

Building Flows to Manage Content and Approvals



Agenda

- Working Data in an Array
- Processing Documents and Images
- Integrating Flow with Microsoft Forms
- Using Flow to Automate Approval Processes
- Managing Approvals using Approvals Center



Understanding Arrays in Flow


- Flow arrays are zero-based
 - Primitive value arrays

| | |
|---|-----------|
| 0 | Daugherty |
| 1 | Hernandez |
| 2 | Mack |
| 3 | Wiley |

- Object arrays

| | Last Name | First Name | Company | Business Phone | Home Phone |
|---|-----------|------------|---------------------|----------------|----------------|
| 0 | Daugherty | Cindy | Wonka Industries | 1(337)111-4444 | 1(337)111-7777 |
| 1 | Hernandez | Zane | Vandelay Industries | 1(757)666-3333 | 1(757)777-1111 |
| 2 | Mack | Chang | Wonka Industries | 1(480)111-4444 | 1(480)777-0000 |
| 3 | Wiley | Ramona | Ecumena | 1(201)777-8888 | 1(201)777-2222 |

Accessing an Array using ['value']

 Get items ⓘ ⋮

*Site Address ✕

*List Name ✕

Show advanced options ▼



`body('Get_items')?['value']`

| | Last Name | First Name | Company | Business Phone | Home Phone |
|---|-----------|------------|---------------------|----------------|----------------|
| 0 | Daugherty | Cindy | Wonka Industries | 1(337)111-4444 | 1(337)111-7777 |
| 1 | Hernandez | Zane | Vandelay Industries | 1(757)666-3333 | 1(757)777-1111 |
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Retrieving List Items

- Use **first()** and **last()** to get lead at head or tail
- Individual items retrieved using zero-based array syntax
 - SharePoint list item array - `body('Get_items')?['value']`
 - First item field value - `body('Get_items')?['value'][0]['ID']`

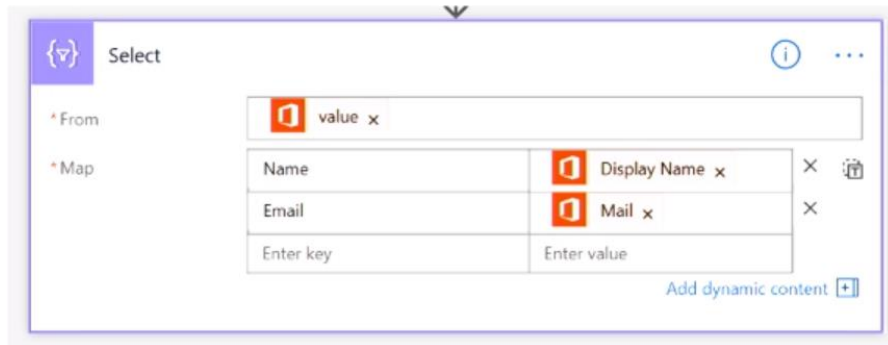
The screenshot shows a Power Automate flow with two actions. The first action is 'Get items' (SharePoint connector). The second action is 'Delete item' (SharePoint connector), which is connected to the first action via a connector arrow. The 'Delete item' action has three input fields: '* Site Address' with the value 'Critical Path Training Labs Team Site - https://msd0910.sharepoint.com/', '* List Name' with the value 'List1', and '* Id' with a dynamic content expression `body(...)`. An 'Add dynamic content' button is visible at the bottom right of the 'Delete item' action.

The screenshot shows the 'Dynamic content' pane in Power Automate. The 'Expression' tab is selected. The expression `body('Get_items')?['value'][0]['ID']` is entered in the text box. Below the text box is a blue 'Update' button.

