Introduction to Power Automate

Sample manual - first two chapters

Wise Owl Training

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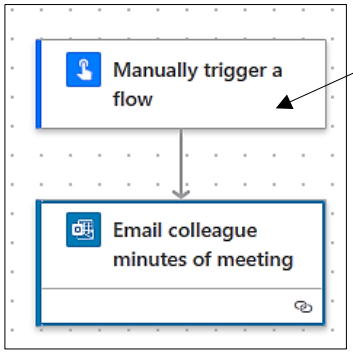
CHAPTER 1 - GETTING STARTED

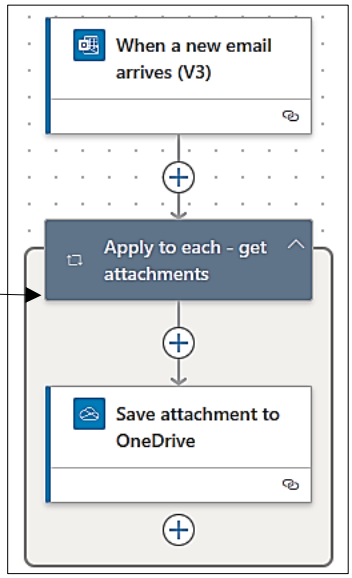
1.1 What is Power Automate?

Power Automate (*PA*) used to be called *Microsoft Flow* (Microsoft renamed it in 2019). PA allows you to create *flows* (series of saved instructions) online:

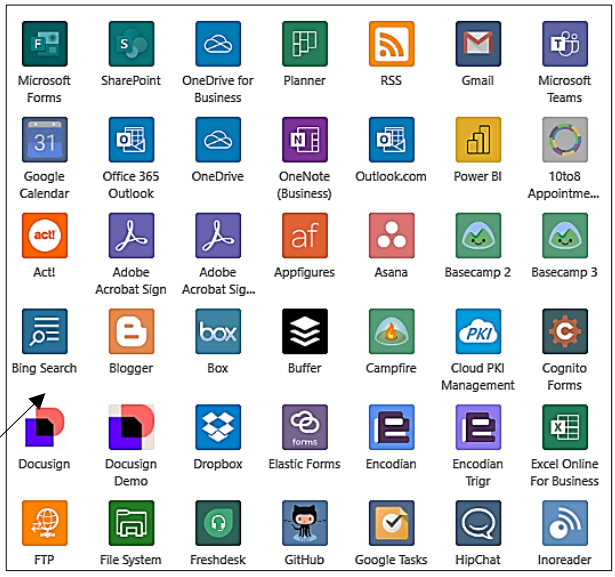


A simple manual flow to send an email to a colleague.

A flow using a trigger (when you receive an email, PA will save its attachments to a specified folder in OneDrive).



Flows can connect to literally hundreds of cloud-based services – here is a small sample:



Just a few of the many connectors that you can use to link to online services (Microsoft announced that this had reached 1,000 in May 2023, at which point Wise Owl stopped counting).

If you commit to using Power Automate, you are trusting your data, business processes and probably career to Microsoft and the Internet: if your web connection should happen to go down or Microsoft's servers fail, there won't be much that you can do!

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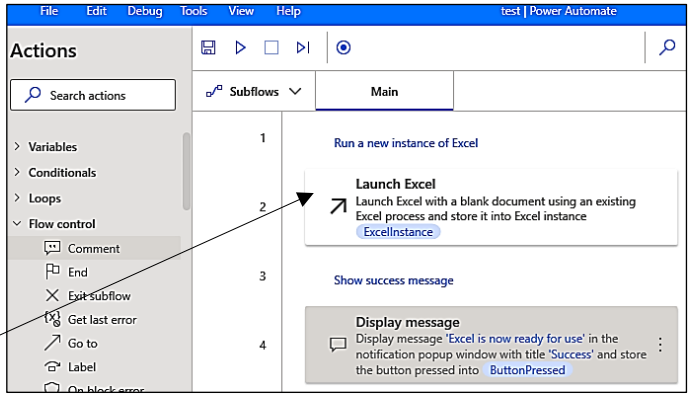
1.2 Power Automate vs Power Automate Desktop

Microsoft (confusingly, if typically) market two software products whose names include **Power Automate**:

Software	Runs in	What it does	Typical use cases
Power Automate	The cloud	Automates a series (or *flow*) of instructions to run on Microsoft's servers, under your account.	Collating the results of an online survey, emailing notifications when someone posts a comment in Teams, capturing social media updates in an online database.
Power Automate Desktop	Your desktop	Automates a series (or *flow*) of instructions to manipulate data on your own computer.	Collating data in Excel workbooks, logging attachments sent in emails, submitting website forms, running backup routines.

Here's what a *Power Automate Desktop* flow looks like:



This flow starts an Excel application and then announces that it's ready for use.

Power Automate and Power Automate Desktop were written by different companies (Microsoft bought *SoftMotive*, authors of Power Automate Desktop, in May 2020) and are different products.

Confusingly, while Power Automate Desktop runs on your desktop it too stores its flows in the cloud (in your online Microsoft account). You can run Power Automate Desktop *flows from* Power Automate*, but the converse isn't true.*

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1.3 Licensing Requirements

Most users of Power Automate will begin with an Office 365 licence. This allows you to do the following:

Capability	With an Office 365 licence you can …
Run flows	… create and run automated, scheduled and manually triggered flows (that is, most of the flows you are likely to want to run).
Use standard connectors	Use any of the connectors described as *Standard* by Microsoft. These include Azure Active Directory, Dropbox, Excel online, GitHub, Gmail, Google apps, LinkedIn, Microsoft Forms, Office 365, Outlook, Pinterest, Power Apps and Power BI, Slack, SharePoint, Teams, WordPress and YouTube.
2,000 platform requests per day	During an initial transition period (lasting 6 months or more), you will be allowed up to 10,000 requests per day. The limit is applied on a rolling 24-hour basis. If you exceed your limit you will need to go to another plan (see below).

Here are some of the main things NOT included in this licence:

What	Notes
Premium connectors	To connect to connectors designated as premium by Microsoft, you will need any standalone plan (that is, anything except an Office 365 licence). Premium connectors include ArcGIS, most Azure services, most Dynamics service (for which you can buy a specialist licence), Map Pro, Microsoft Dataverse, MySql, Oracle, Ordnance Survey Places, Salesforce, SAP, Stripe, Word Online and Zoom Meetings.
Business process flows	For example, you can create a business process flow to ensure that everyone in an organisation follows the same steps every time they handle a customer request. This courseware doesn't consider business process flows, and neither (Wise Owl suspect) will most customers.
Custom connectors	If you can't find a connector for your service, you can create your own with a custom API wrapper.
On premises gateways	These let you build a bridge between a Microsoft cloud service such as Power Automate and a data source in your organisation (such as a SQL Server database).
Robotic process automation	This allows you to build a flow to mimic the keyboard actions and mouse movements of a human user (for example, to fill in a website form), usually using Power Automate Desktop.
AI builder capacity	You can use AI to build and train AI models to make predictions based on your data. The AI builder has its own licensing rules!

