzed
<input type="radio"/>	Egon Nilsson 12/7/2020, 6:48 PM	Virtual Agent	1 h ago	Virtual Agent	1 h ago	Analyzed
<input type="radio"/>	Preston Morales 12/1/2020, 11:01 AM	Virtual Agent	1 h ago	Virtual Agent	1 h ago	Analyzed
<input type="radio"/>	Christopher Reed 12/7/2020, 6:30 PM	Virtual Agent	1 h ago	Virtual Agent	1 h ago	Analyzed
<input type="radio"/>	Preston Morales 12/7/2020, 6:38 PM	Virtual Agent	1 h ago	Virtual Agent	1 h ago	Analyzed

29. Click Analyze

+ New recording  Analytics  Share  Analyze  Delete



Processes > Contoso Invoice Processing

Details [Edit](#)


Description	Owner	
Submit a new invoice using Contoso Invoice App	Virtual Agent	
	Created	
	3/16/2021, 2:31 AM	
Status	Modified by	Modified
Analyzed	Virtual Agent	3/16/2021, 5:18 PM
Analyzed	Analyzed recordings	
3/16/2021, 5:13 PM	7	

Shared with

Co-owners



Contributors



30. Select Confirm

Analyze this process?

Only recordings that have been switched to **Ready to analyze** will be included.

Confirm

Cancel

31. You can see that the status your recording has been changed to **Analyzed**

Recordings + New recording					
Name	Created by	Created	Modified by	Modified ↓	Status ⓘ
Virtual Agent 3/16/2021, 3:04 AM	Virtual Agent	14 h ago	Virtual Agent	49 sec ago	Analyzed
Shakti Menon 12/1/2020, 11:06 AM	Virtual Agent	14 h ago	Virtual Agent	14 h ago	Analyzed
Wasanthi Gamage 12/7/2020, 6:46 PM	Virtual Agent	14 h ago	Virtual Agent	14 h ago	Analyzed
Egon Nilsson 12/7/2020, 6:48 PM	Virtual Agent	14 h ago	Virtual Agent	14 h ago	Analyzed
Preston Morales 12/1/2020, 11:01 AM	Virtual Agent	14 h ago	Virtual Agent	14 h ago	Analyzed
Christopher Reed 12/7/2020, 6:30 PM	Virtual Agent	14 h ago	Virtual Agent	14 h ago	Analyzed
Preston Morales 12/7/2020, 6:38 PM	Virtual Agent	14 h ago	Virtual Agent	14 h ago	Analyzed
See all					

32. Click **Analytics**

Note: This step may take a few minutes to load.

+ New recording **Analytics** Share Analyze Delete



Processes > **Contoso Invoice Processing**

Details Edit


Description		Owner
Submit a new invoice using Contoso Invoice App		Virtual Agent
		Created
		3/16/2021, 2:31 AM
Status	Modified by	Modified
Analyzed	Virtual Agent	3/16/2021, 5:18 PM
Analyzed	Analyzed recordings	
3/16/2021, 5:13 PM	7	