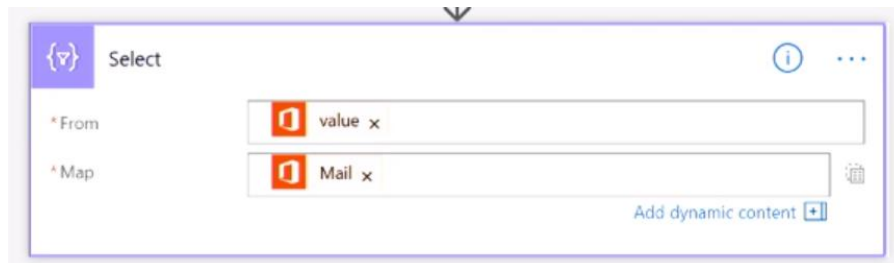


Transforming Arrays

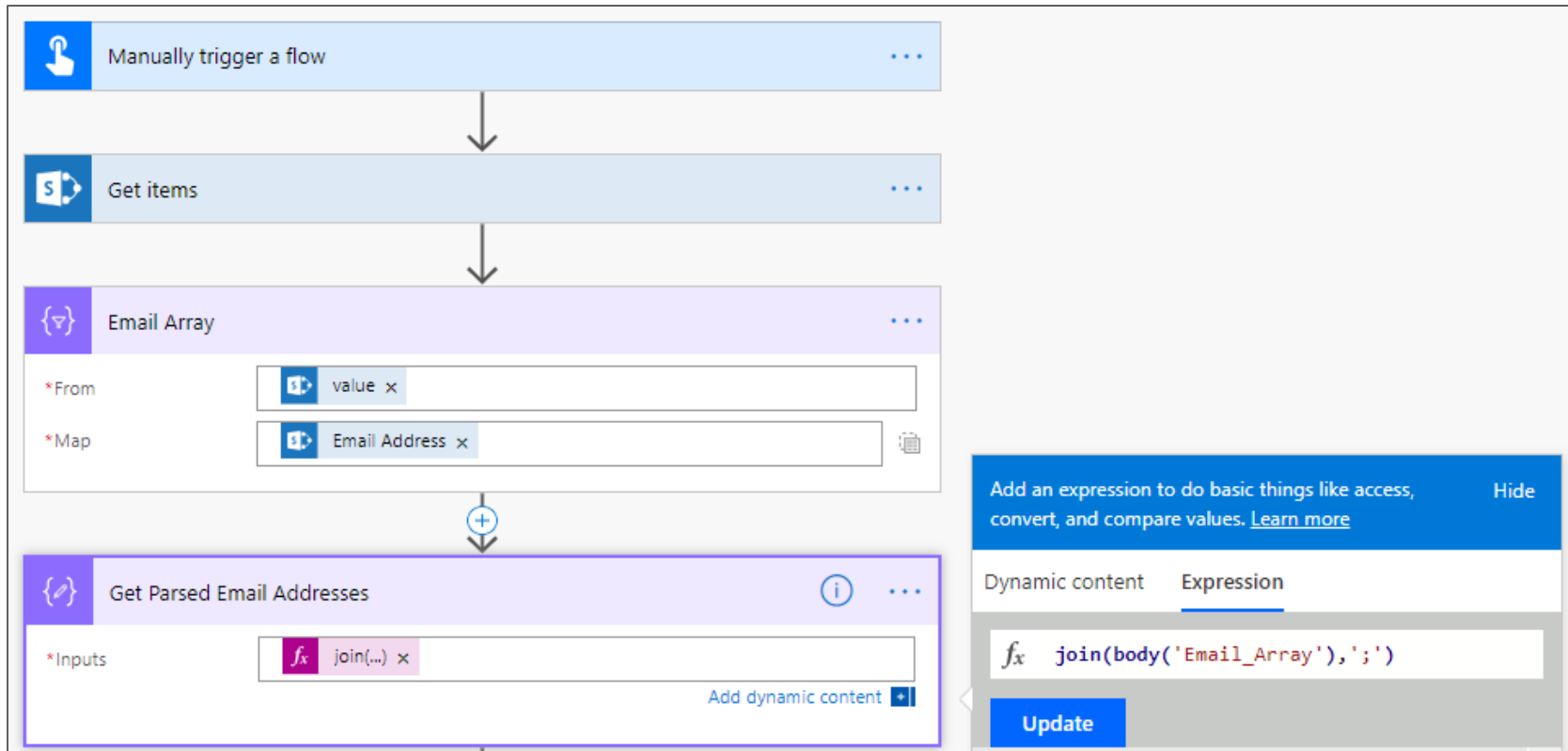
- Use Select action
 - Two input modes: fill key-value pairs or typing directly
- Create array object objects
 - Useful for passing array to another action



- Create a simple array of strings, numbers, Booleans, etc
 - Useful for creating simple list (e.g. email addresses)

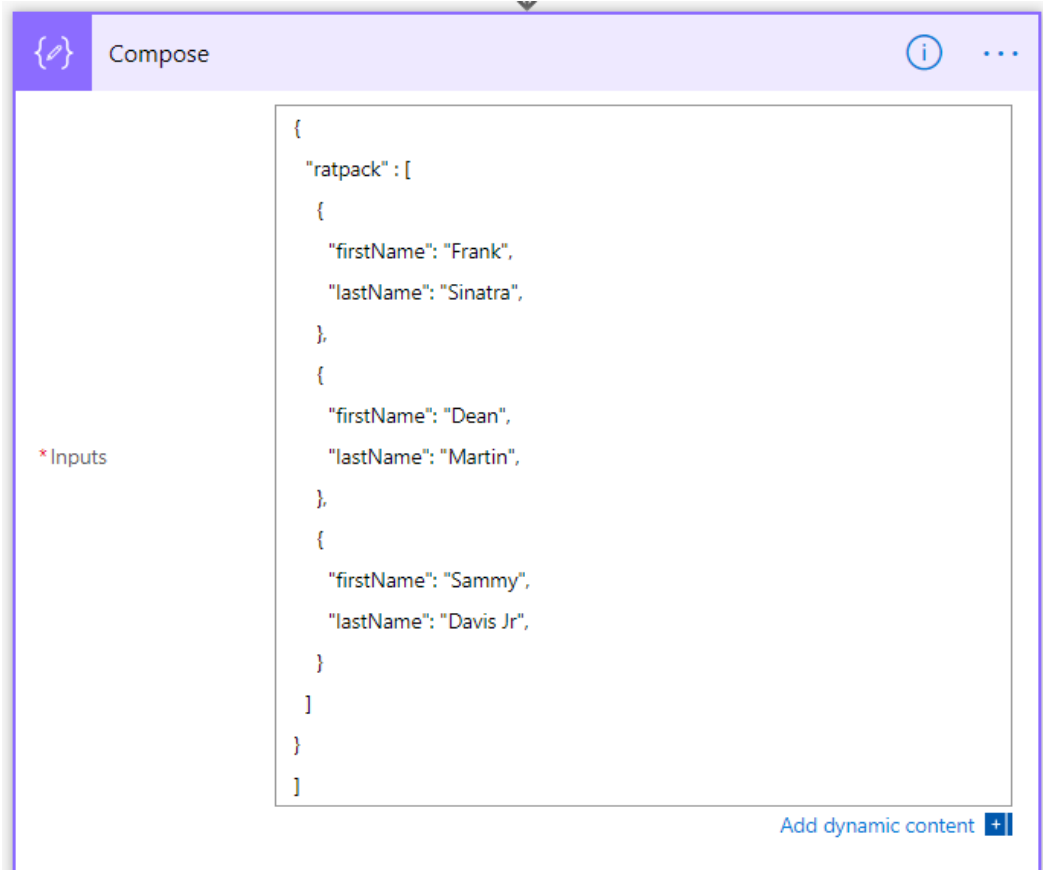
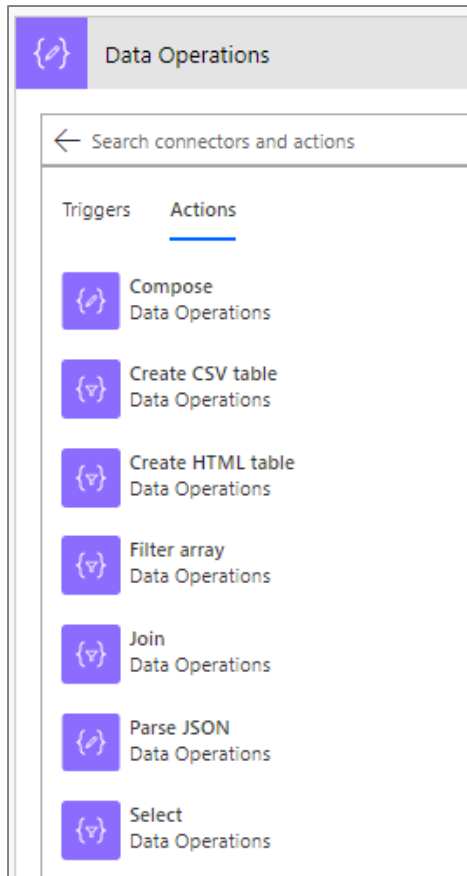