To use premium or custom connectors or on-premises gateways you will probably need to buy one or more separate per-flow or per-user Power Automate licence plans.

If there's not enough detail in this section, you can always search for the phrase "Microsoft Power Apps, Microsoft Power Automate and Microsoft Power Virtual Agents Licensing Guide" and download the 34-page PDF this leads to.

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1.4 Logging on to Power Automate

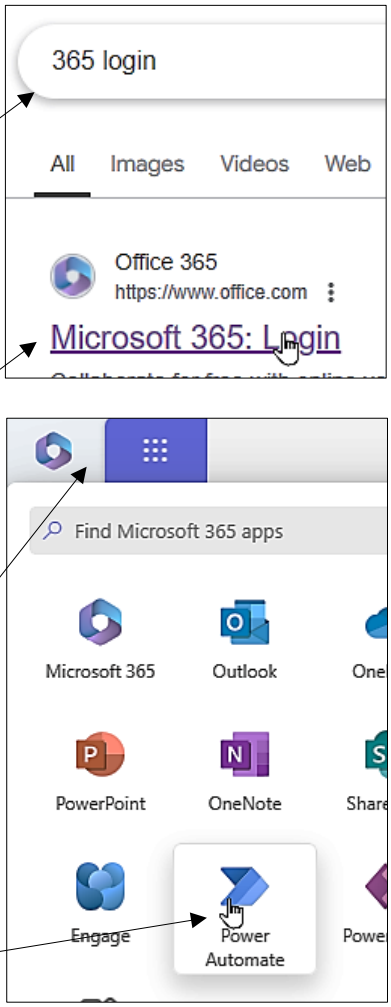
If you are using a 365 licence to access Power Automate, one reliable way to log in is via the 365 home page:

a) Type in the phrase **365 login** into your favourite search engine.

b) Choose to go to the 365 log-in page (although this says **Office**, officially Microsoft's suite of productivity software is now just called 365).

c) Click on this icon in the top left corner (Microsoft call it the *waffle*).

d) Choose to run Power Automate: it will open in a new window.



*Alternatively, just visiting the website **powerautomate.com** also seems to work, although after the website loads a longer URL may appear in your browser's address bar.*

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1.5 Environments and Flows

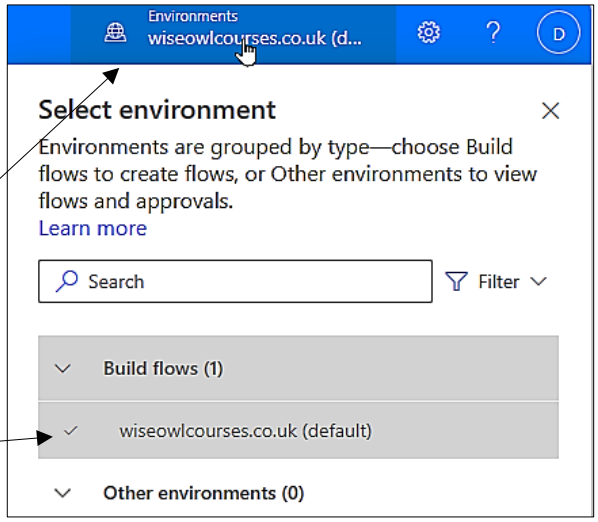
Before listing flows you (or someone else) has created in Power Automate it's vital to make sure you're in the right *environment*.

Choosing an Environment

You can think of environments as different folders in your little bit of the Microsoft cloud. Here's how to change your environment:

Click on this area at the top right corner of Power Automate to see (and change) your environments.

Often your organisation will have one environment for development and one production environment, although here this training account only has access to one environment, so there's nothing to choose.



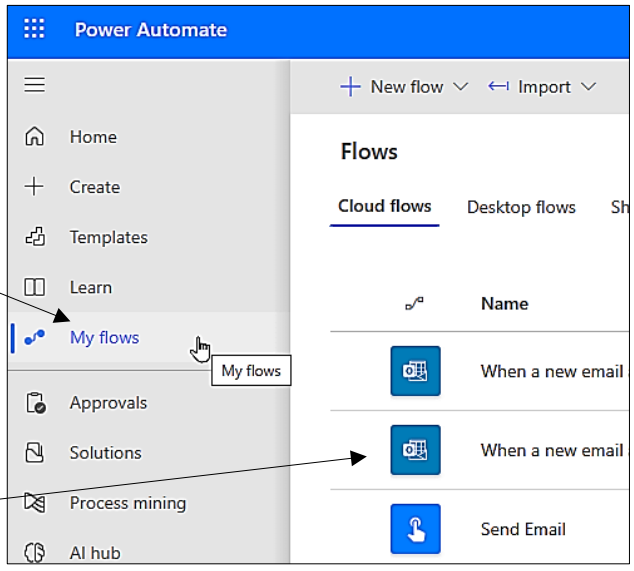
Each environment sits on its own tenant *(think of this as a space you've leased from Microsoft on some central server). To move a flow that you've created from one environment (tenant) to another is a non-trivial process: you have to export it from the first environment and then import it into the second.*

Listing Flows

Once you've chosen your environment, you can see the flows it contains:

Click on this menu option on the left-hand side …

… to see the cloud flows or desktop flows that you've created (or the flows colleagues have shared with you).



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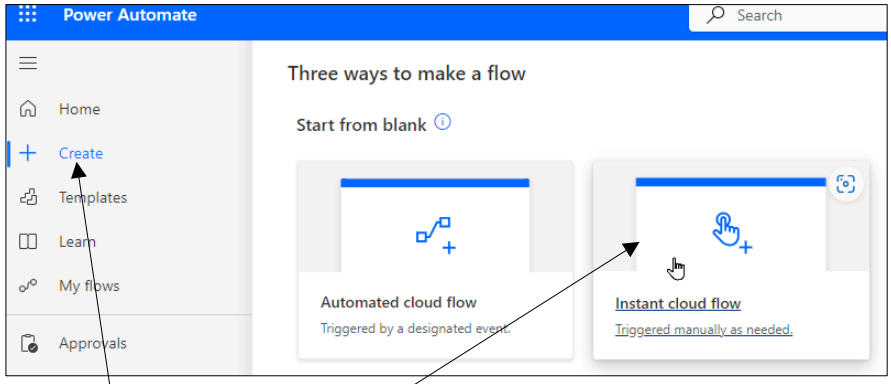
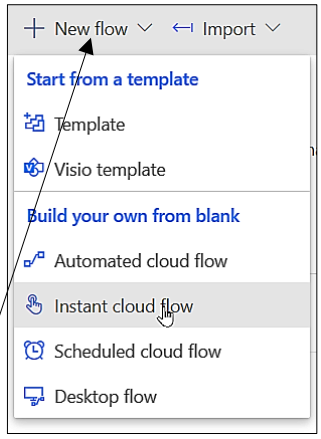
CHAPTER 2 - WORKING WITH FLOWS

2.1 Creating Flows

Follow these steps to create a new flow:





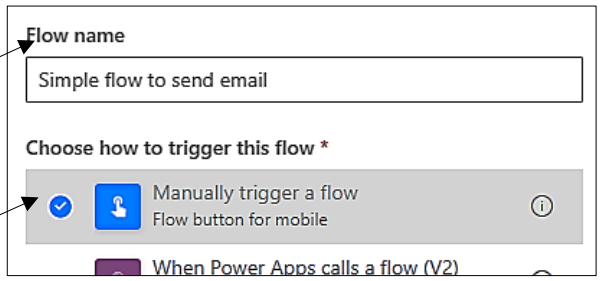
a) Click on this menu to create a new flow.

b) Choose the type of flow to create (see notes below for what each means).

