Microsoft Power Platform

Build Your Agent Using Microsoft Copilot Studio

Agenda

Introduction to Microsoft Copilot Studio

Lab 01: Create your first agent in Microsoft Copilot Studio

Lab 02: Authoring 101

Lab 03: Knowledge sources, AI knowledge, and custom instructions

Lab 04: Build and Invoke Power Automate cloud flows

Lab 05: Invoke AI Builder prompts

Lab 06: Make HTTP requests to connect to an API

Lab 07: Use generative AI orchestration to interact with your connectors

Lab 08: Using topic inputs

Lab 09: Advanced generative Orchestration

Q&A

Agenda

- Coffee – 8am till 10am
- Lunch break – 11:30am

Introduction to Copilot Studio

Power CAT

BRAND GUIDANCE

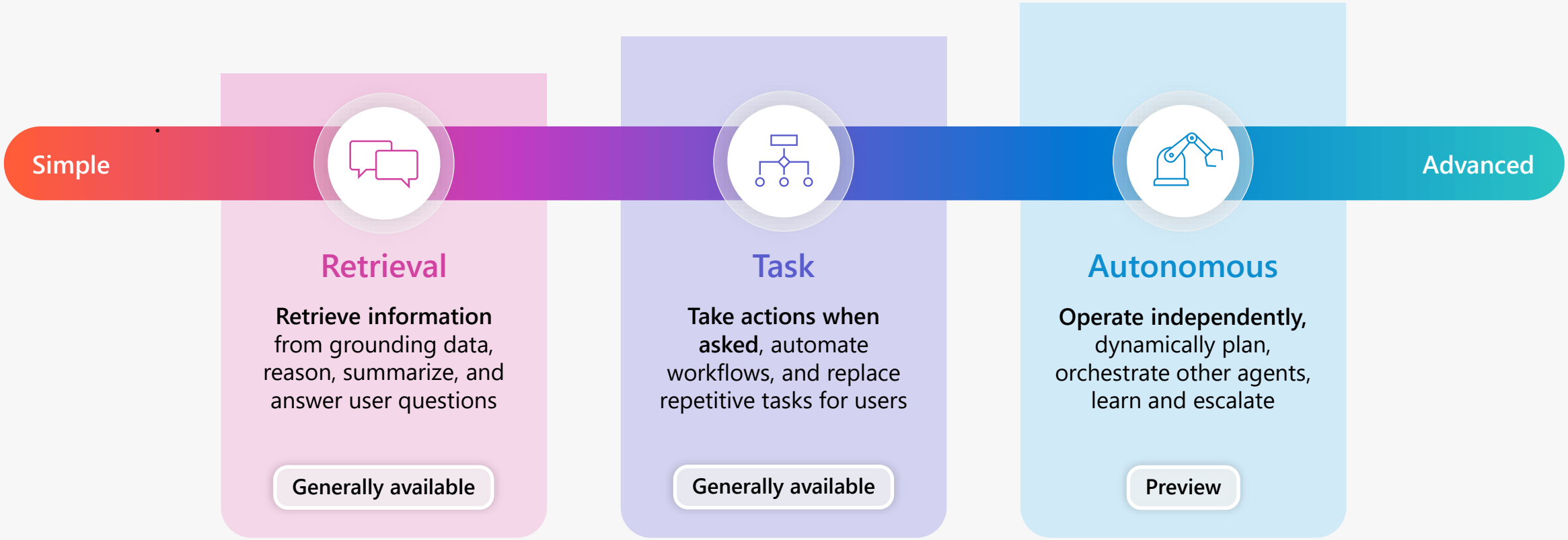
Brand Guidance

Microsoft 365 Copilot is the UI for AI – your personal, intelligent assistant for work, grounded in your data and integrated into your Microsoft apps.

Microsoft Copilot Studio is our low code tool for creating agents and extending M365 Copilot.

Agents use AI to automate and execute business processes, working alongside or on behalf of a person, team, or organization. Agents range from simple, prompt-and-response agents to more advanced, fully autonomous agents.

Spectrum of agents

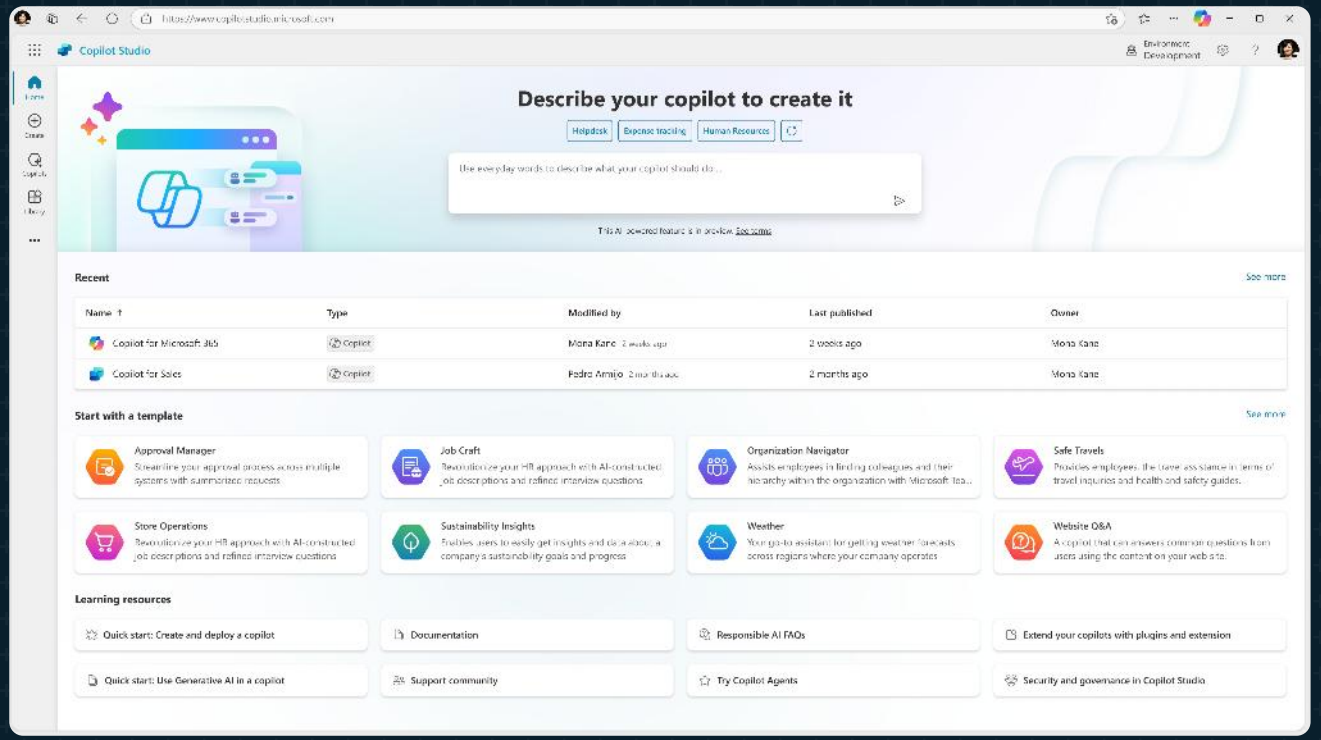


Agents vary in levels of complexity and capabilities depending on your need

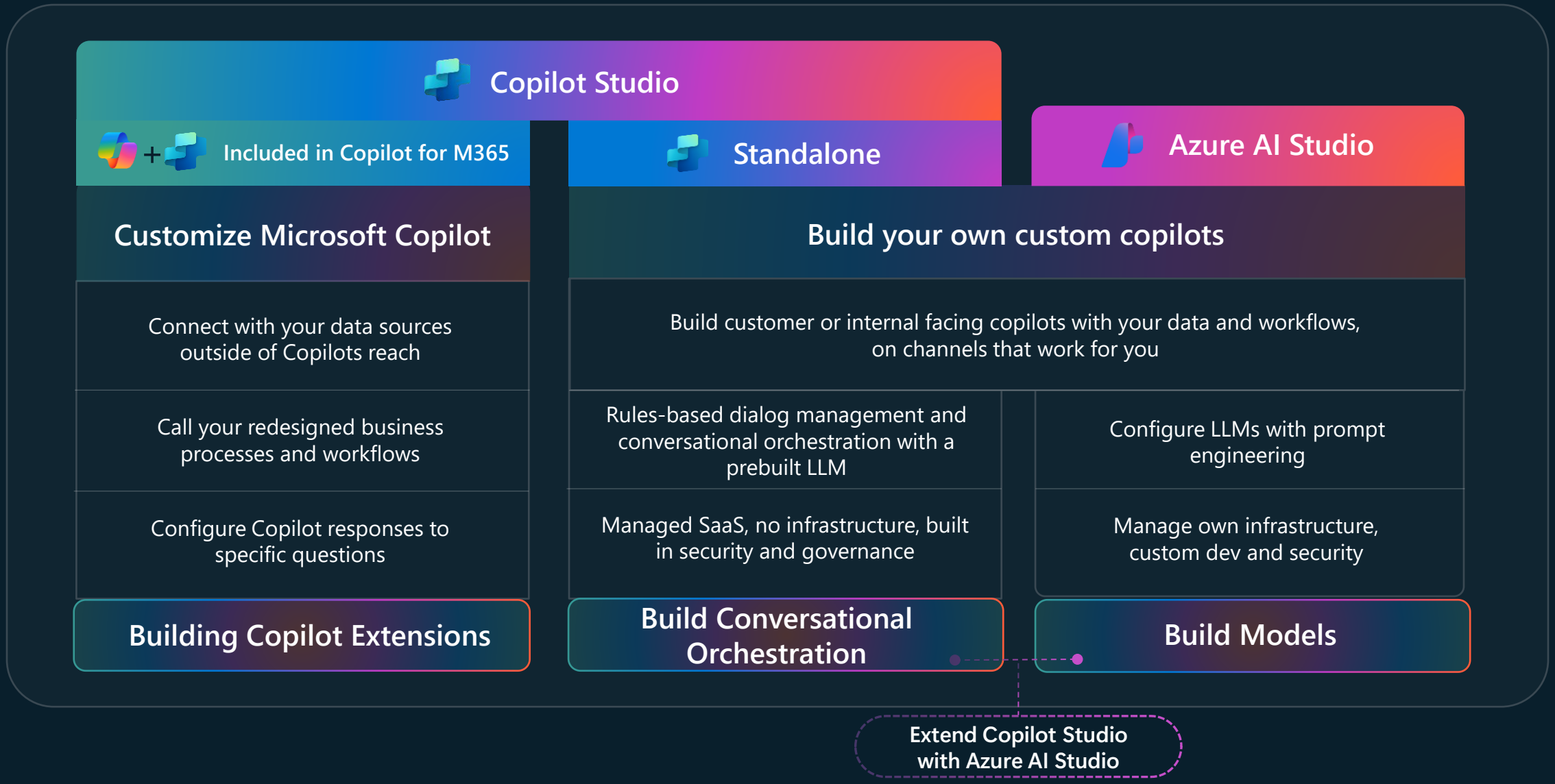
Microsoft Copilot Studio

Your agent, your way

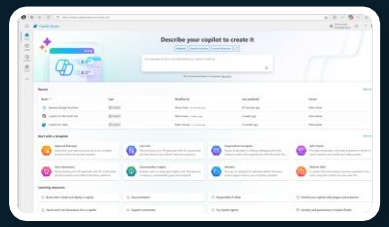
Copilot Studio is an end-to-end conversational AI product for **building your own agent** or **extending Microsoft Copilot** with generative AI, large language models and **your data**.