Converting an Array using Select



Data Operations

- Used to process data and prepare content



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dataUriToBinary()

- PowerApps photos require conversion
 - Allows you to upload photos to SharePoint
 - Accomplished using **dataUriToBinary()** function

```
dataUriToBinary(triggerBody()['Createfile_FileContent'])
```

The screenshot displays a PowerApps flow interface. The first step is 'Get File Name', which uses the 'concat(...)' function. The second step is 'Create file', which is configured with the following fields:

- Site Address:** Critical Path Training Labs Team Site - <https://msd0910.sharepoint.com/>
- Folder Path:** /My Photos
- File Name:** Output
- File Content:** dataUriToBinary(triggerBody()['Createfile_FileContent'])

Below the 'Create file' step, a 'Dynamic content' pane is open, showing the 'Expression' tab. The expression entered is `dataUriToBinary(triggerBody()['Createfile_FileContent'])`. The 'Update' button is visible. At the bottom, a 'String functions' pane is partially visible, showing the `concat(text_1, text_2?, ...)` function with the description 'Combines any number of strings together'.

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DEMO

Generating PDF Files with the Word Online Connector

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DEMO

Creating a Flow to Process Forms Created using Microsoft Forms

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- ✓ Processing Documents and Images
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Creating a Flow for Device Request Approval

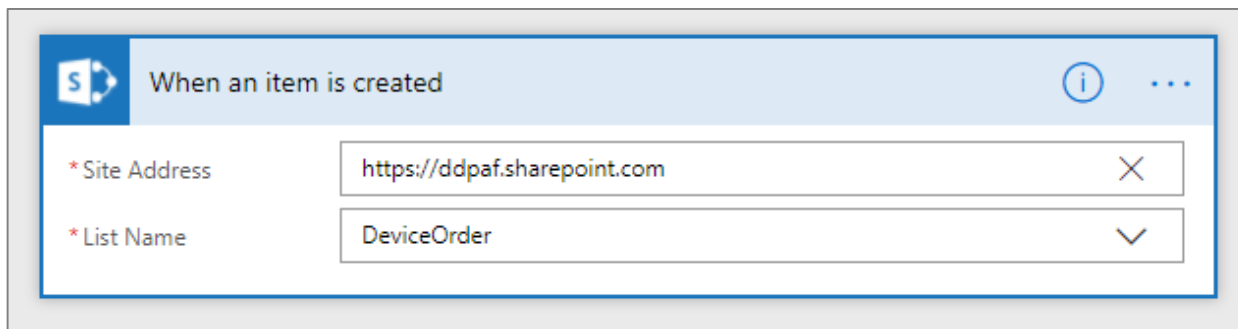
- Create a flow from blank



- Select a SharePoint trigger for **When an item is created**

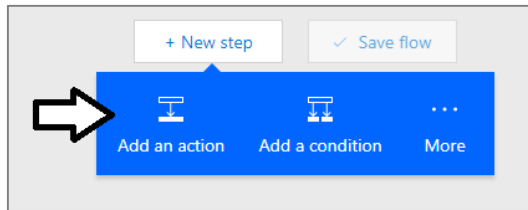


- Configure the trigger to use the **DeviceOrder** list

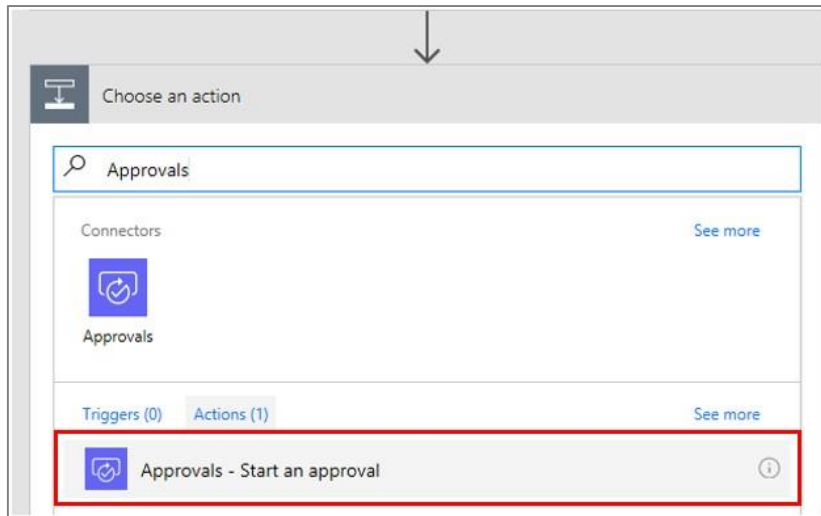


Add the Start an Approval Action

- An **Approval** process is added as an action



- Select the Approvals action named **Start an approval**



Approval Types

- There are two types of approvals
 - Determine behavior when there are two or more approvers
 - "Anyone" allows single approver to complete approval process
 - "Everyone" requires all approver to approve the request