Shared with

Co-owners

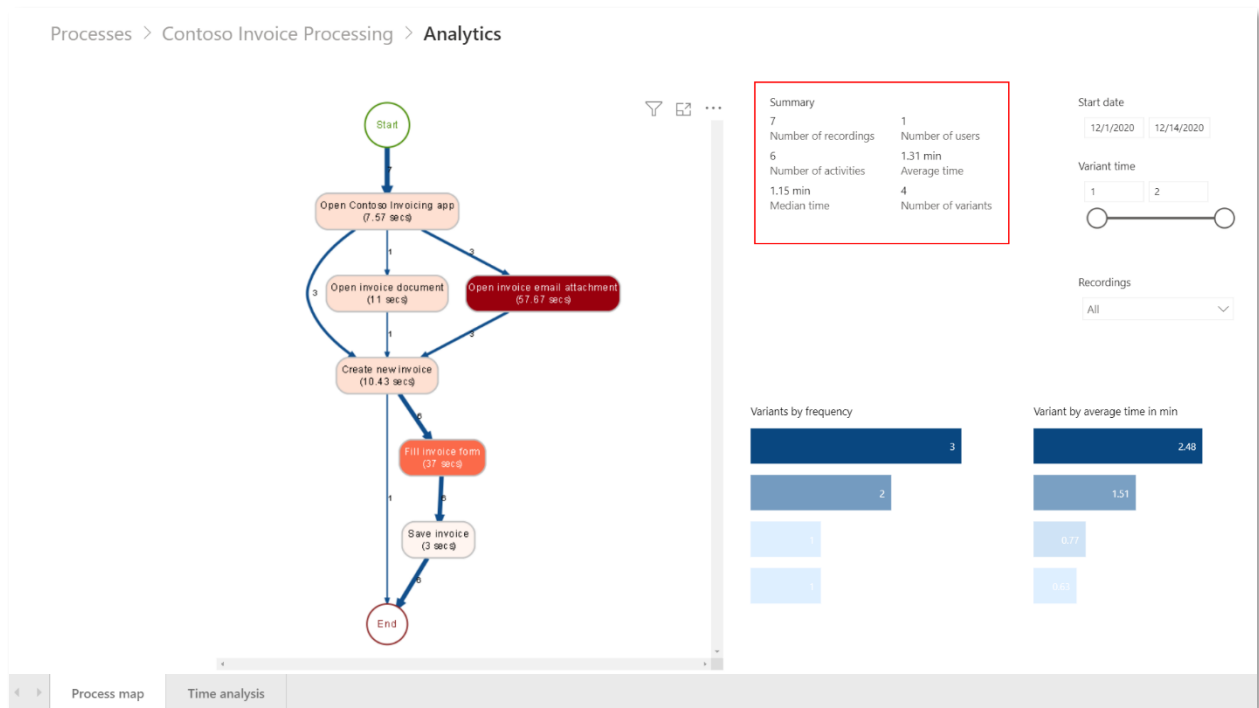
Contributors



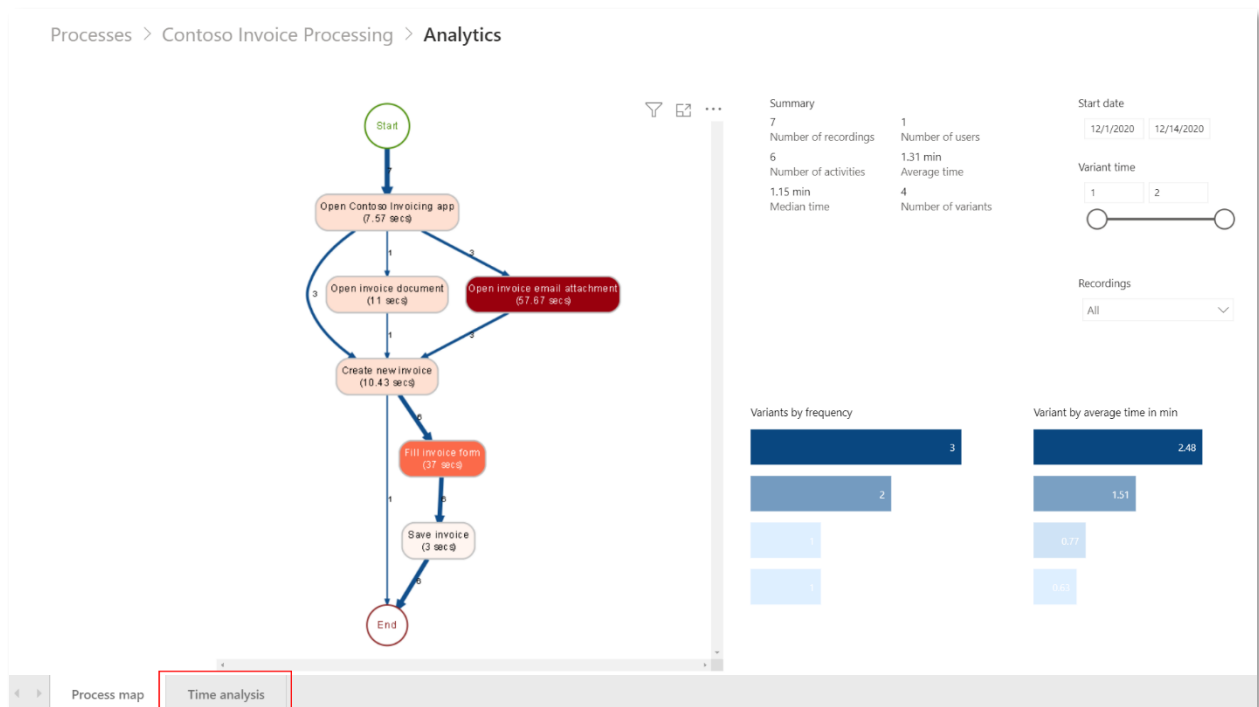
Recordings

Name	Created by	Created
Virtual Agent 3/16/2021, 3:04 AM	Virtual Agent	14 h ago
Shakti Menon 12/1/2020, 11:06 AM	Virtual Agent	14 h ago