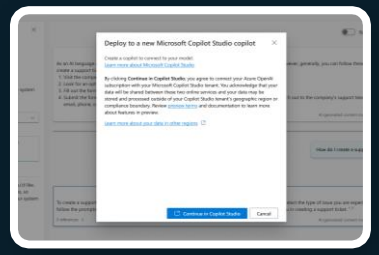
Different building journeys for different needs



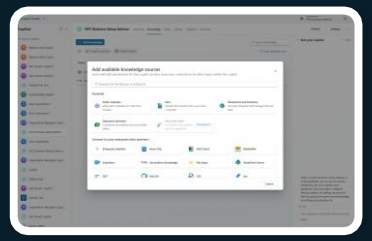
Create, manage, publish and extend agents
Live in minutes - all from one tool
and E2E SaaS service



Integrate with AI Services
Integrate with Azure AI Studio, Azure Cog Services, Bot Framework and various other Microsoft conversational services

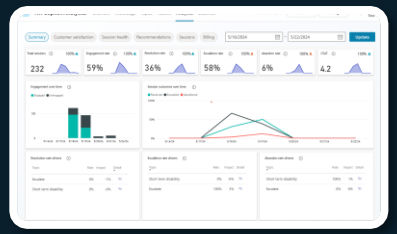


Build & Publish

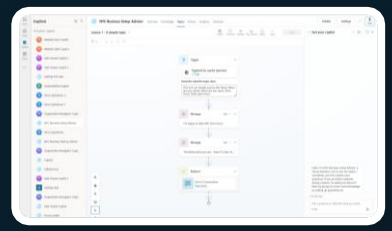


Chat over knowledge with Gen AI
Get enterprise specific answers over your files, websites, internal shares, Dataverse, third party systems and more

Monitor and Improve
with rich out-of-the-box insights and analytics

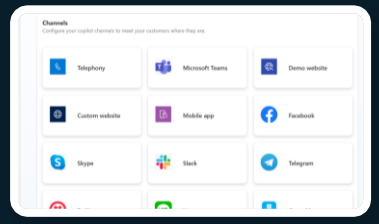


Copilot Studio

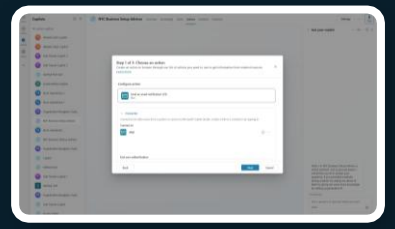


Create specific topics
Supplement generative responses with specific, curated topics where you want tight control. Build them easily with the powerful graphical studio

Publish to multiple channels,
and go live instantly on the SaaS service or choose to extend Copilot for Microsoft 365 with your custom capabilities



Analyze & Improve



Build actions & Plugins
Create actions, plugins, use 1000s of pre-built connectors or Power Automate to call your backends and APIs

Microsoft

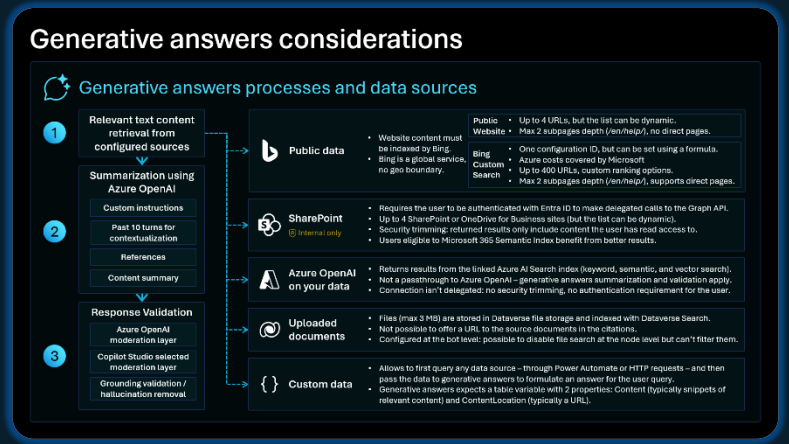
Copilot Studio
Implementation Guide

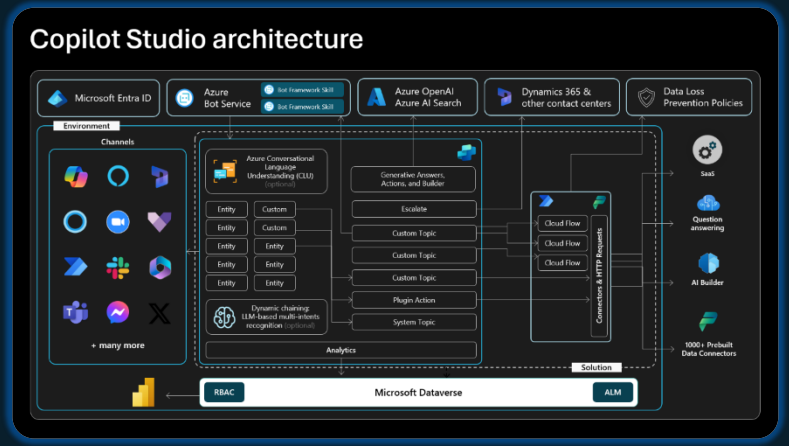
The Copilot Studio implementation guide provides a framework to do a 360-degree review of a agent or bot project.

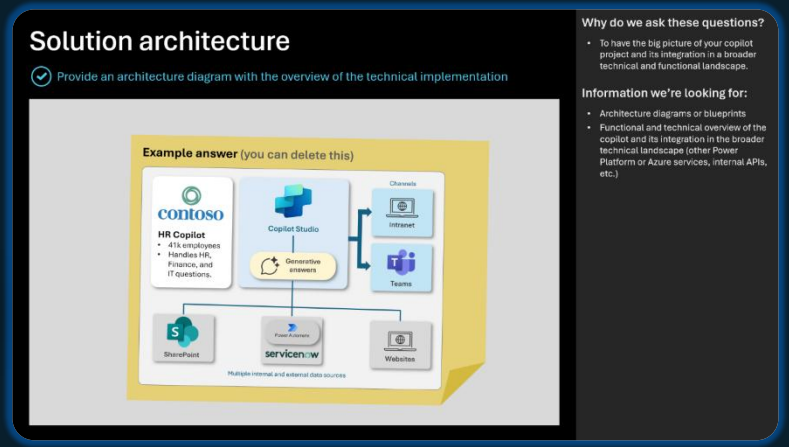
Through probing questions, it highlights potential risks and gaps, aims at aligning the project with the product roadmap, and shares guidance, best practices and reference architecture examples.

SCAN ME

aka.ms/CopilotStudioImplementationGuide







Get Started

Microsoft Power Platform

Go to aka.ms/CopilotStudioWorkshop

SCAN ME

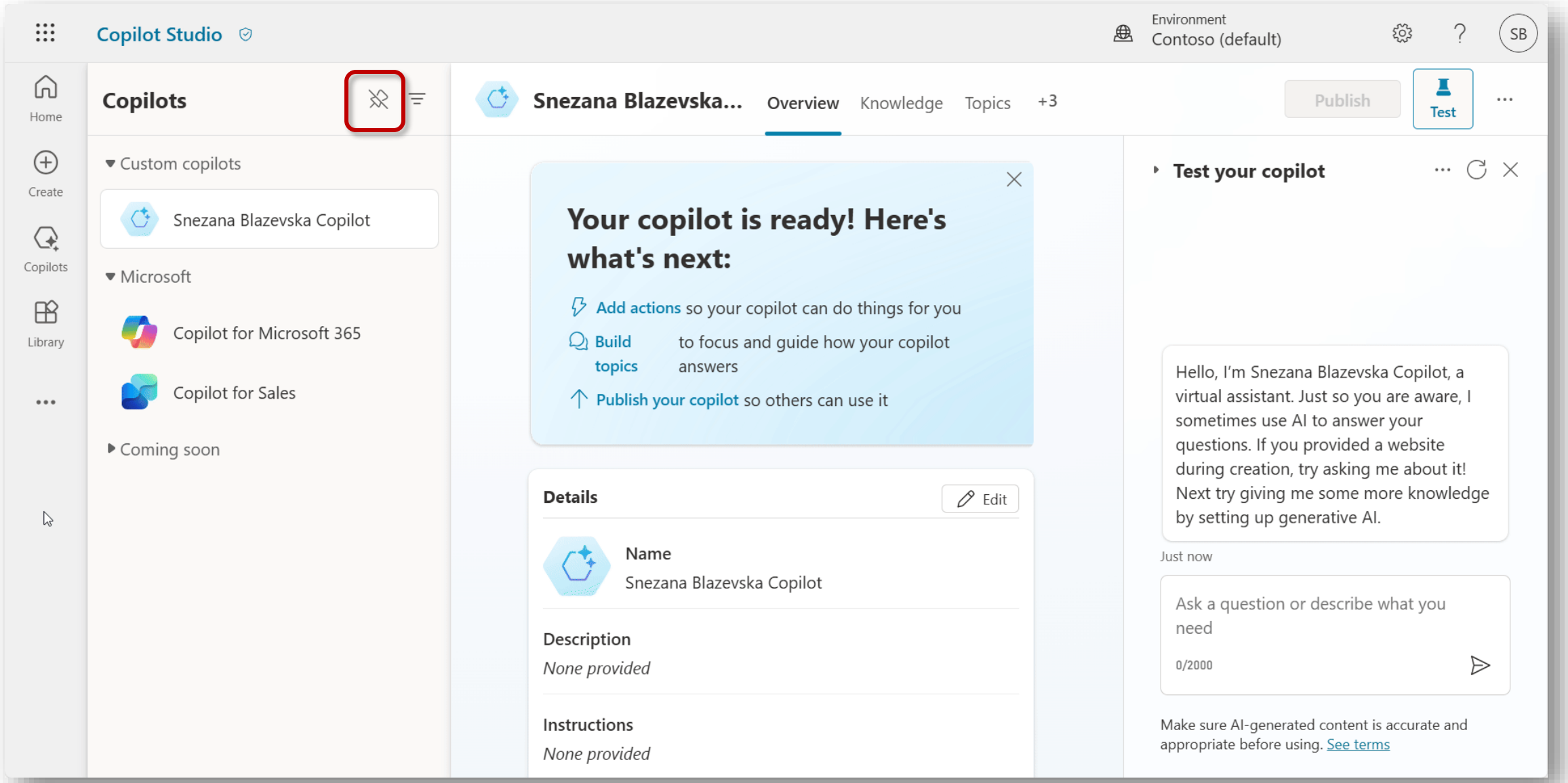
THEN:

1. **Download** and **unzip** the lab files locally.
2. Using the provided credentials, **log in** aka.ms/CopilotStudioStart

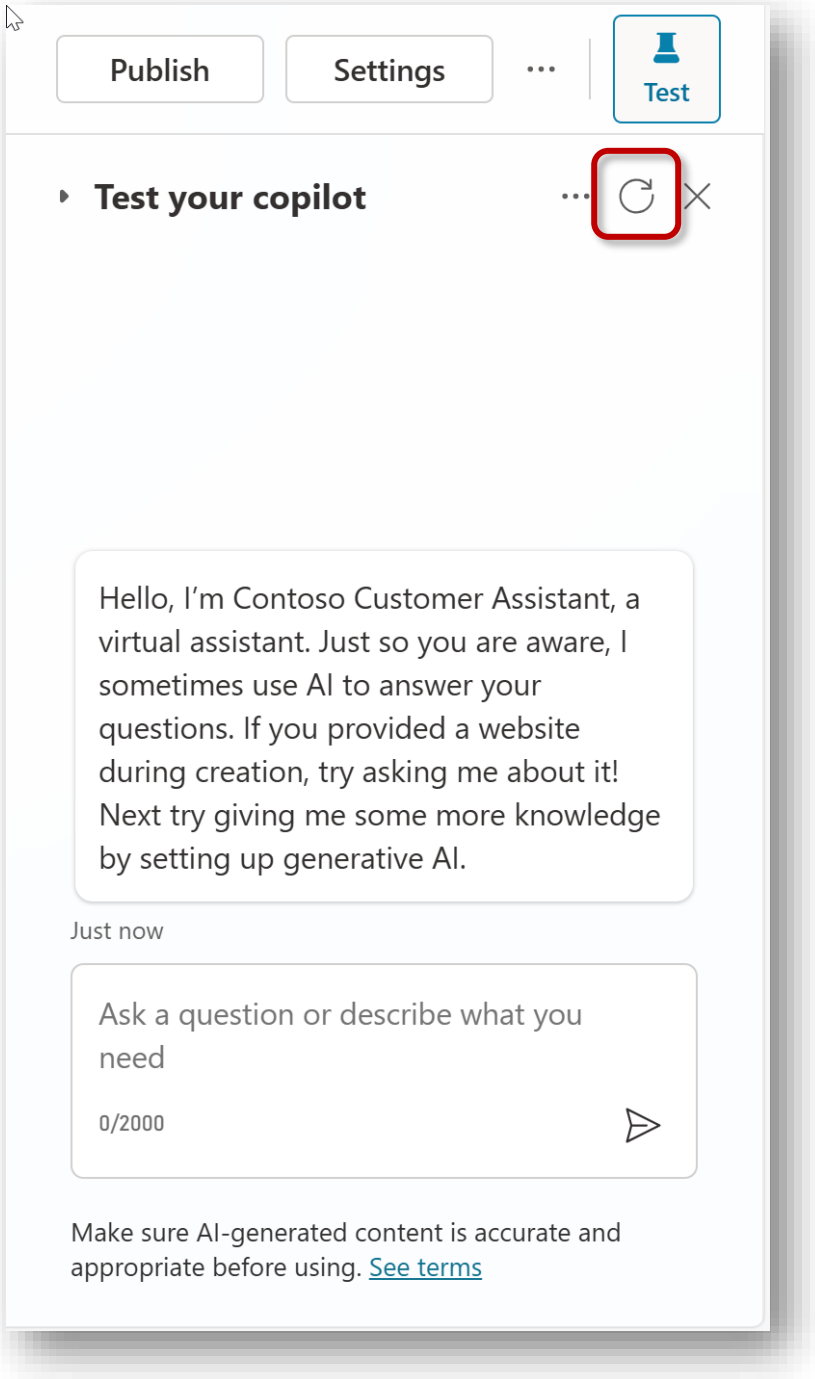
IMPORTANT LAB INSTRUCTIONS

1. **Follow the labs** most lab content is dependent on previous labs.
2. **If you want to deviate from the labs** and test your own scenarios, this is fine, but please do complete the labs first, and create your own separate custom agent for your own scenarios and exploration after you've completed the labs.
3. **Using a Mac? Use Chrome or Edge** as there is known issue being fixed.
4. **Trouble copy-pasting the content from PDFs?** Use Word versions.

Productivity tip #1: Unpin the Copilots pane



Productivity tip #2: Refresh the conversation between tests



Lab 01: Create your first agent in Microsoft Copilot Studio

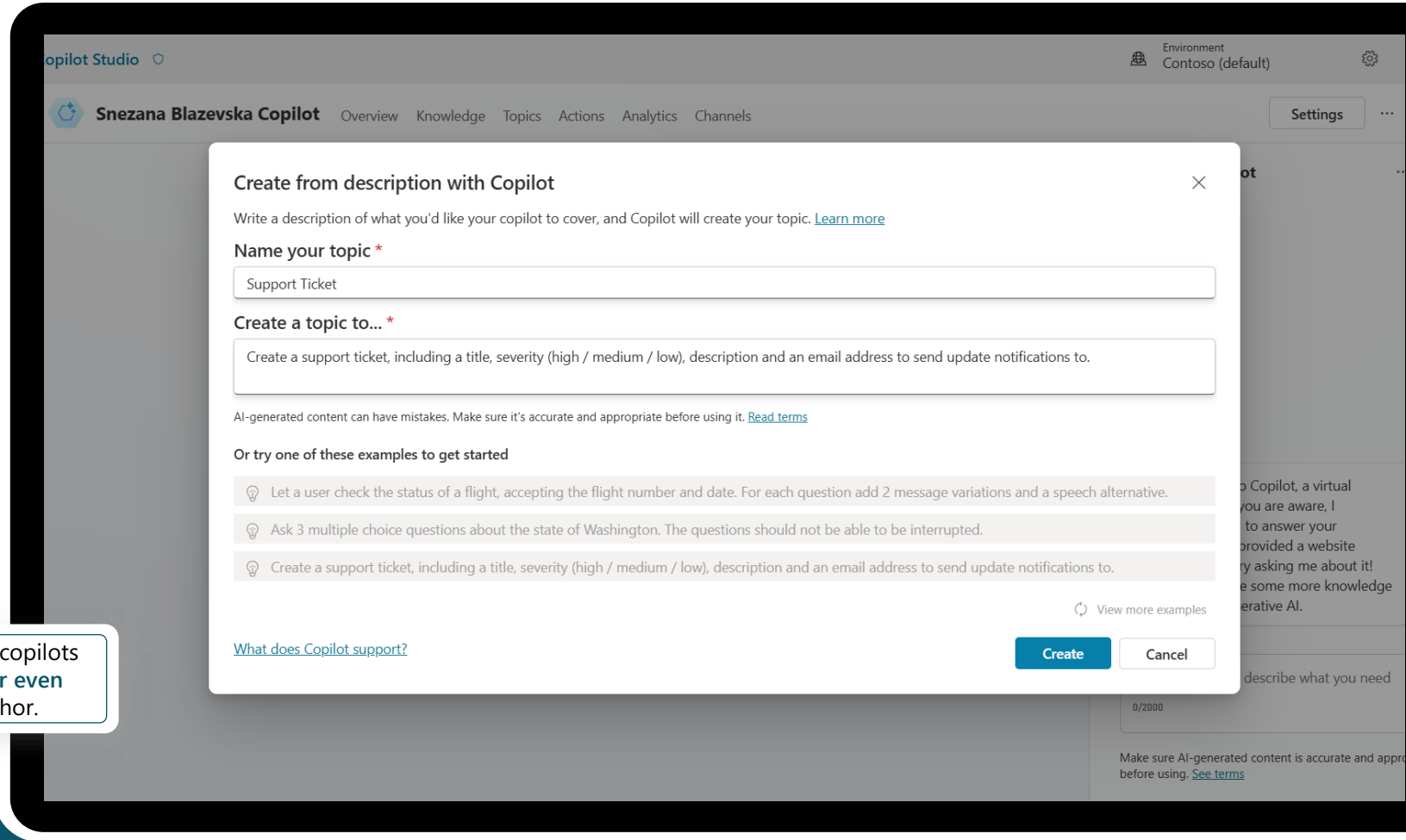
Copilot for Copilot Studio

AI assistance in building topics, designing and modifying the agent all through natural language