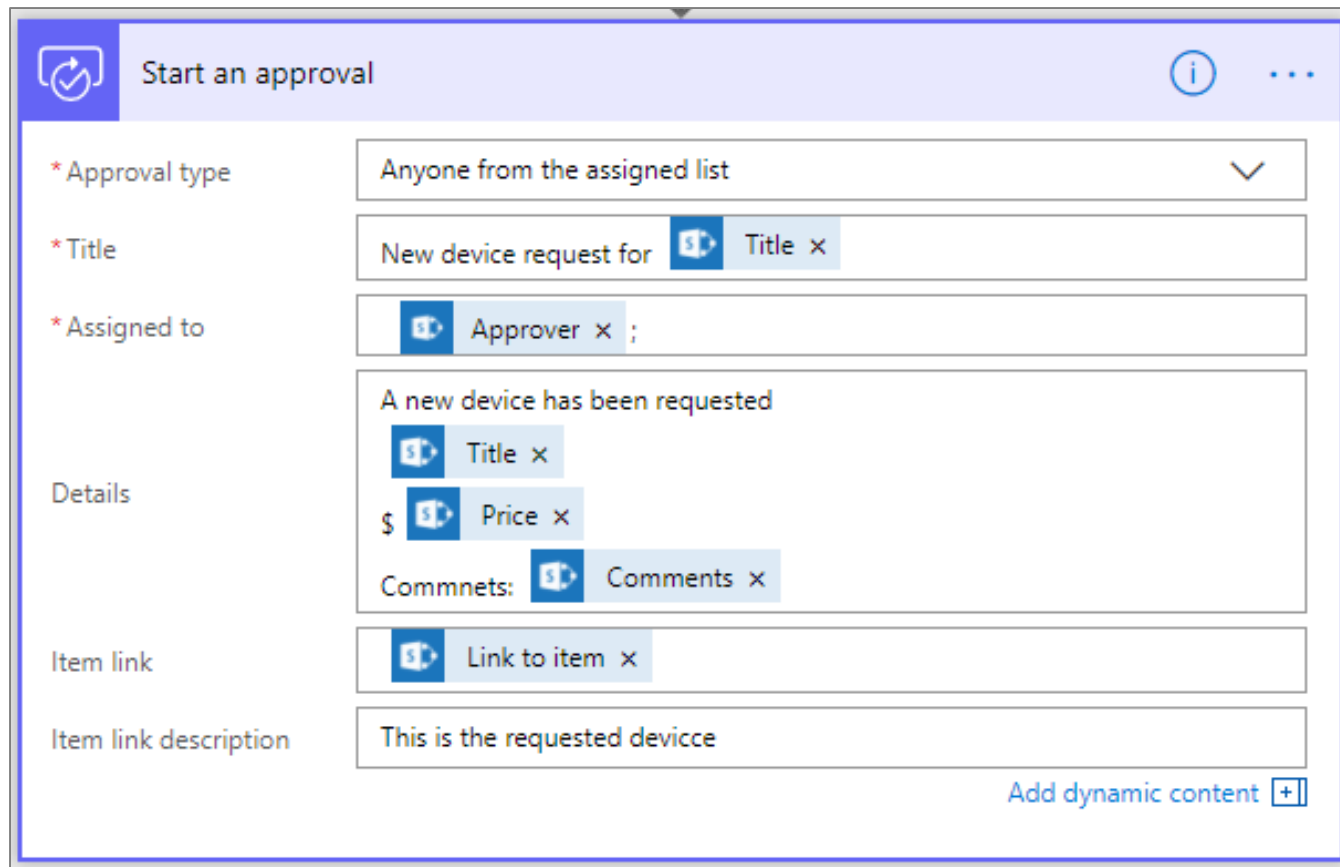


The screenshot shows a 'Start an approval' dialog box. The title bar is light blue with a checkmark icon on the left and an information icon and three dots on the right. Below the title bar, there is a label '* Approval type' followed by a dropdown menu. The dropdown menu is open, showing four options: 'Who should approve this?' (with a downward arrow), 'Anyone from the assigned list' (highlighted with a red border), 'Everyone from the assigned list', and 'Enter custom value'.



Building Out The Start an Approval Action

- You provide data which is sent to approver



The screenshot shows a 'Start an approval' dialog box with the following fields and content:

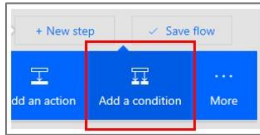
- * Approval type:** A dropdown menu with the text 'Anyone from the assigned list' and a downward arrow.
- * Title:** A text field containing 'New device request for' followed by a dynamic content placeholder (blue square with 'S' and a dot) and 'Title x'.
- * Assigned to:** A text field containing a dynamic content placeholder (blue square with 'S' and a dot) and 'Approver x ;'.
- Details:** A larger text area containing the text 'A new device has been requested' followed by three lines of dynamic content: a placeholder and 'Title x', '\$' followed by a placeholder and 'Price x', and 'Comments:' followed by a placeholder and 'Comments x'.
- Item link:** A text field containing a dynamic content placeholder (blue square with 'S' and a dot) and 'Link to item x'.
- Item link description:** A text field containing the text 'This is the requested device'.

At the bottom right of the dialog, there is a link that says 'Add dynamic content' followed by a plus icon in a square box.