Alternatively, click on the arrow next to the New flow button when listing your flows, and choose which one you want to create.

c) Give your flow a name. Avoid punctuation: although you can create flows whose names include characters like / , they will crash when you try to run them!

d) For the examples in this chapter the only way to run our flows will be manually.



The 4 main types of flow that you can create are shown overleaf.

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Types of Flow

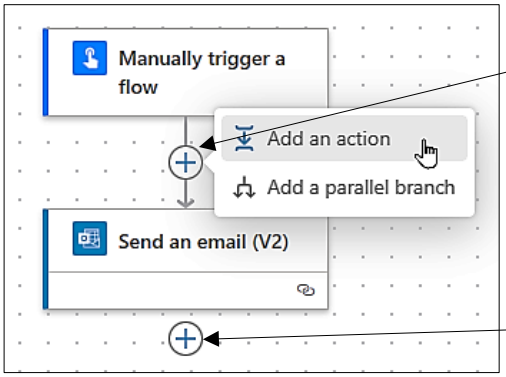
PA lists 4 main types of flow, but the first two are the ones which most people will choose:

Type of flow	Description
Automated cloud flow	Any flow which begins when something happens. Triggers can include comments being added to Teams discussions, emails being received or items being added to SharePoint lists (to choose just 3 examples).
Instant cloud flow	When you're testing a flow (or learning PA) this is the best flow type to choose, since you can test it in isolation without having to trigger an event first.
Scheduled cloud flow	When you create a scheduled flow you'll be asked to say when it should run (every week at 10am, for example, or every 10 minutes throughout the day).
Desktop flow	This will launch Power Automate Desktop, the subject of a different Wise Owl training course (and manual!).

*The easiest thing to do, Wise Owl have found, is to create either an automated or instant cloud flow, but then click on the **Skip** button to miss out the stage where you choose the initial trigger. This will bring up a blank flow, and you can then choose which trigger you want to use more easily.*

Adding Steps (Actions)

You can add actions to your flow as follows:



To insert a new step click on the + sign between two steps, then choose to add an action …

… or click on this button to add a new action to the bottom of your flow.

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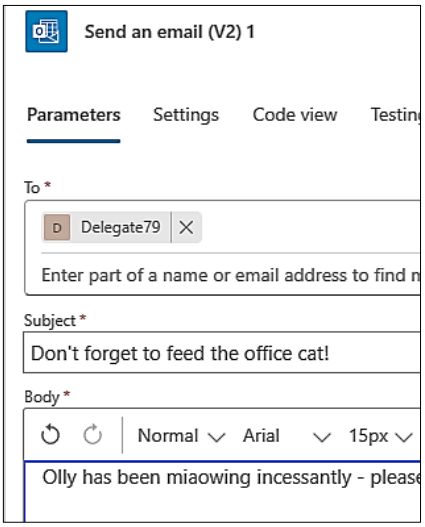
Configuring an Action

Here's how to say what any added action should do:

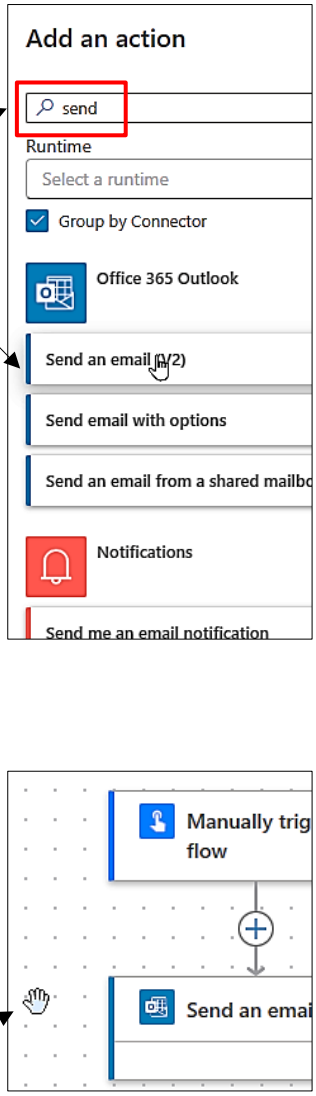
a) Type in what you want to do in part (this is by far the easiest way to choose what action you want to add).

b) Choose the action which best describes what you're trying to do.

c) You can now configure the action (here to say what the subject and body of the email you're sending will be).



d) Click anywhere on the background of your flow to return to normal view.

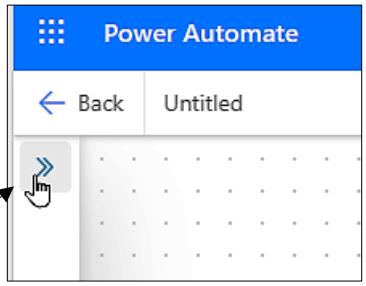


Expanding and Collapsing the Action Bar

You can show and hide the panel on the left of Power Automate showing the details of actions as follows:

Click on this symbol to hide the side panel …

… and on this icon (which seems to lack a tooltip) to redisplay it.