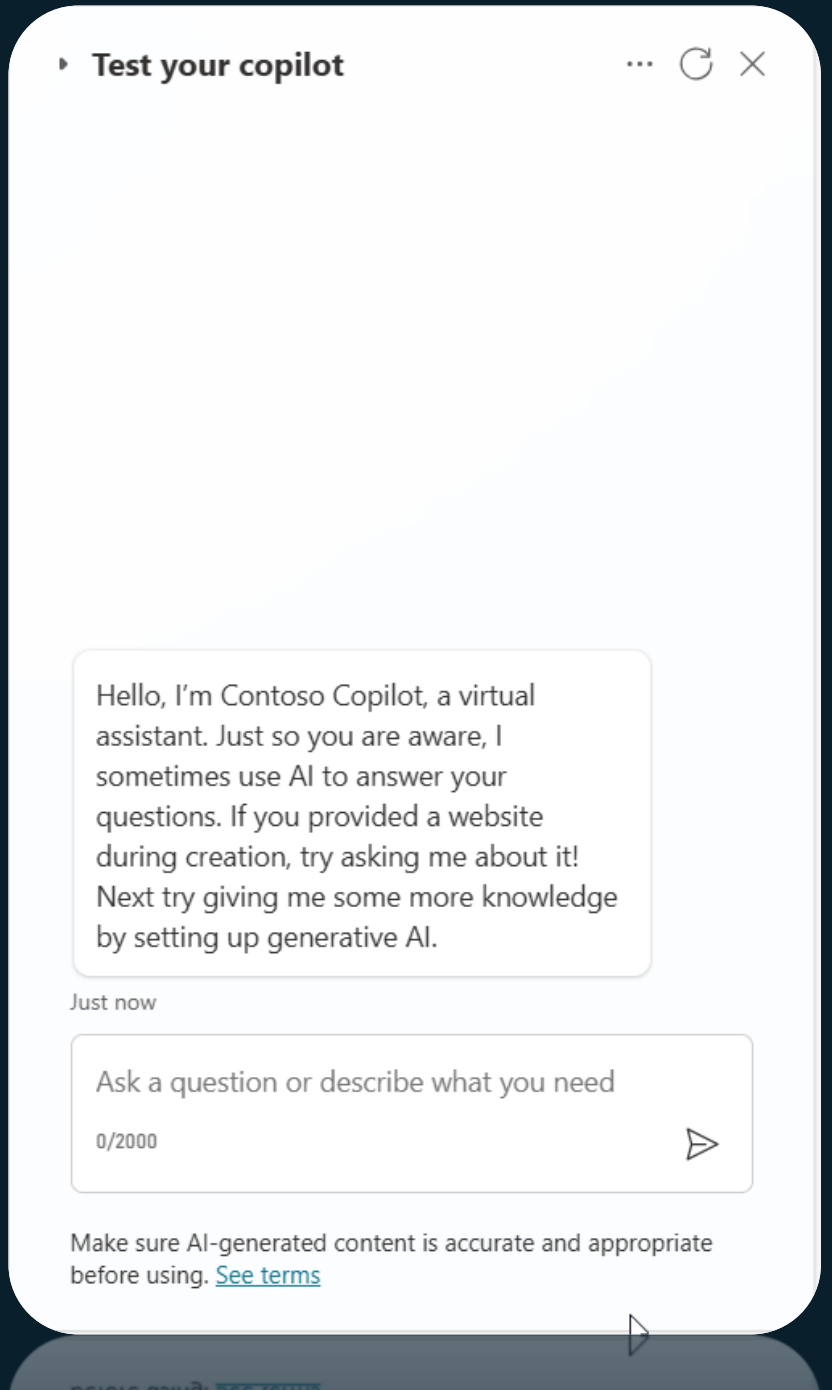
Assisted authoring for:

- Topic creation
- Topic iteration
- Response generation
- Adaptive Card generation
- Topic improvement suggestions
- Suggested trigger phrases, topic names, topic descriptions
- Transcript generation
- Copilot creation
- Topic suggestions

Azure bots take **months** to author → Copilots took **days** to author → Prompt-authored copilots will take **hours or even minutes** to author.



Demo Lab 1

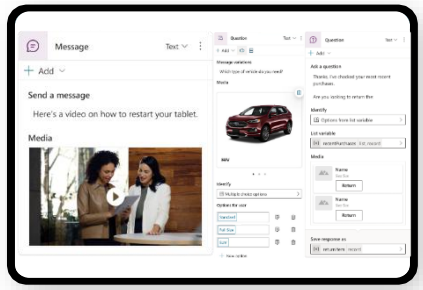

Test your copilot
Hello, I'm Contoso Copilot, a virtual assistant. Just so you are aware, I sometimes use AI to answer your questions. If you provided a website during creation, try asking me about it! Next try giving me some more knowledge by setting up generative AI.
Just now
Ask a question or describe what you need
0/2000
Make sure AI-generated content is accurate and appropriate before using. See terms

Lab time!

Lab 01 [40] minutes

Lab 02: Authoring 101

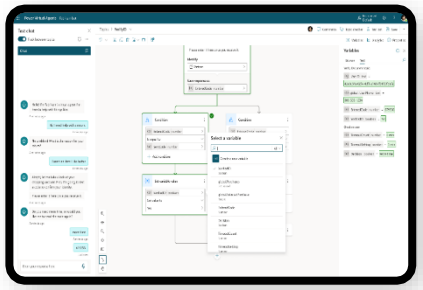
Copilot Studio authoring canvas



Rich Responses

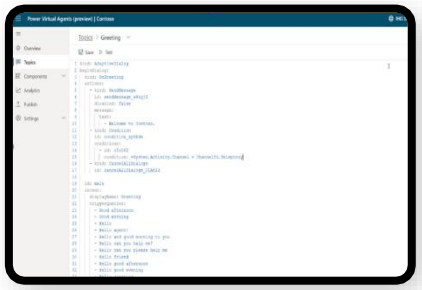
New features including:

- Adaptive Cards
- Images
- Videos
- Quick Replies



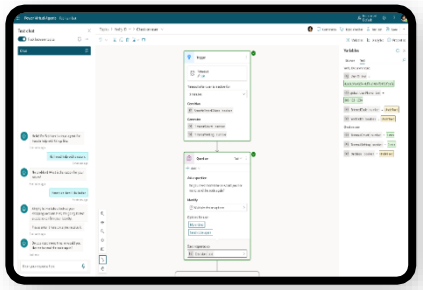
Power Fx-based variables system

- Power Fx integrated formula editor for variable management
- List / Record type support
- Condition nodes with Power Fx formula support
- Iterate over a List with new Loop nodes (coming soon)



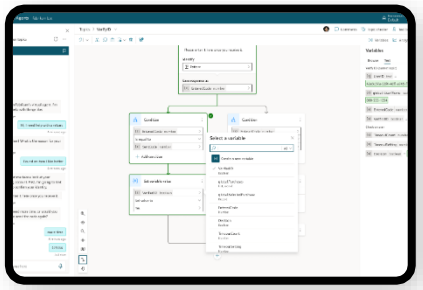
Code side-by-side

- Move between a visual editor and code
- Share and re-use topic logic between developers and bots



Event-driven & contextual triggering

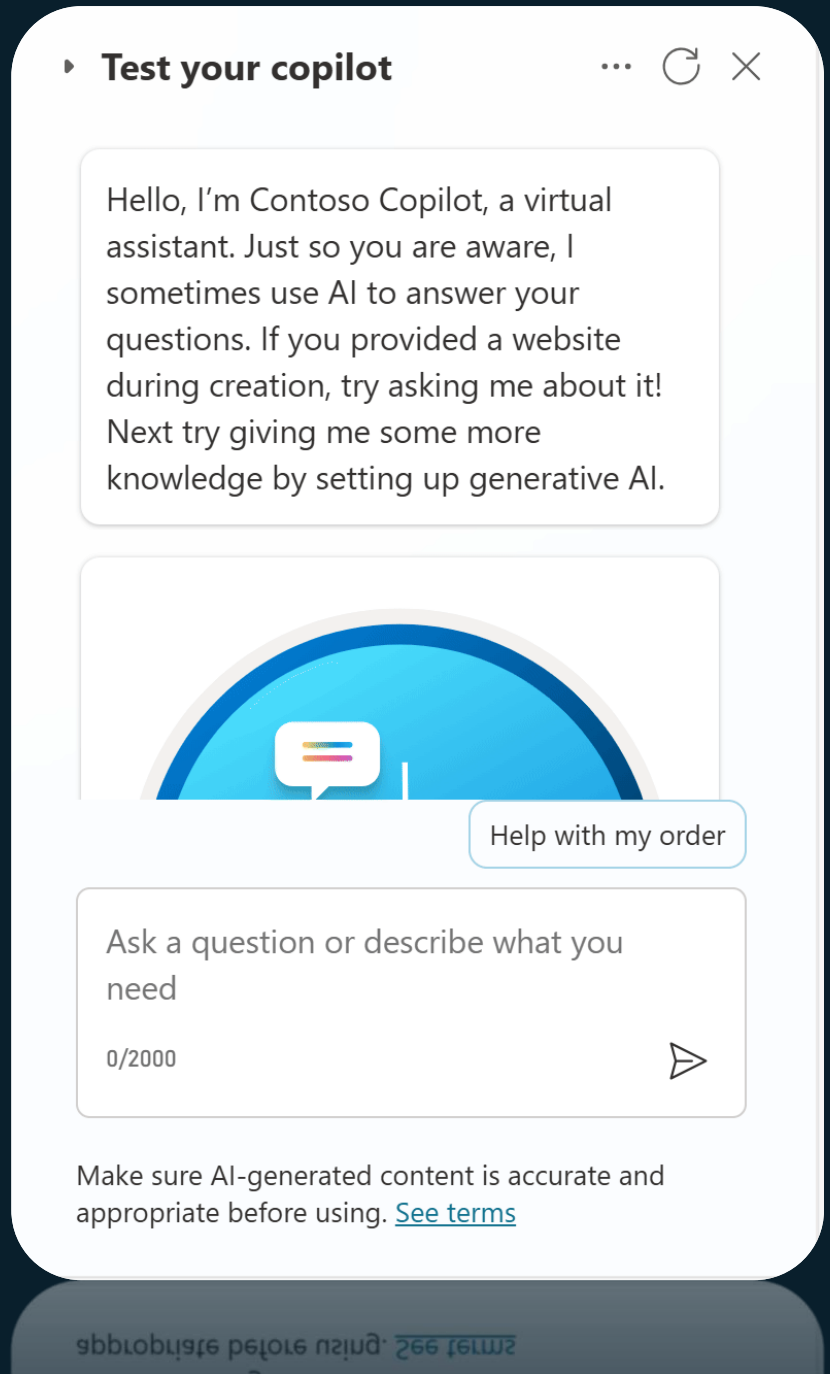
- Trigger an event that can interrupt Dialogs if it detects a certain value has been received
- Add more nuanced responses to a message when the bot runs into an issue.
- Bots can stay within context when a user asks for additional help or more details