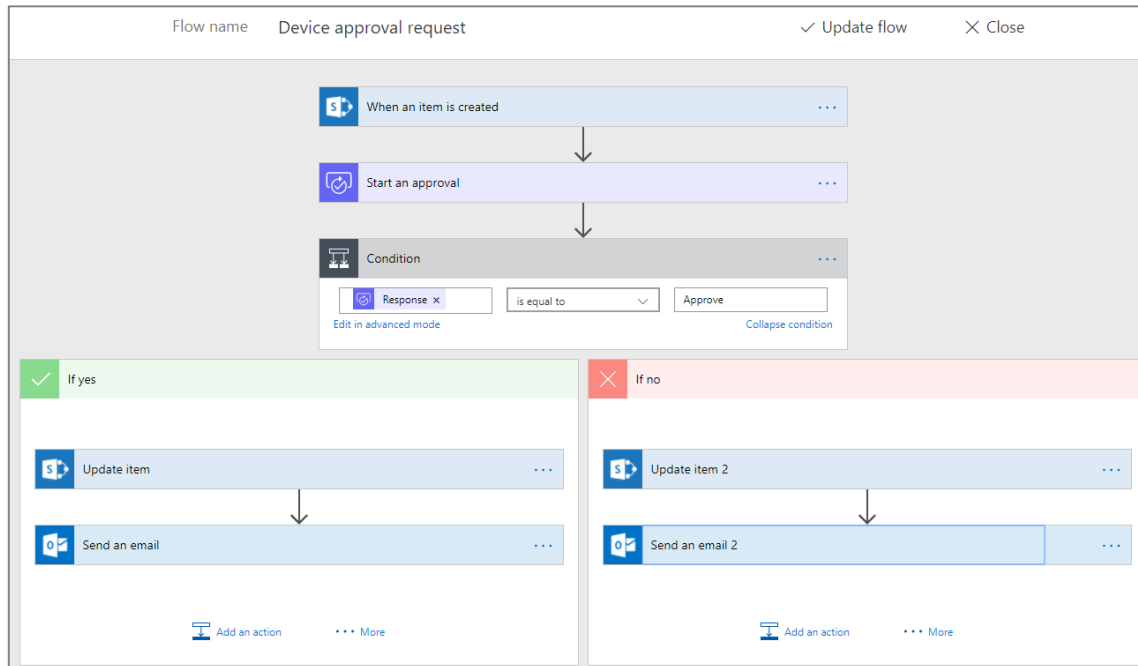


Responding to the Approval Response

- Start an Approval action followed by a condition
 - Allows flow to determine if approval was accepted or rejected

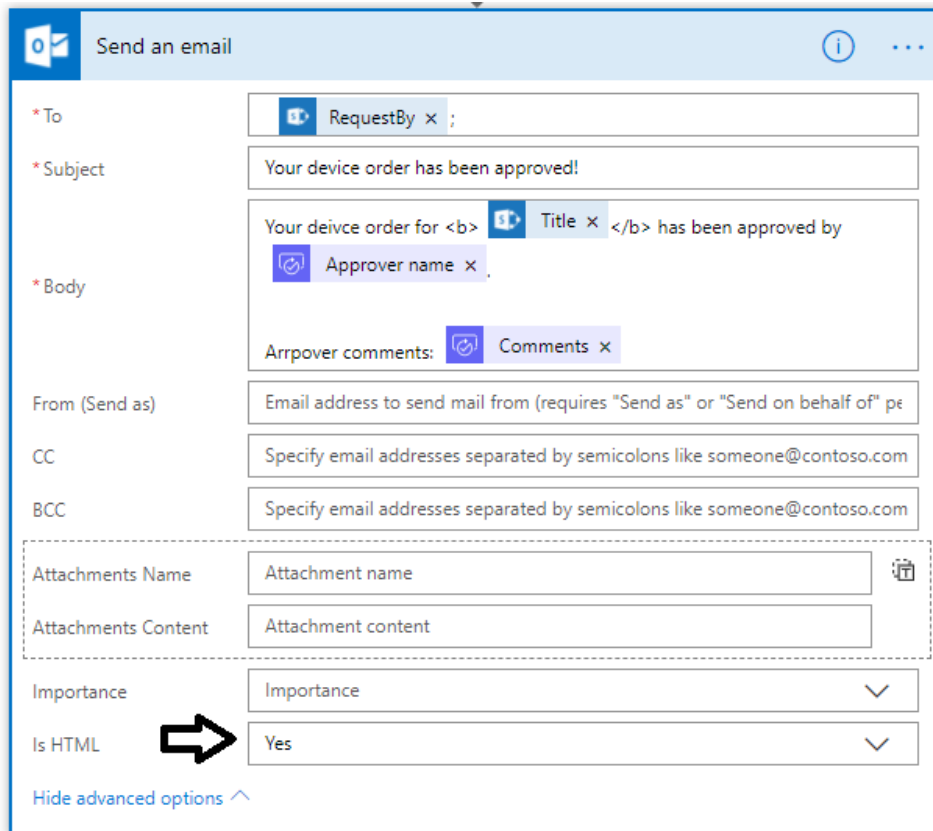


- Condition has If yes branch and If no branch for both outcomes



Implementing If yes Branch using Email

- If request is approved, send notification email to requestor



The screenshot displays the 'Send an email' dialog box with the following fields and values:

- To:** RequestBy x ;
- Subject:** Your device order has been approved!
- Body:** Your device order for Title x has been approved by Approver name x .
Approver comments: Comments x
- From (Send as):** Email address to send mail from (requires "Send as" or "Send on behalf of" pe
- CC:** Specify email addresses separated by semicolons like someone@contoso.com
- BCC:** Specify email addresses separated by semicolons like someone@contoso.com
- Attachments:** A dashed box containing:
 - Attachments Name:** Attachment name
 - Attachments Content:** Attachment content
- Importance:** Importance (dropdown arrow)
- Is HTML:** Yes (dropdown arrow)

A large black arrow points to the 'Is HTML' dropdown menu. At the bottom left, there is a link 'Hide advanced options ^'.



Testing the Approval Flow

- Start by creating a new device request

The screenshot shows the 'Device Ordering App' interface. On the left, three product cards are displayed: 'ProBook 4440s' (\$679.00), 'ProBook 4545s' (\$499.00), and 'Compaq Pro 4300' (\$859.00). The 'ProBook 4545s' card is highlighted with a blue background. On the right, the 'Form' section contains fields for 'Title' (HP - ProBook 4545s), 'Price' (499), 'Approver' (student@DDPAF.onmicrosoft.com), and 'Comments' (I really need this laptop). A 'Submit device request' button is at the bottom right.

| Product | Price | Specs |
|-----------------|----------|---|
| ProBook 4440s | \$679.00 | HP Laptop, Intel Core i5-3210M (2.5 GHz), 4GB DDR3, 500GB |
| ProBook 4545s | \$499.00 | HP Laptop, Intel Core i3-3110M (2.4 GHz), 4GB DDR3, 500GB |
| Compaq Pro 4300 | \$859.00 | HP All in one, Intel Core i5-3470S (2.9 GHz), 4GB DDR3, 500GB |