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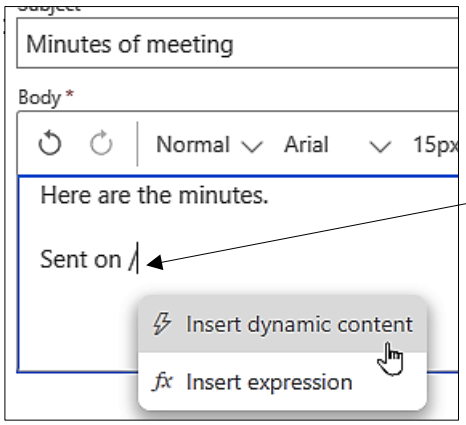
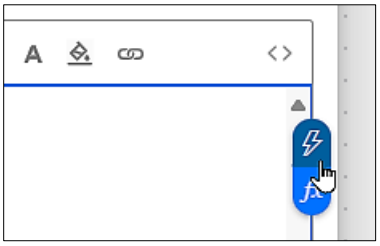
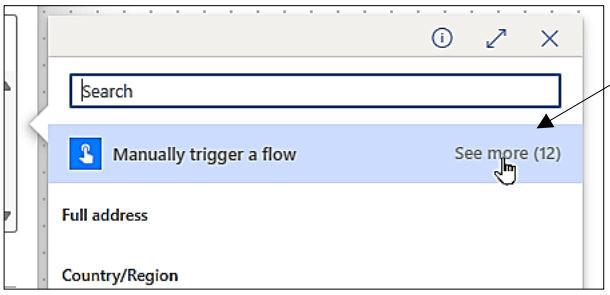
Adding Dynamic Content

When adding a step, PA will always offer up any information that it knows about for inclusion – this is called *dynamic content*. To add this to any action:

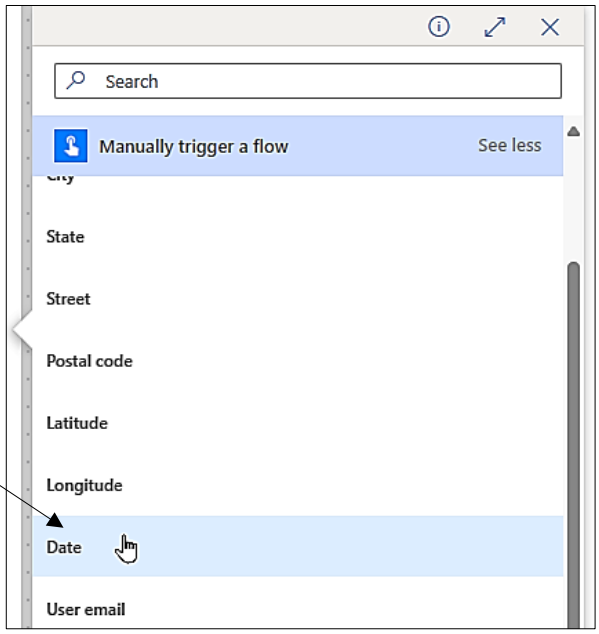


a) Click where you want to insert something, type a / character and choose to insert dynamic content as shown. Alternatively you can click on this symbol:

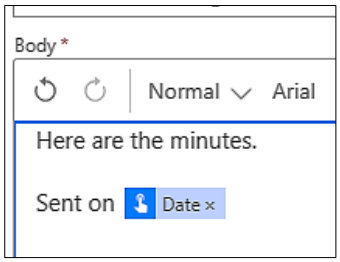




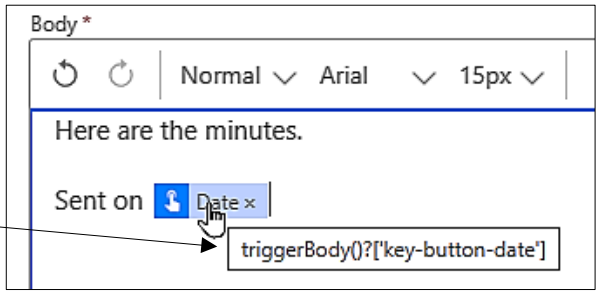
b) If you can't see the dynamic content that you want to add, click on **See more** to see a full list of what's available.



c) Click on what you want to add (here it's the current date). PA will add this in at your cursor position:



d) If you want to scare yourself you could hover over the dynamic content to see the expression that PA has inserted. Much more on this later in the courseware!



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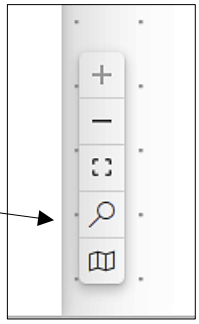
Finding Parts of a Flow

These icons at the bottom left corner of the screen make it easy to find your way round your flow:

Here's what each icon does:

Icon	What it does
	Zooms in and out.
	Fits your flow to fill your current screen.
	A quick way to search for a particular action in your flow.
	Displays a map of your flow – you can use your mouse to drag round this to view different parts of your flow.

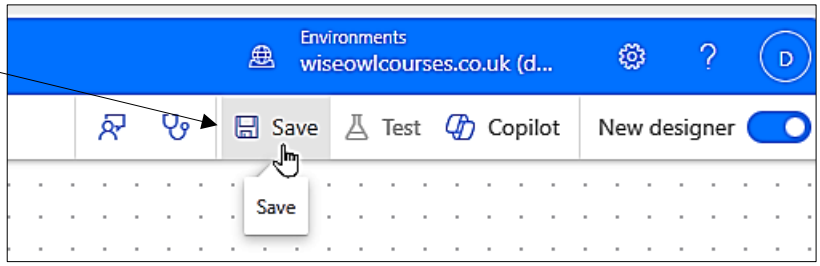


You can also hold down the Ctrl key and use your mouse wheel to zoom in and out, as is standard in many Windows applications.

Saving your Flow

PA will save your flow automatically at regular intervals, but you can save changes manually too:

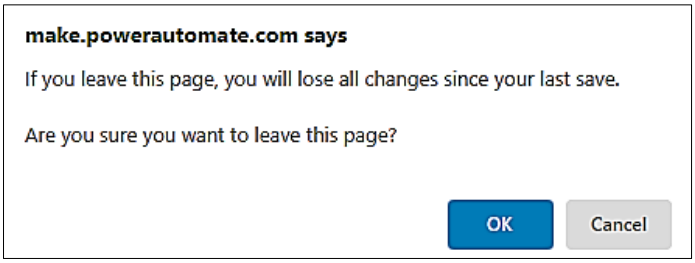
Click on this button at the top right of your PA screen to save your current flow.

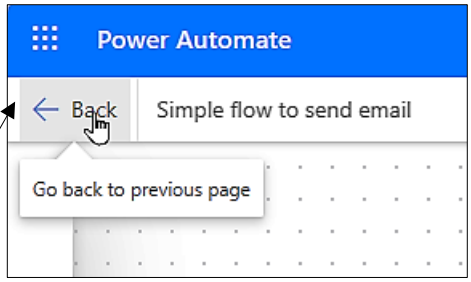


Exiting Flows

When you've finished working with a flow, here's how to leave it:

Click on this button to return to the Power Automate home screen. If you haven't recently saved your changes, you may see this message:





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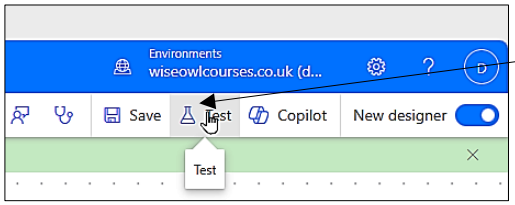
2.2 Testing and Running Flows