Productivity

- Cut, Copy, Paste
- Multi-node selection
- Enhanced topic navigation

Demo Lab 2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Help with my order
Ask a question or describe what you need
0/2000
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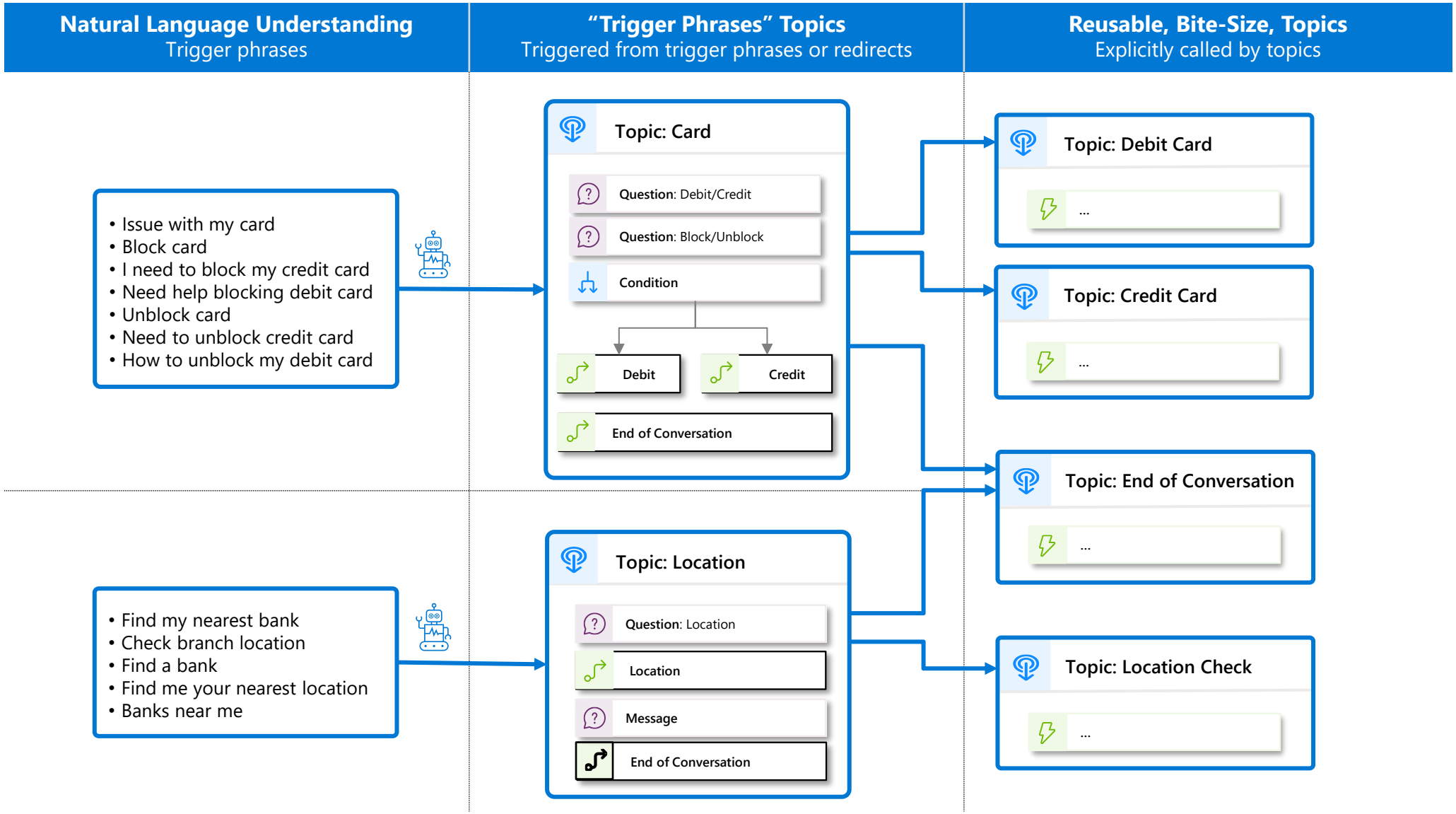
Lab time!

Lab 02 [60] minutes

Disambiguation with topic design



Natural language understanding

	Standard NLU model	Custom Azure CLU model	Generative orchestration
✓	✓ Default, out-of-the-box, model that comes pre-trained, with many predefined entity types. ✓ Configuration is done by adding trigger phrases and custom entities (either closed lists with values and synonyms, or regular expressions).	✓ Supports additional languages, with native models. ✓ Allows to further customize the intent triggering model for better intent recognition or to address specific industry requirements. ✓ Allows for complex entity extraction (e.g., of the same type). ✓ Entity extraction can also leverage Copilot Studio standard NLU.	✓ Uses a GPT large language model. ✓ Can handle multiple intents and chain topics and/or plugins. ✓ Automatically generate questions for missing inputs and answers complex entities and questions from the conversation context. ✓ Configuration is done by simply describing topics, plugin actions, and inputs/outputs.
✓	✓ Single intent recognition per query. ✓ Cannot be extended. ✓ Slot-filling multiple entities of the same type in the same query requires disambiguation for each (e.g., from and to cities)	✓ Single intent recognition per query. ✓ Configuration is done in Azure and involves additional costs. ✓ Has its own service limits that need to be evaluated. ✓ Azure CLU intents and Copilot Studio topics must be carefully kept in sync.	✓ As it's a generative AI feature, the licensing burn rate of messages is higher than in regular topic triggering. ✓ Preview capability.

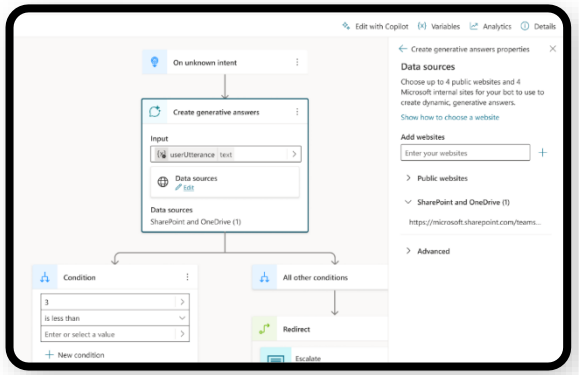
Lab 03: Knowledge sources, AI knowledge, and custom instructions

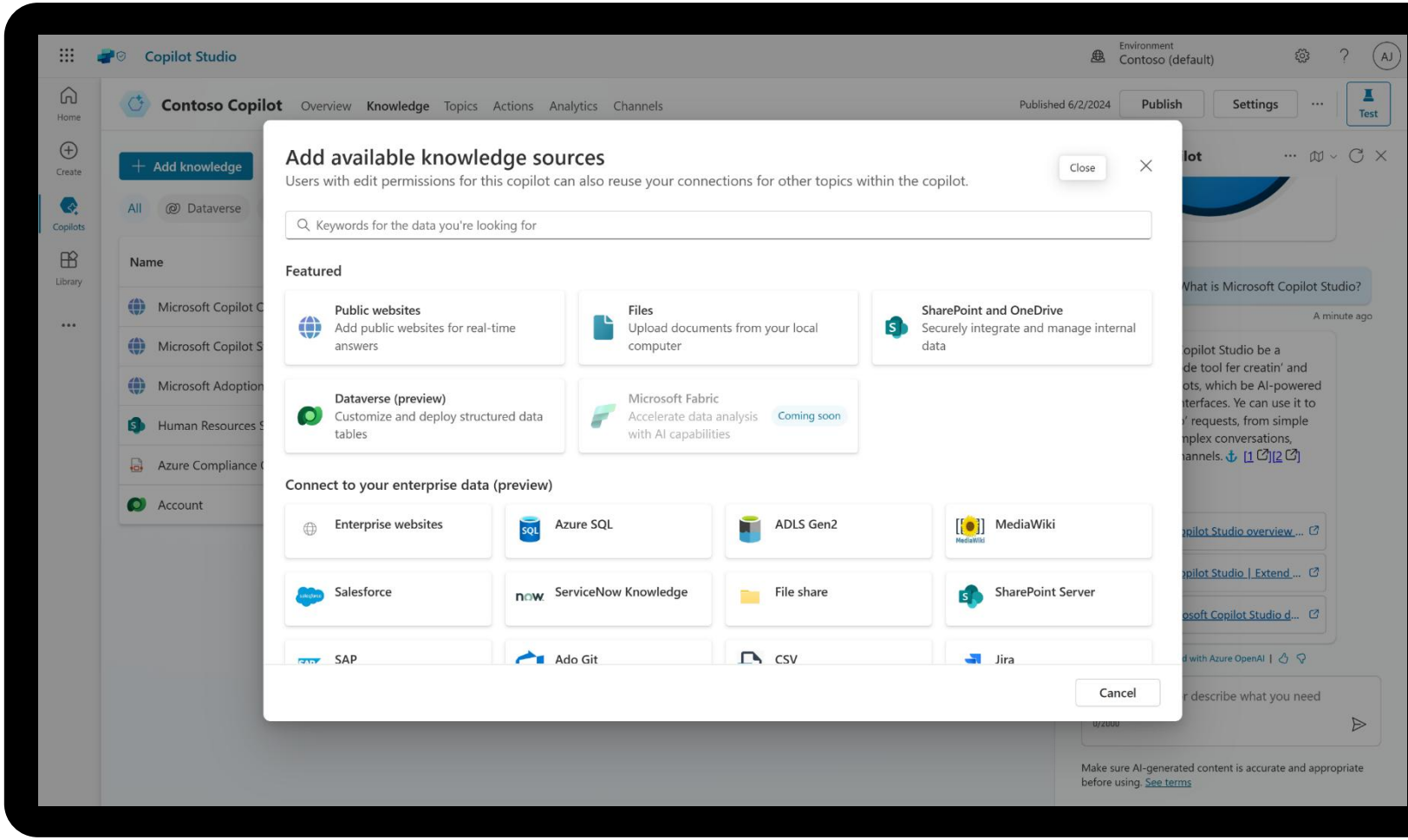
Knowledge sources

Enable multi-turn chat over your own internal and external knowledge sources and sites with generative answers

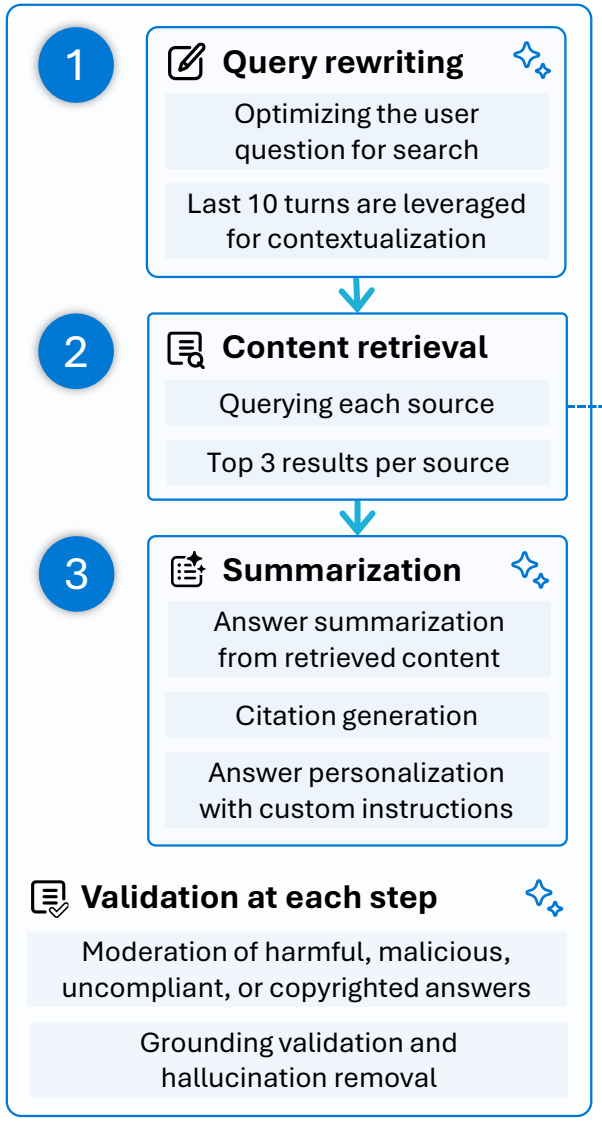
Copilots can answer thousands of questions out of the box in seconds

You can even pull data from an API or other backend system and enable generative chat over it





Knowledge sources & Generative AI



Public data

- Websites must be indexed by Bing.
- Bing being a global service, no regional boundary is possible.