- Adding item to SharePoint list triggers approval process to start

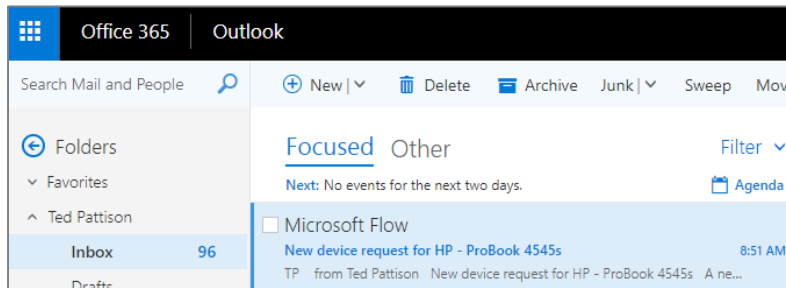
The screenshot shows the 'Critical Path Labs Team Site' in SharePoint. A table titled 'DeviceOrder' is displayed with the following data:

| Title | DeviceID | Price | RequestBy | Approver | ApprovalStatus | Comments |
|--------------------|----------|----------|-------------------------------|-------------------------------|----------------|---------------------------|
| HP - ProBook 4545s | 45 | \$499.00 | Student@DDPAF.onmicrosoft.com | student@DDPAF.onmicrosoft.com | InReview | I really need this laptop |

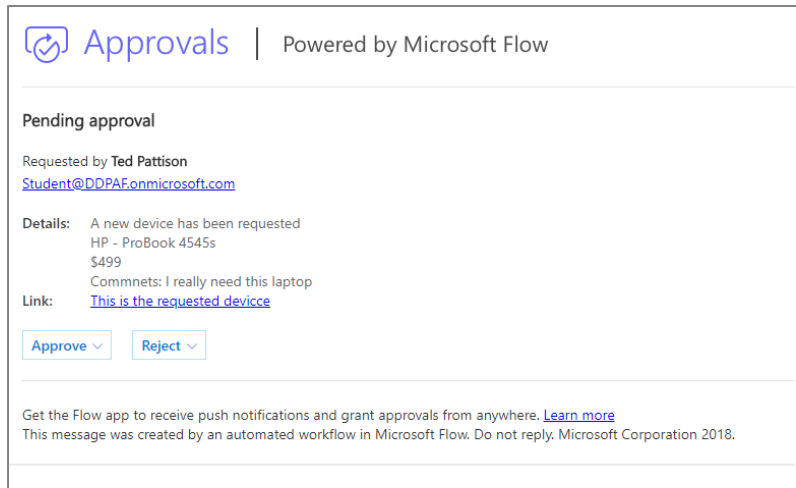


Sending Email Notification to an Approver

- The flow sends notification email to the approver
 - Flow execution currently paused inside **Start an Approval** action

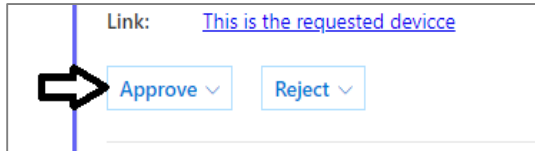


- Email allows approver to approve or reject approval request

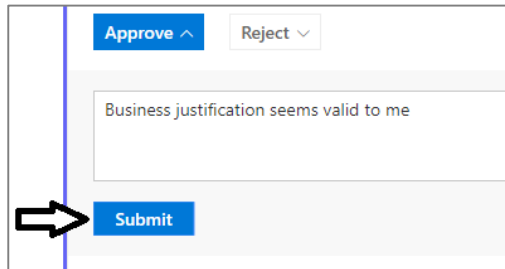


Approving an Approval Request

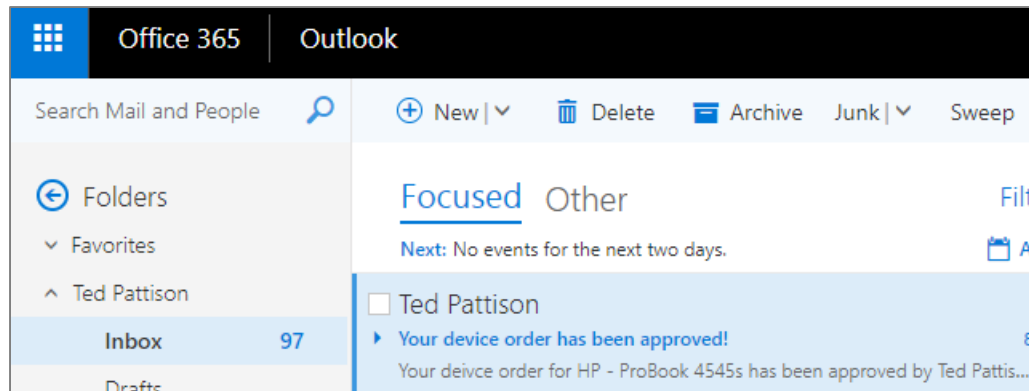
- Notification email provides button to approve or reject request



- Approver can enter comment and submit approval (or rejection)



- Approval or rejection unblocks flow which continue down appropriate branch
 - Approval response determines whether to send approval email or rejection email




Rejecting an Approval Request


- In the case of a rejected request...

Details: A new device has been requested
Toshiba - Portege Z935-ST4N02
\$979.99
Comments: I already have a great laptop but I want another one for no good reason.