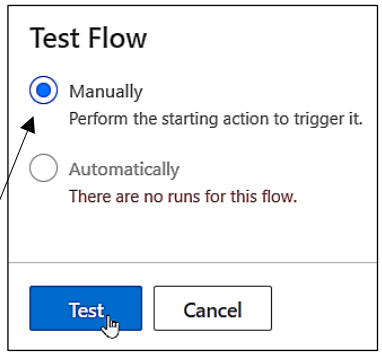
Testing Flows

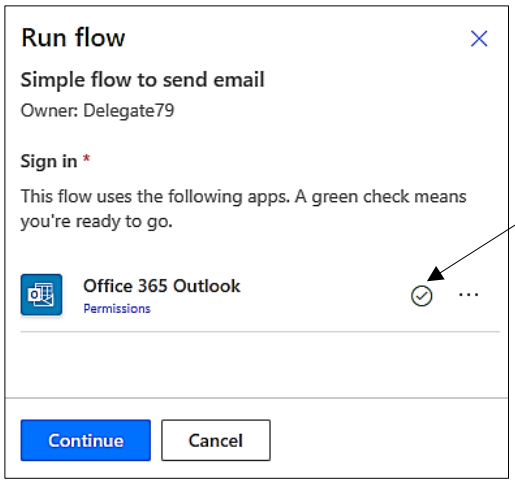
One way to test a flow is to do whatever triggers it (whether this be sending an email, adding a comment or whatever). However, you can also test and run instant flows as follows:



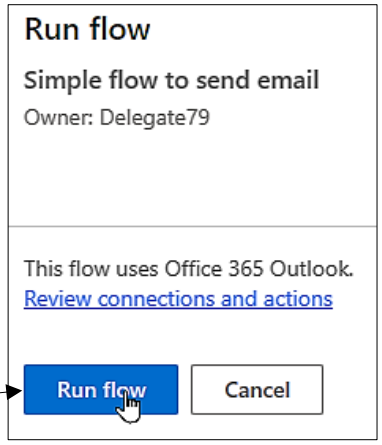
a) Click on this button to test the flow you're editing.

b) Choose to test your flow (see overleaf under re-testing flows for what **Automatically** means).

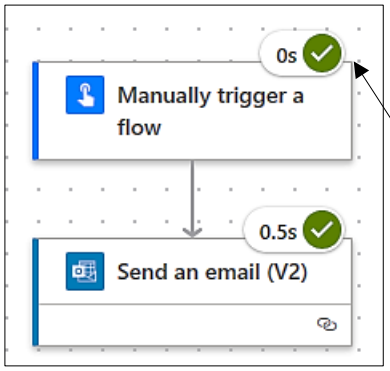




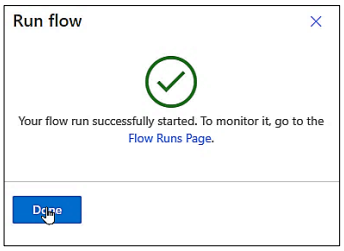
c) If your flow is using any connections to other services, you'll be asked to check that these are set up OK (here the tick means we're good to go).

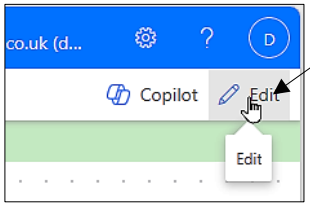


d) You can now choose to run this flow.



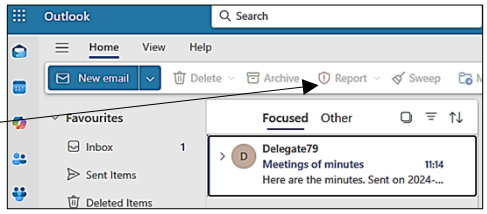
e) When you choose to confirm that you want to run the flow as below, you'll see green ticks appearing next to each completed action:





f) Click on this button to go back into editing your flow.

g) The result of running this flow: after a short while this email will appear in your inbox, together with the delivery date we added as dynamic content.



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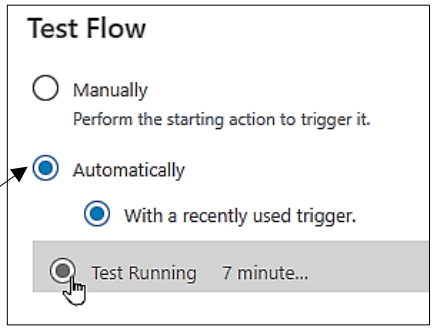
Re-testing Flows

Once you've run a flow once, there's a different way to test it:

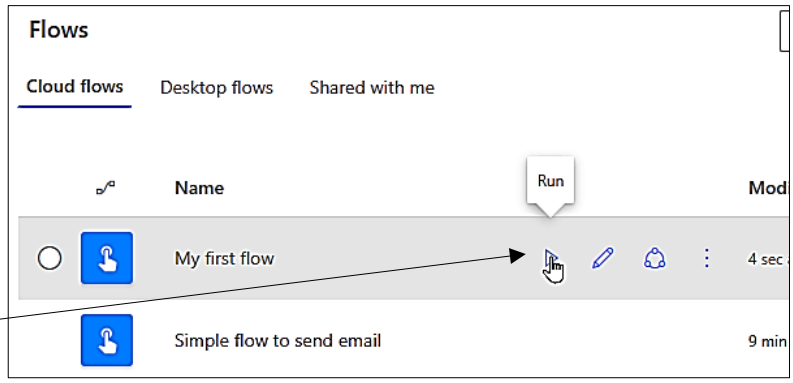
When you click on the button to test your flow you'll see a list of all the previous occasions on which it's run. You can choose any of these to re-run the flow using the same starting conditions.



Running Flows

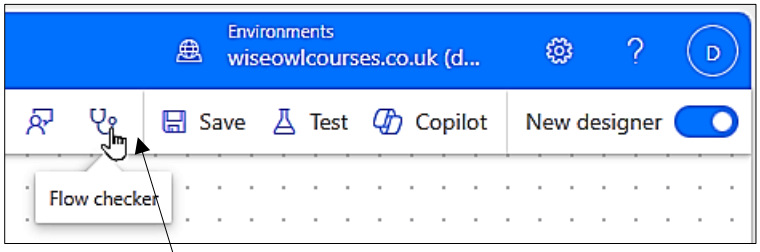
Another way to run a flow is after you've saved it:

Click on this play button to run a flow from your list.

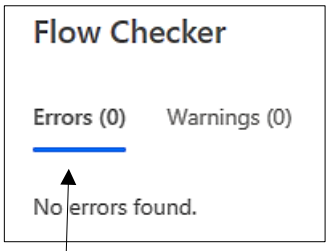


Checking Flows

The **Flow checker** button at the top right of PA allows you to see if a flow makes syntactical sense:



Click on this button to check the syntax of a flow.



For a simple flow like our basic one it's unlikely there would be any syntax problems!

When you run a flow, PA automatically invokes the flow checker anyway, so checking flows manually probably isn't that important.