Public Website
- Max 2 subpages depth (/en/help/), no direct pages.

Bing Custom Search
- One configuration ID, but it can be set using a formula.
- Azure costs covered by Microsoft
- Up to 400 URLs, custom ranking options.
- Max 2 subpages depth (/en/help/), supports direct pages.

SharePoint

Internal only

- Requires the user to be authenticated with Entra ID to make delegated calls to the Graph API.
- Matching files (max 3 MB) are retrieved to get detailed snippets to summarize.
- Security trimming: returned results only include content the user has read access to.
- Users eligible to Microsoft 365 Semantic Index benefit from better results.

Azure OpenAI on your data

preview

- Returns results from the linked Azure AI Search index (keyword, semantic, and vector search).
- Not a passthrough to Azure OpenAI – generative answers summarization and validation apply.
- Connection isn't delegated: no security trimming, no authentication requirement for the user.
- Can index content from public URLs/web addresses (useful if regional boundary is required).

Files

- Files (max 512 MB) are stored in Dataverse file storage and indexed with Dataverse Search.
- Not possible to offer a URL to the source documents in the citations.
- Documents are uploaded at the agent level. Gen Answers node will search across all uploaded documents or none, when disabled at a node level.

Custom data

- Requires a step to query the data source – using cloud flows, connectors, or HTTP requests.
- Results are passed as inputs to the generative answers to summarize an answer for the query.
- Input data needs to be in table format, with 3 properties: Content (typically snippets of relevant content) , ContentLocation (optional, typically a URL) and Title (optional).

Dataverse

preview

- Dataverse tables (max 15).
- Natural language queries are transformed in analytical queries (e.g., SQL) over structured data

Graph Connectors

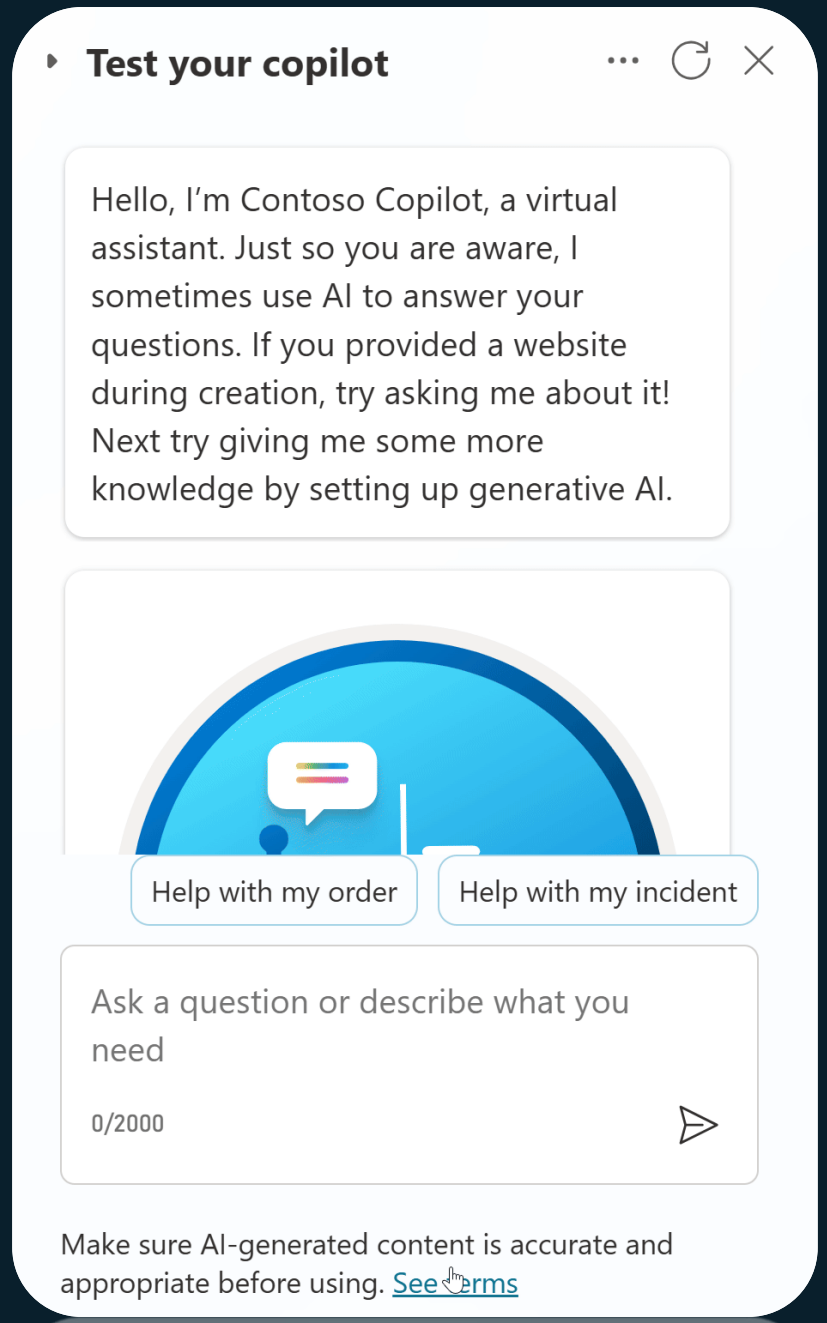
preview

- Connect to additional enterprise knowledge sources that are indexed in Microsoft Graph.
- Salesforce, ServiceNow, Confluence, Azure DevOps Wiki, etc.

Generative AI security and compliance considerations

- The large language models (LLM) Copilot Studio depends upon are the foundation models trained by OpenAI.
- Generative answers uses GPT-3.5 Turbo for summarization, but will soon be updated to GPT-4o as of Sep 2024.
- Models are hosted on internal Azure OpenAI services, honoring the Microsoft Services Trust boundary.
- Models are accessed and used following Microsoft Responsible AI principles and policies.
- Custom instructions can be added to generative answers to influence format and filters.
- Data storage and processing for Copilot Studio generative AI capabilities may result in data movement across regional boundaries. When local data storage and processing aren't available in the region, environment settings are available to disable features requiring Azure OpenAI or Bing Search, preventing data movement.
- Copilot Studio does not collect, nor provide any customer data, for use in the training of LLMs.
- For operations purposes only, conversations are stored temporarily in a service-operated and secured store so that authorized Microsoft employees via Secure Access Workstations (SAWs) with Just-In-Time (JIT) access requests may respond to support requests. Access can be controlled through Customer Lockbox.
- Generative AI capabilities log additional troubleshooting data, but only when the thumbs up or down reactions are used by the agent author in the Copilot Studio test pane.
- Given the existing control layers and to avoid further logging of customer data, Azure OpenAI abuse monitoring is disabled for Copilot Studio generative AI features.

Demo Lab 3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Help with my order
Help with my incident
Ask a question or describe what you need
0/2000
Make sure AI-generated content is accurate and appropriate before using. See terms

Lab time!

Lab 03 [30] minutes

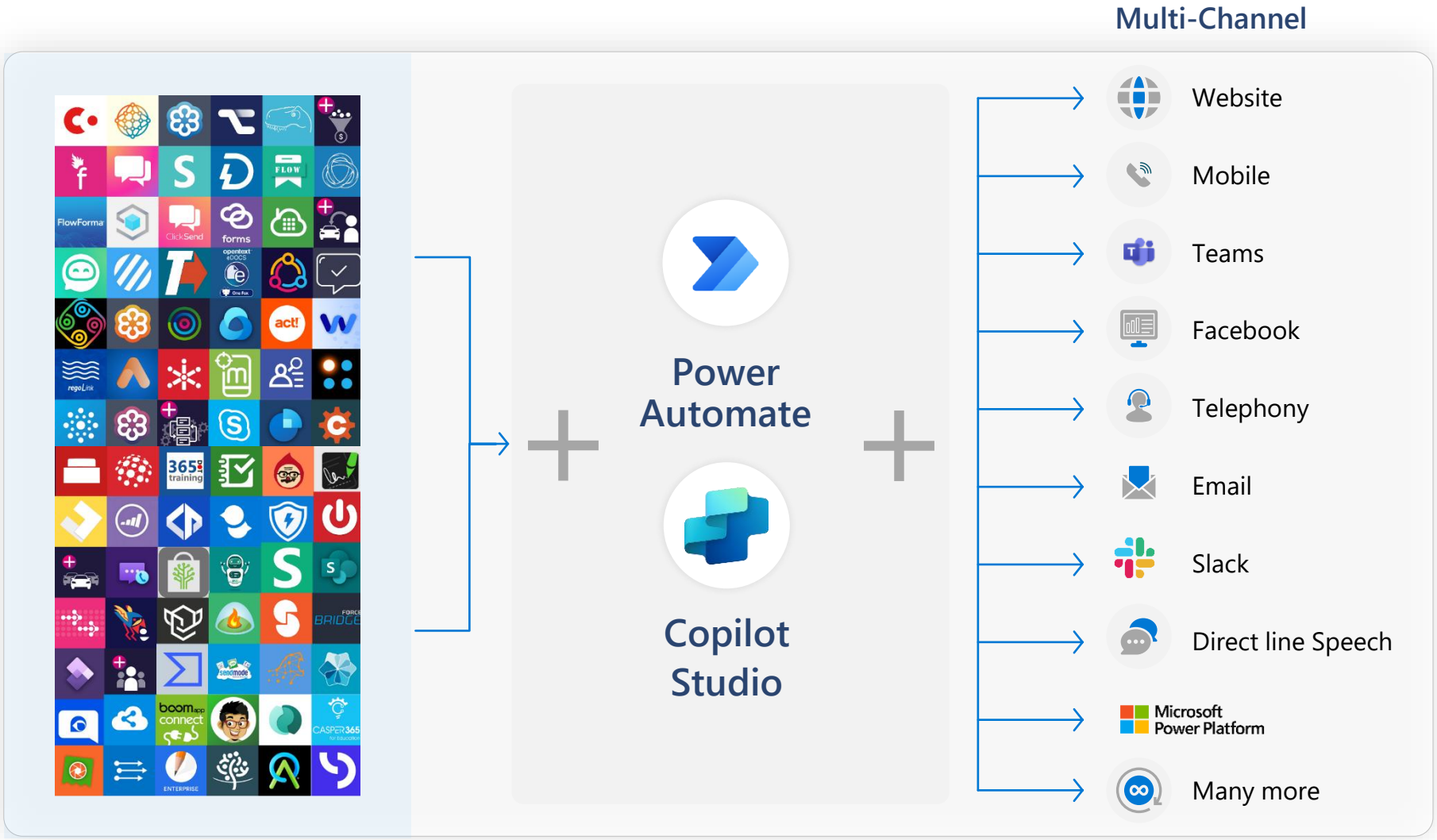
Lab 04: Build and call Power Automate cloud flows from your agent