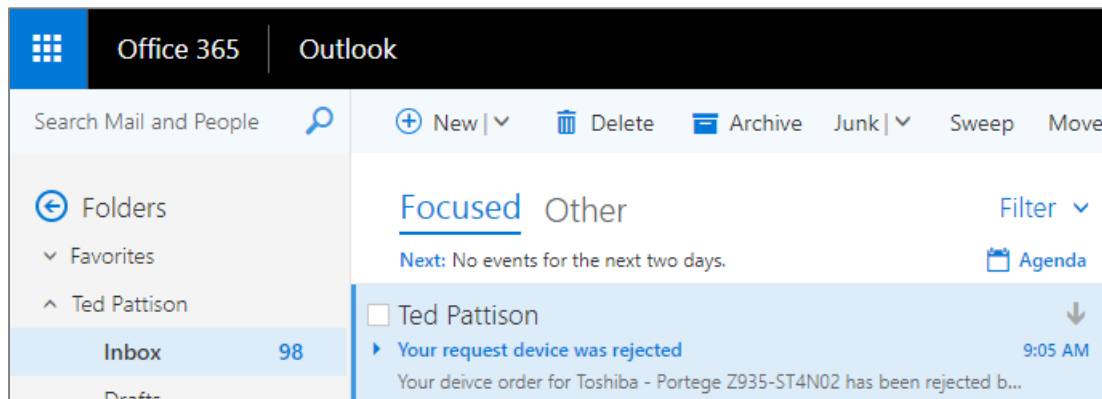
Link: [This is the requested device](#)

Approve  Reject ^

You only need one laptop!

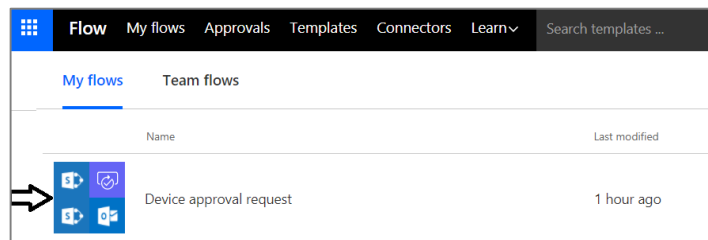
 Submit

- Approval flow sends a notification about rejection

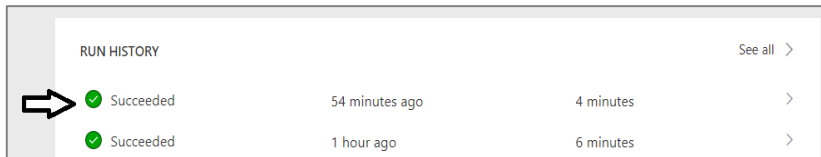


Run History

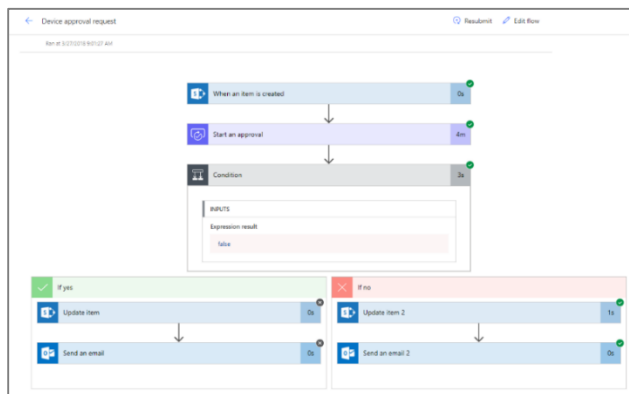
- Flow tracks run history of flow that have started
 - Click on a flow to see its RUN HISTORY list



- RUN HISTORY list has entry for each flow that has started



- Drilling into flow run history shows execution path and data



Updating a SharePoint List Item

- Approval flow can update SharePoint list items
 - Used to show SharePoint users the outcome of approval process

Home

CP Critical Path Labs Team Site

+ New Quick edit Export to Excel Flow PowerApps ...

DeviceOrder

| Title ▾ | DeviceID ▾ | Price ▾ | RequestBy ▾ | Approver ▾ | ApprovalStatus ▾ |
|-------------------------------|------------|----------|-------------------------------|-------------------------------|------------------|
| HP - ProBook 4545s | 45 | \$499.00 | Student@DDPAF.onmicrosoft.com | student@DDPAF.onmicrosoft.com | Approved |
| Toshiba - Portege Z935-ST4N02 | 98 | \$979.99 | Student@DDPAF.onmicrosoft.com | student@DDPAF.onmicrosoft.com | Rejected |



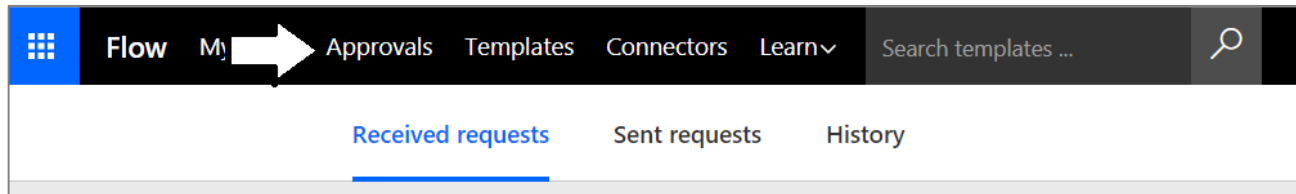
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Approvals Center

- Microsoft Flow provides Approvals Center
 - Provides alternative to email for approve/reject processing
 - Accessible through browser



- Provides monitoring of completed approvals and pending approvals

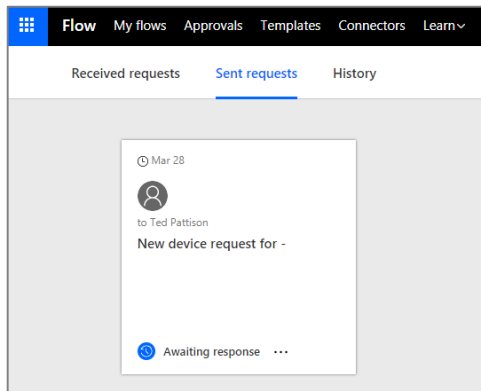
This screenshot shows the 'History' tab in the Microsoft Flow Approvals Center. It displays a table of requests with columns for Requester, Title, Date, and Outcome. There are two requests listed: one rejected and one approved. A filter bar at the top allows filtering by title, and a dropdown menu shows 'Received' as the selected filter.

| REQUESTER | TITLE | DATE ↑ | OUTCOME |
|-----------------|--|----------------|----------|
| TP Ted Pattison | New device request for Toshiba - Portege Z935-S... | 52 minutes ago | Rejected |
| TP Ted Pattison | New device request for HP - ProBook 4545s | 1 hour ago | Approved |