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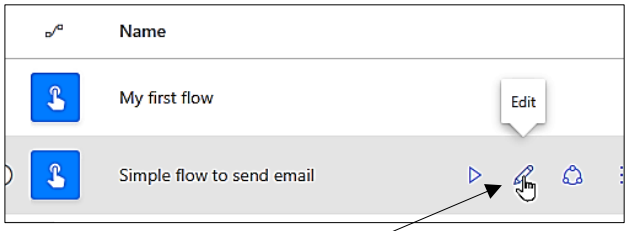
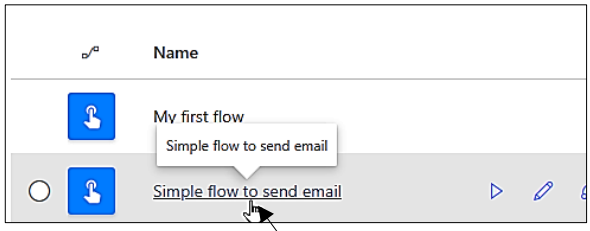
2.3 Viewing and Editing Flows

Click on the name of a flow to view it, or the pencil button to edit it:



You can click on the pencil symbol to go directly to editing the flow …

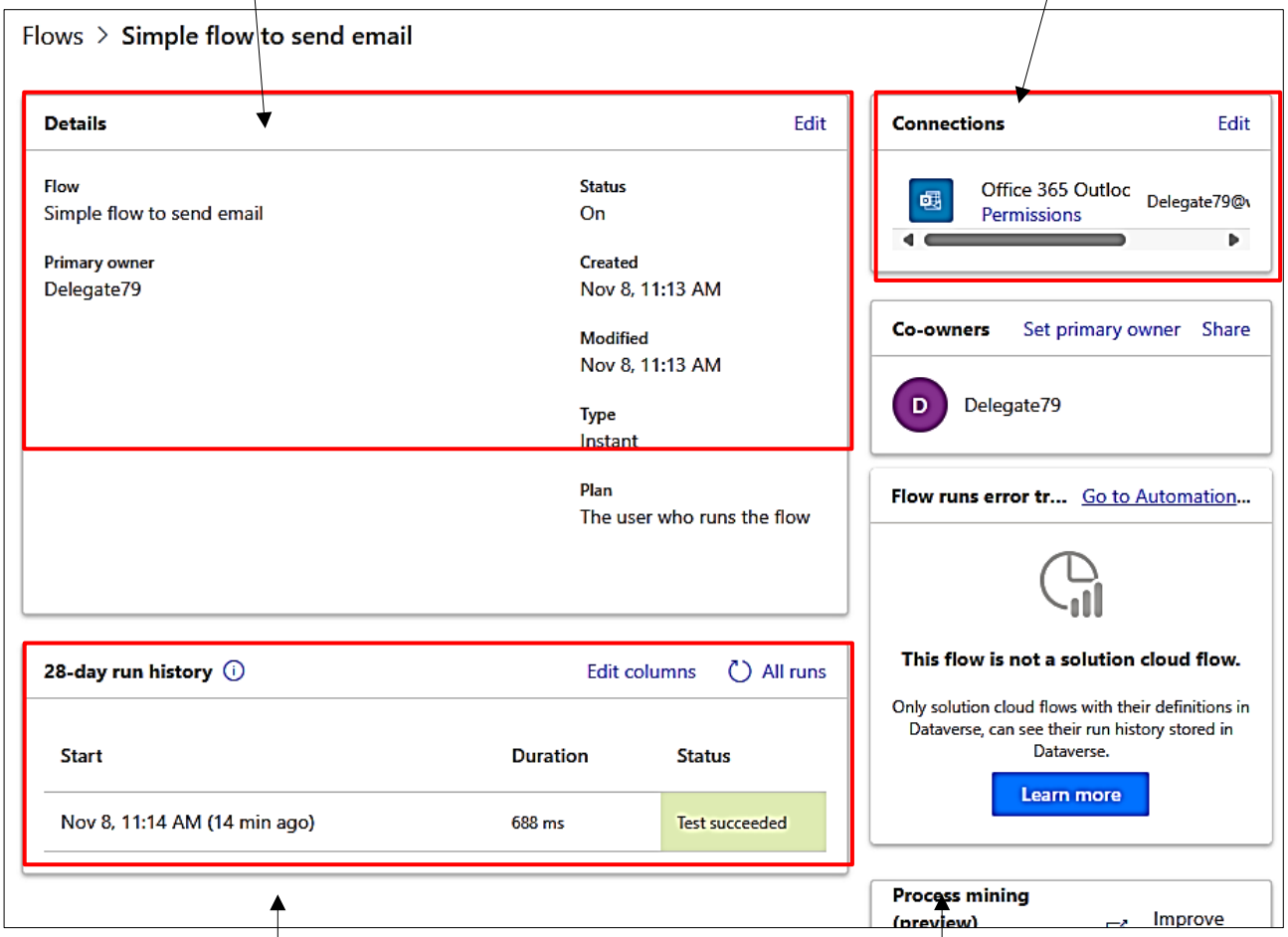


… but if you click on the name of the flow you'll view the flow's details as shown below instead.

Here's what you'll see if you view the details for a flow:

Details about this flow (who created it and when, and what type of flow it is.

A list of the connections used by this flow.



A history of when the flow has been run (once only for this flow, taking less than a second and ending successfully)..

You can scroll down to see various other bits of information, depending on what type of licence you have, whether you've shared your flows and other factors.

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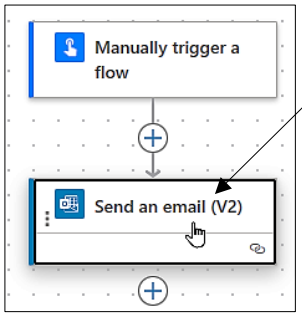
2.4 Improving Flow Readability

There are two ways to make your flows easier to read: renaming actions and adding *notes*.

If any users of the classic Power Automate flow designer are wondering where comments have gone – so do we! Comments are one of a few features not (yet?) supported in the new flow designer.

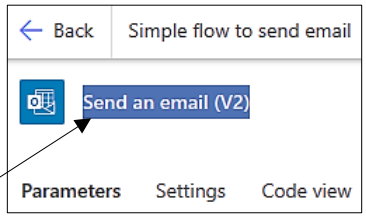
Renaming Actions

Renaming actions makes it easier to see what your flow is doing:

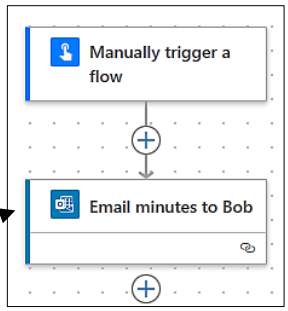


a) Click on the action that you want to rename, to select it.

b) Click on the name to edit it and type in the new name. Weirdly, you don't press Enter to confirm this – just click back in your flow.



c) Giving actions better names like this will make your flows much easier to read.



The downside of this? Many expressions that you create in PA refer to actions by name. The longer your action names are, the longer (and more cumbersome) your expression formulae will be!