Integration patterns considerations

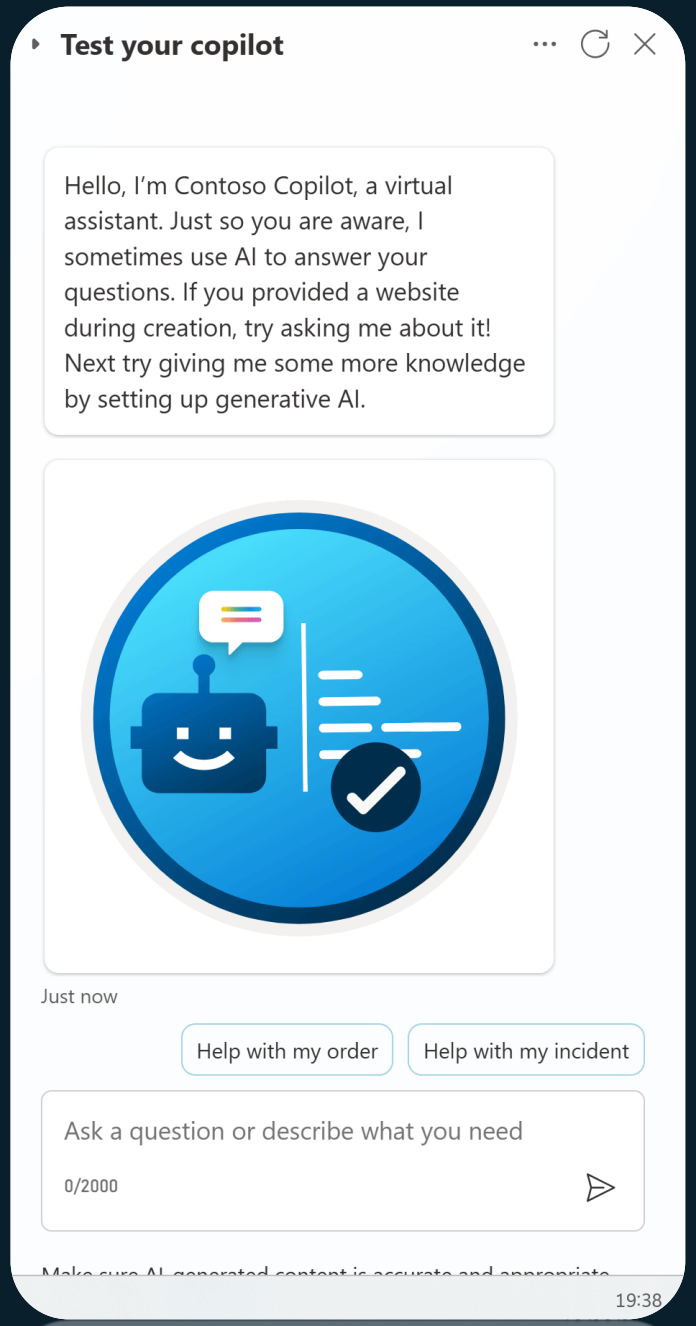
	Power Automate Cloud flows	HTTP requests & Connectors	Bot Framework Skills
✓	✓ No-code / low-code. ✓ Clear separation of integration and conversational logic. ✓ Can be monitored separately. ✓ Existing cloud flows can be updated to integrate with Copilot Studio.	✓ No-code / low-code. ✓ Faster runtime execution. ✓ Can be monitored as part of Copilot Studio App Insights integration. ✓ Can leverage variables, including environment variables and secrets. ✓ Variables, conditions, parameters, etc. can use Power Fx formulas. ✓ Parsing and error handling support.	✓ Synchronous execution. ✓ Support for private endpoints. ✓ Existing Bot Framework investments can be reused.
✓	✓ Invocation and execution of the cloud flow can add latency. ✓ If scale/performance are a concern, the higher-tier “Power Automate Process” plan can be evaluated. ✓ “Power Automate Process” required for service principal ownership. ✓ Need to return results within 100s.	✓ Mixing conversational logic and integration logic, but integration topics can be isolated, as they can be configured for inputs and outputs. ✓ Need to return results within 100s.	✓ Pro-code (e.g., C#) ✓ Runs in the Azure AI Bot Service. ✓ Additional costs need to be covered by an Azure subscription. ✓ ALM differs from Power Platform.

Power Platform Connectors

- Power Platform, including Power Automate and Copilot Studio, offers great integration capabilities, with more 1,200 native connectors or ways to create your own custom connectors to your APIs.
- For a good end-user experience, cloud flows, HTTP requests and connectors triggered from Copilot Studio must execute quickly so that the user doesn't have to wait too long for the agent to answer.



Demo Lab 4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Help with my incident
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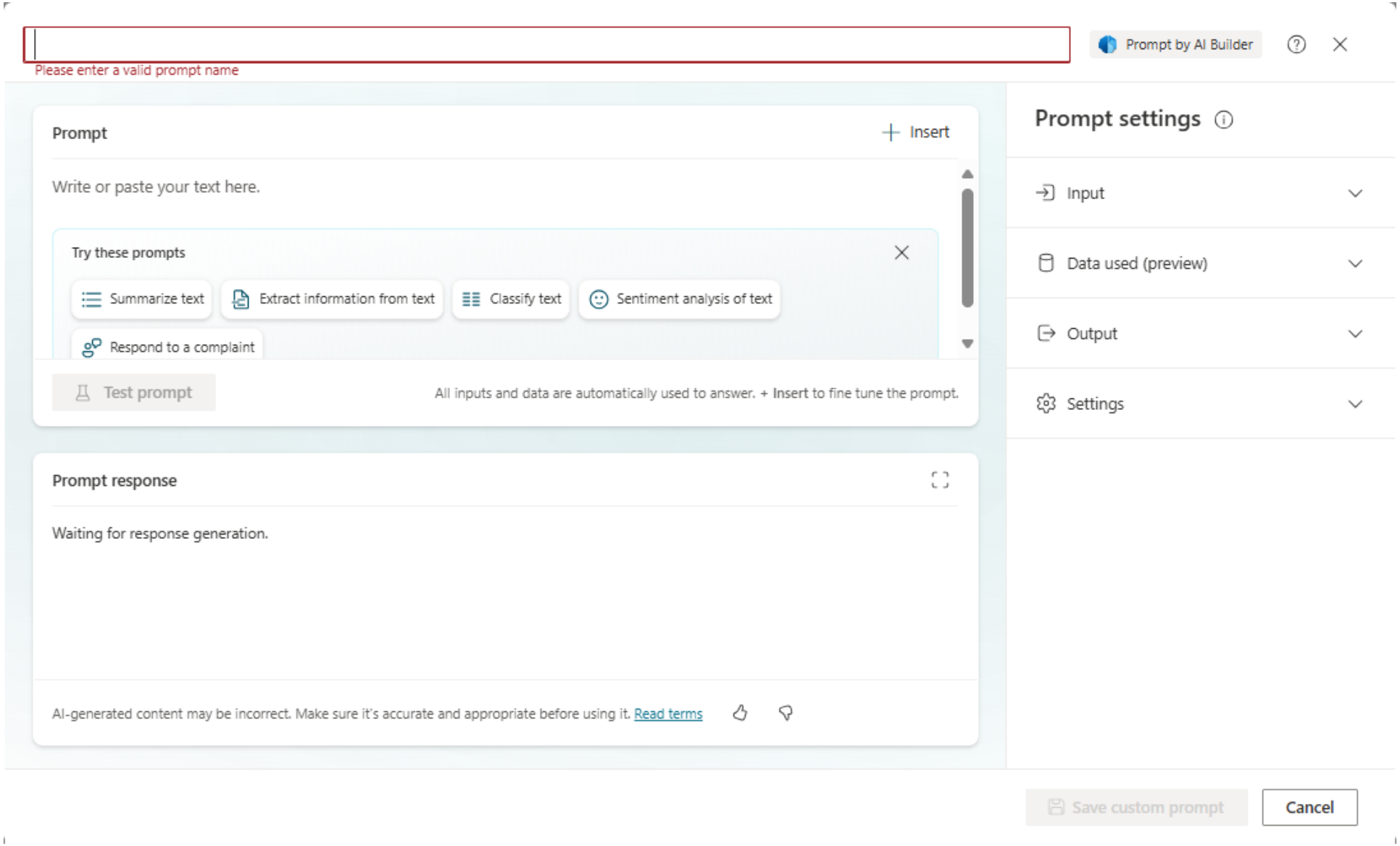
0/2000
19:38

Lab time!

Lab 04 [60] minutes

Lab 05: Invoke AI Builder prompts

AI Prompts


Please enter a valid prompt name
Prompt by AI Builder
Prompt
Insert
Write or paste your text here.
Try these prompts
Summarize text
Extract information from text
Classify text
Sentiment analysis of text
Respond to a complaint
Test prompt
All inputs and data are automatically used to answer. + Insert to fine tune the prompt.
Prompt response
Waiting for response generation.
AI-generated content may be incorrect. Make sure it's accurate and appropriate before using it. Read terms
Prompt settings
Input
Data used (preview)
Output
Settings
Save custom prompt
Cancel

Best practices for prompt instructions

Be specific: Custom instructions should be clear and specific, so the agent knows exactly what to do. Avoid vague or ambiguous language that could lead to confusion or incorrect responses.