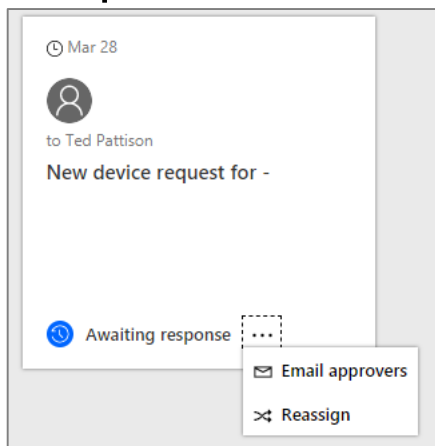


Examining Sent Request

- Requester can view requests he/she has submitted

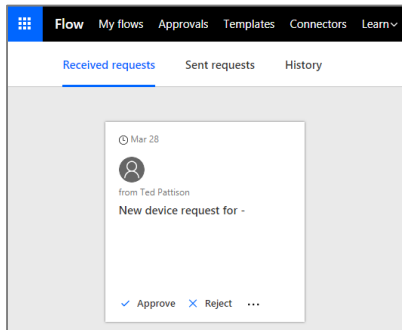


- Requester can email approver(s) or resign to different approver

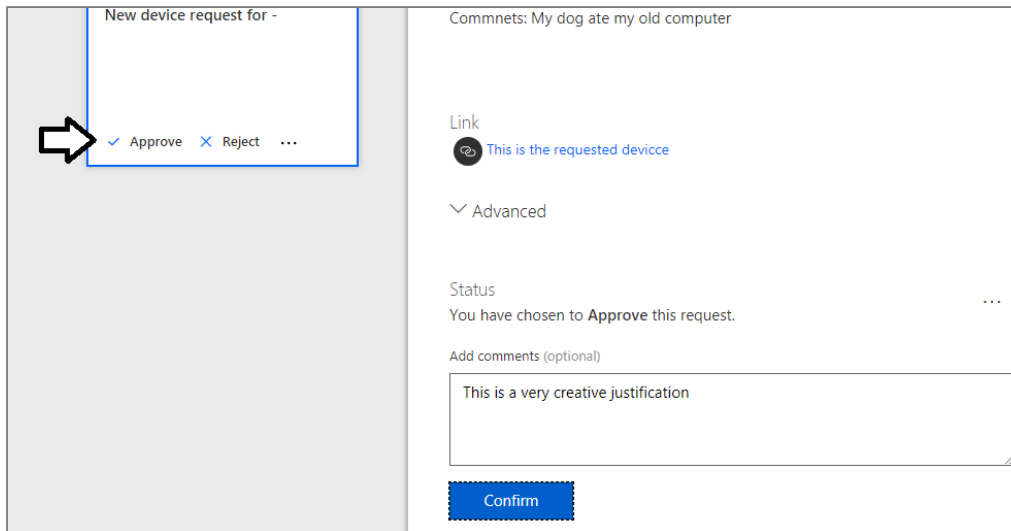


Examining Received Requests

- Approvers can see list of all their approval requests

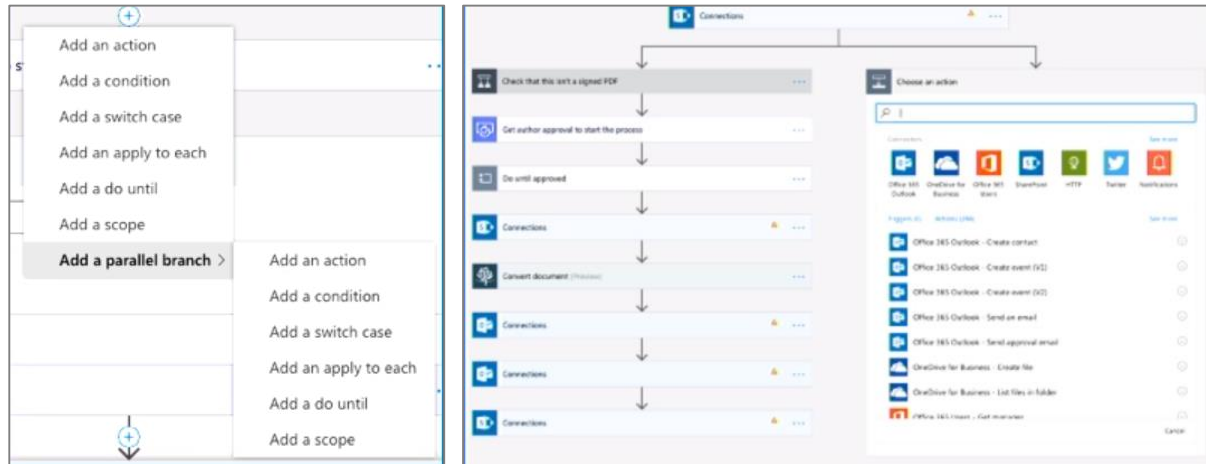


- Approver can approve or reject approval request

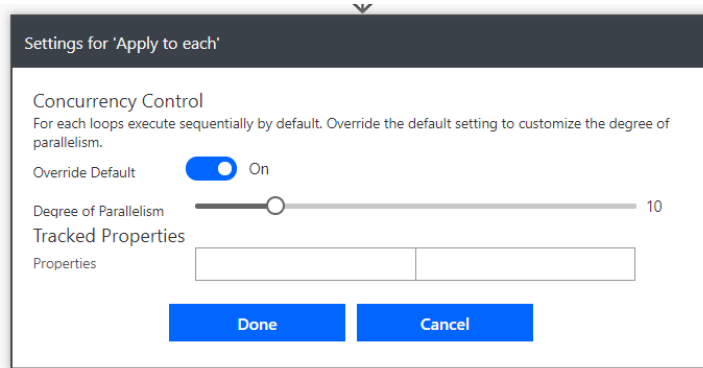


Parallel Execution

- Add parallel branch from above using ⊕



- Apply to each is sequential by default
 - Adding parallel execute to Apply to each



Summary

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