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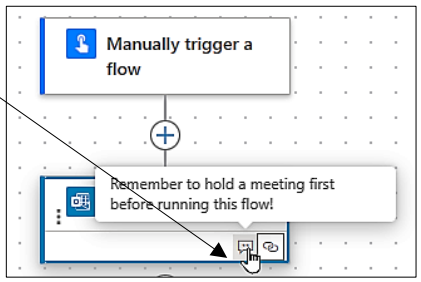
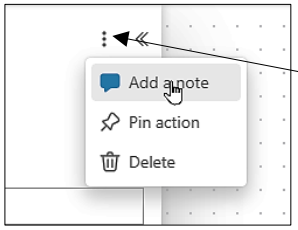
Adding Notes

Notes explain what actions are doing:

If you see this symbol for an action you can hover over it to see the attached note.

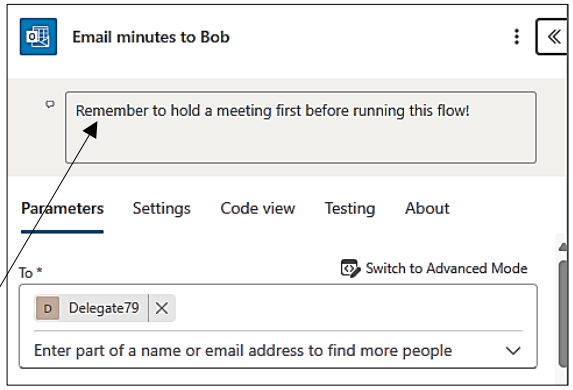


To add a note to an action:



a) Click on these 3 dots and choose **Add a note** from the dropdown menu which appears.

b) Type in your note against this action.



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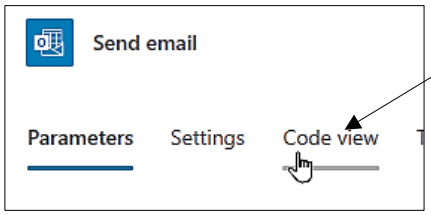
2.5 Working with Flows

This section shows some other ways in which you can work with flows.

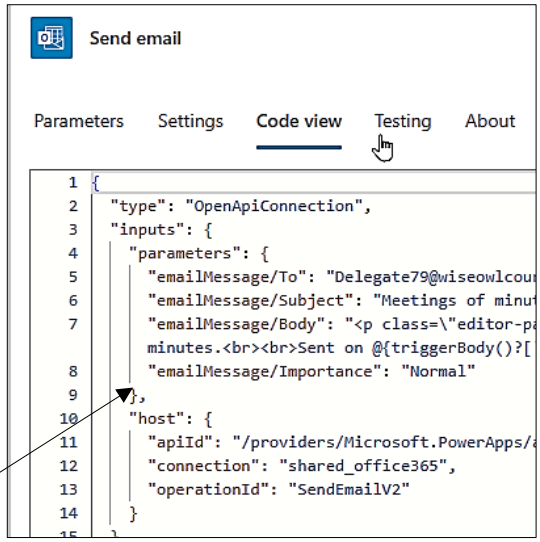
Viewing Actions' Code

If you want to see what an action in your flow is really doing you can view its underlying code:



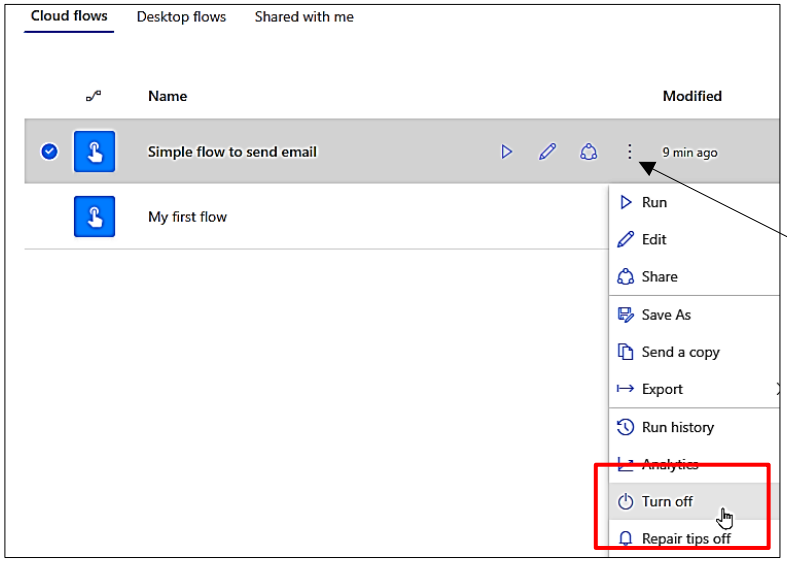
While editing an action click on this tab …

… to see the JSON underlying the action (the rest of this courseware will explain much more about this!).

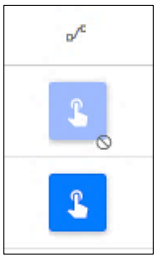


Disabling Flows (but not Actions)

If you don't want a flow to run, but want to keep it in your list, turn it off:w



Click on the 3 dots next to a flow's name and choose **Turn off**. Disabled flows appear with a lighter background:



To turn a flow back on again choose the same menu option (which will now say **Turn on**).

*There is no way to disable a single action within a PA flow (more's the pity); only complicated workarounds. The main one is to use the **Testing** tab for an action to enable a static result; although this isn't covered in this courseware.*

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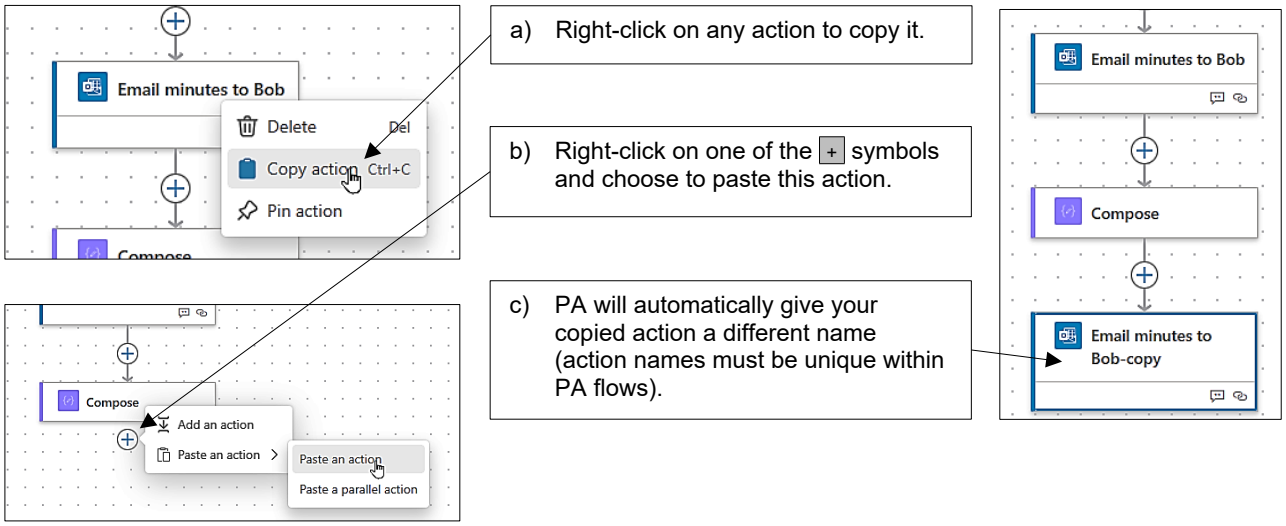
Copying Actions