33. You can see your recording represented in the process map and the analysis.



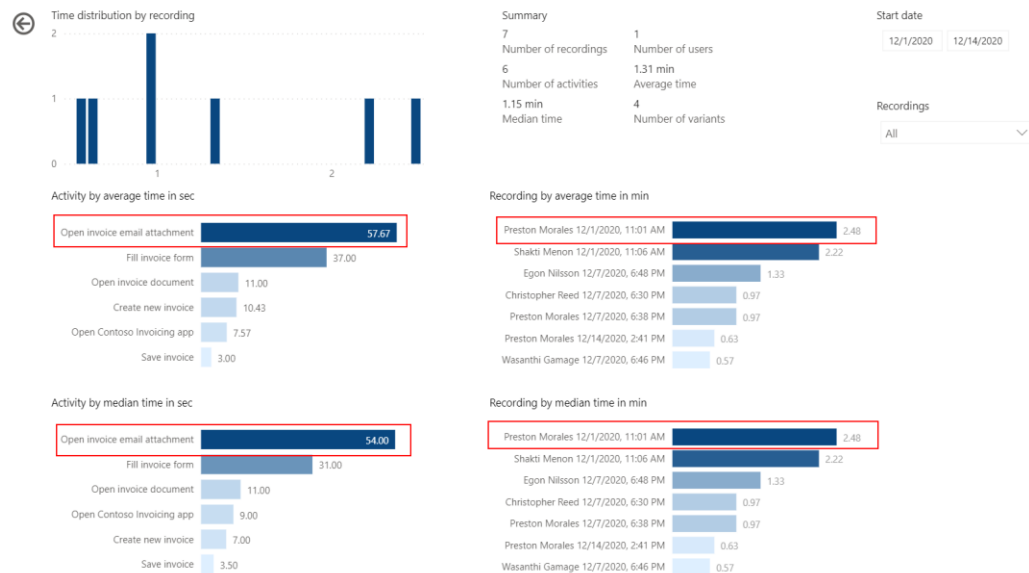
34. Click Time analysis



35. You can see your recording represented in Time analysis as well. This highlights the importance of including people who regularly participate in your business process to get a complete picture of the bottlenecks, but also the opportunities that emerge for automation.

Note: Depending upon how long it took you to complete the actions, will determine where your record is located in the list.

Processes > Contoso Invoice Processing > Analytics



36. This completes the Process advisor lab. Now that we understand where all the bottlenecks exist in our business process, we can now go ahead and automate them in subsequent labs using Power Automate.

Check your knowledge

Lab 2

5 minutes

1. Which of the following allows you to see the process map and insights?

- A. Share
- B. Analyze
- C. Analytics
- D. None of the above

Answer: C. The process map can be found within the Analytics feature.

2. When it comes to annotating your recording, how do you group related actions together?

- A. Click Add activity
- B. Click Application
- C. Click Description
- D. Click Timestamp

Answer: A. Click Add activity to group related actions together.

3. To analyze, how many activities do you need at least?

- A. 1
- B. 2
- C. 3
- D. 4

Answer: B. 2

Information in this document, including URL and other Internet Web site references, is subject to change without notice. Unless otherwise noted, the example companies, organizations, products, domain names, e-mail addresses, logos, people, places, and events depicted herein are fictitious, and no association with any real company, organization, product, domain name, e-mail address, logo, person, place or event is intended or should be inferred. Complying with all applicable copyright laws is the responsibility of the user. Without limiting the rights under copyright, no part of this document may be reproduced, stored in or introduced into a retrieval system, or transmitted in any form or by any means (electronic, mechanical, photocopying, recording, or otherwise), or for any purpose, without the express written permission of Microsoft Corporation.

Microsoft may have patents, patent applications, trademarks, copyrights, or other intellectual property rights covering subject matter in this document. Except as expressly provided in any written license agreement from Microsoft, the furnishing of this document does not give you any license to these patents, trademarks, copyrights, or other intellectual property.

The names of manufacturers, products, or URLs are provided for informational purposes only and Microsoft makes no representations or warranties, either expressed, implied, or statutory, regarding these manufacturers or the use of the products with any Microsoft technologies. The inclusion of a manufacturer or product does not imply endorsement of Microsoft of the manufacturer or product. Links may be provided to third party sites. Such sites are not under the control of Microsoft and Microsoft is not responsible for the contents of any linked site or any link contained in a linked site, or any changes or updates to such sites. Microsoft is not responsible for webcasting or any other form of transmission received from any linked site. Microsoft is providing these links to you only as a convenience, and the inclusion of any link does not imply endorsement of Microsoft of the site or the products contained therein.

© 2020 Microsoft Corporation. All rights reserved.

Microsoft and the trademarks listed at

<https://www.microsoft.com/enus/legal/intellectualproperty/Trademarks/Usage/General.aspx> are trademarks of the Microsoft group of companies. All other trademarks are property of their respective owners.