If you have an action which you may want to repeat, copy it to the PA clipboard:



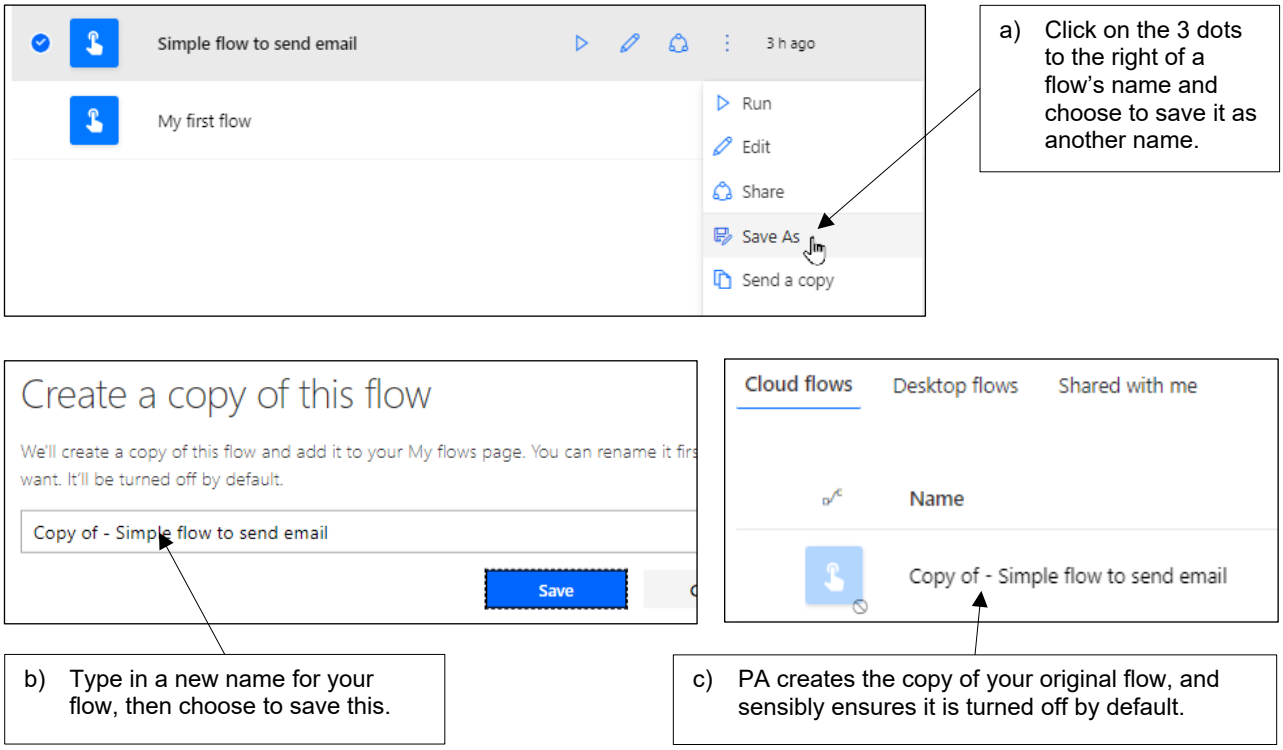
a) Right-click on any action to copy it.

b) Right-click on one of the + symbols and choose to paste this action.

c) PA will automatically give your copied action a different name (action names must be unique within PA flows).

Copying Flows

To copy a flow, choose to save it as another name:



a) Click on the 3 dots to the right of a flow's name and choose to save it as another name.

b) Type in a new name for your flow, then choose to save this.

c) PA creates the copy of your original flow, and sensibly ensures it is turned off by default.

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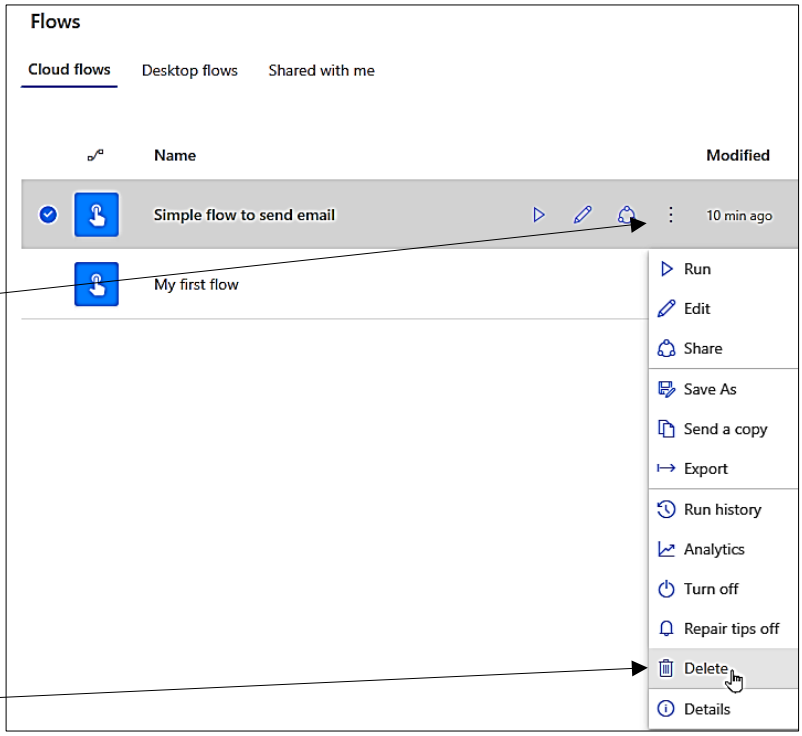
Deleting Flows

Sadly you have to delete flows one at a time (there is no easy way to select more than one flow at the same time, although see the hint below).

a) Click on the 3 dots to the right of a flow's name.

b) Choose to delete this flow.



You can connect to Power Automate Management to delete all of your flows, as described in the following Wise Owl blog, but it's not for the faint-hearted:

https://www.wiseowl.co.uk/blog/s3156/delete-flows.htm

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		Basic training	Advanced training	Systems / consultancy
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	VBA macros			
	Office Scripts			
	Microsoft Access			
Power BI, etc	Power BI and DAX			
	Power Apps			
	Power Automate (both)			
SQL Server	SQL			
	Reporting Services			
	Report Builder			
	Integration Services			
	Analysis Services			
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