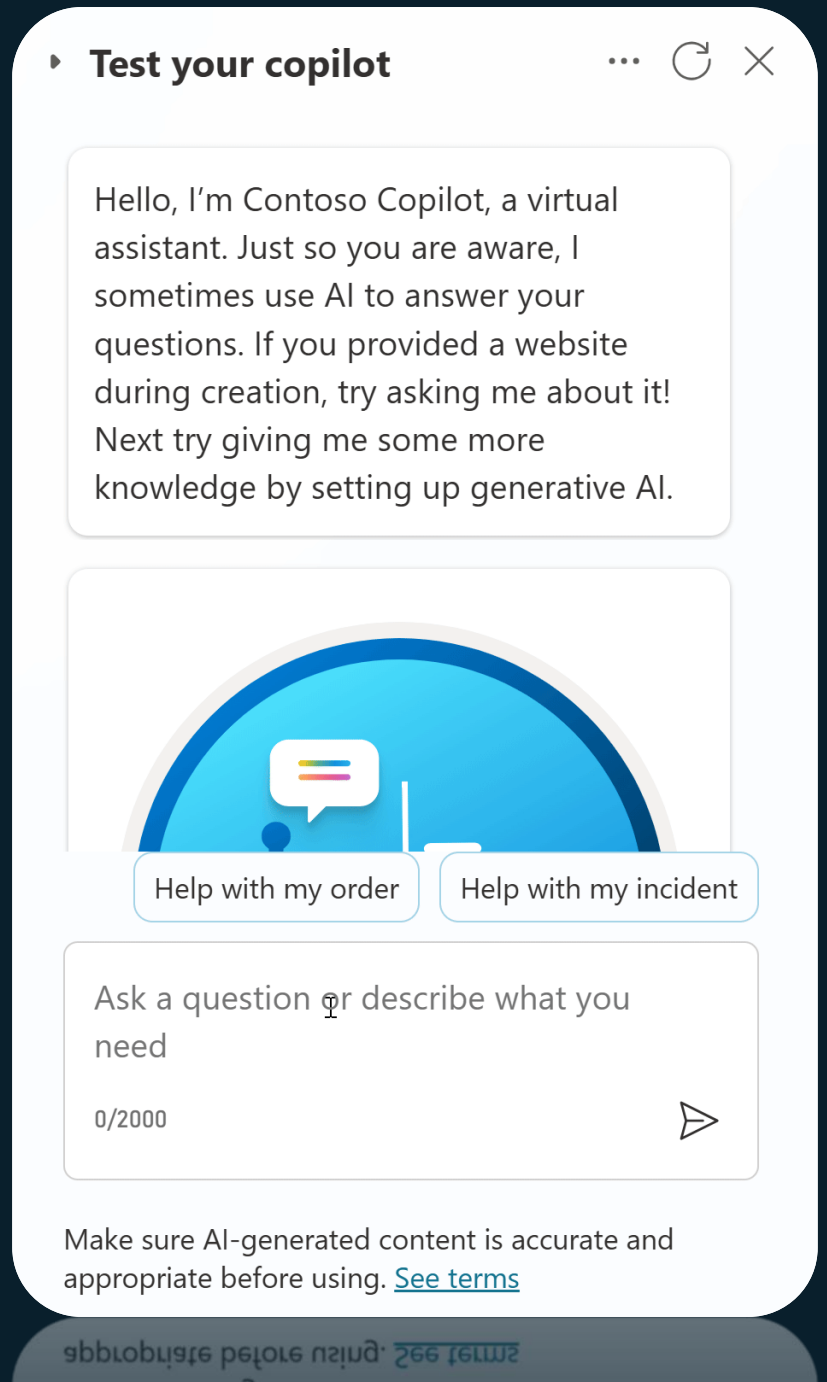
Use examples: Provide examples to illustrate your instructions and help the agent understand your expectations. Examples help the agent generate accurate and relevant responses.

Keep it simple: Avoid overloading your custom instructions with too many details or complex logic. Keep your instructions simple and straightforward so the agent can process them effectively.

Give the agent a way out: Give the agent an alternative path for when it's unable to complete the assigned task. For example, when the user asks a question, you might include "respond with 'not found' if the answer isn't present." This alternative path helps the agent avoid generating false responses.

Test and refine: It's important to test your custom instructions thoroughly to ensure they're working as intended. Make adjustments as needed to improve the accuracy and effectiveness of your copilot's responses.

Demo Lab 5


Test your copilot
Hello, I'm Contoso Copilot, a virtual assistant. Just so you are aware, I sometimes use AI to answer your questions. If you provided a website during creation, try asking me about it! Next try giving me some more knowledge by setting up generative AI.
Help with my order
Help with my incident
Ask a question or describe what you need
0/2000
Make sure AI-generated content is accurate and appropriate before using. See terms

Lab time!

Lab 05 [25] minutes

Lab 06: Make HTTP requests to connect to an API

HTTP request

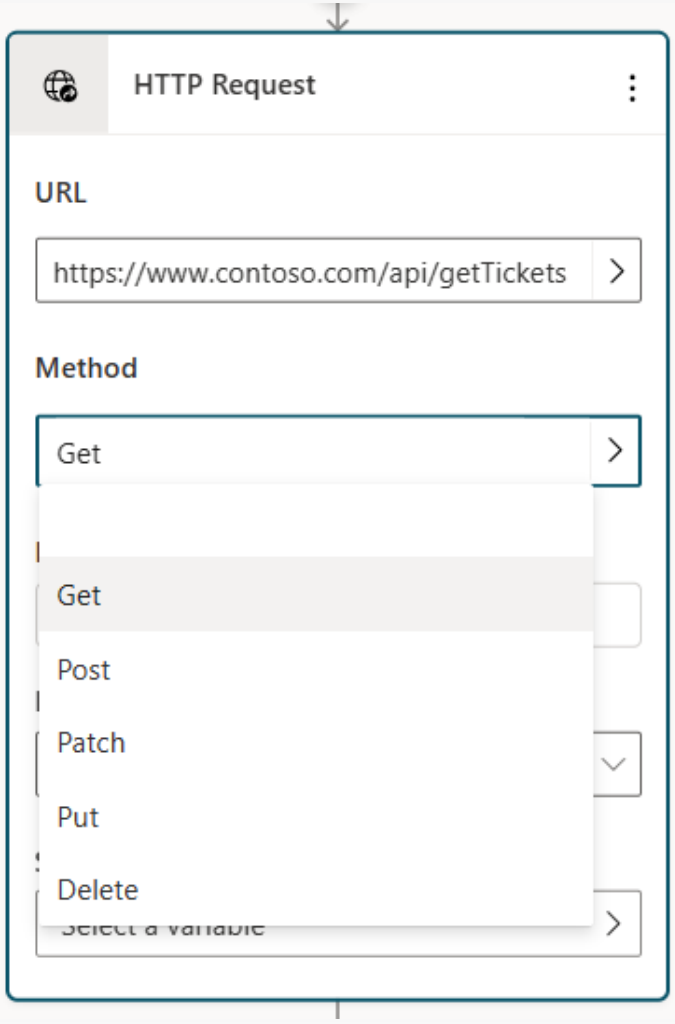
In Copilot Studio, you can extend an agent capabilities by **calling external REST APIs** using the **HTTP** request node.

This call can be helpful when you need to **retrieve data from an external system**.

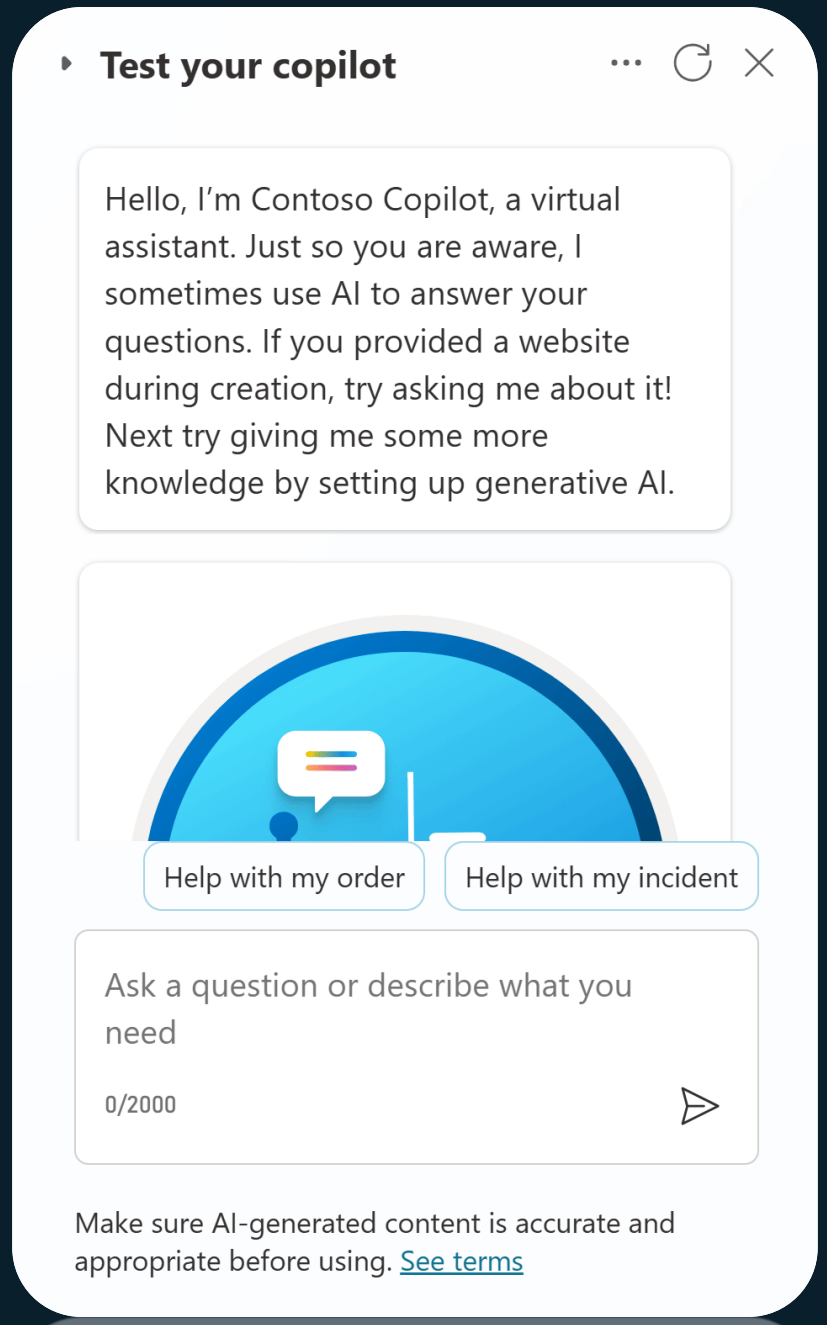
You can use different **methods** and inject your own **header** and **body**.

The response can be parsed in **JSON** format following a **sample schema.**

The **HTTP** request node has multiple options for handling situations where the HTTP request might **fail** or **return an error**.



Demo Lab 6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Help with my incident
Ask a question or describe what you need
0/2000
Make sure AI-generated content is accurate and appropriate before using. See terms

Lab time!

Lab 06 [20] minutes

Lab 07: Use generative orchestration to interact with your connectors

Generative orchestration

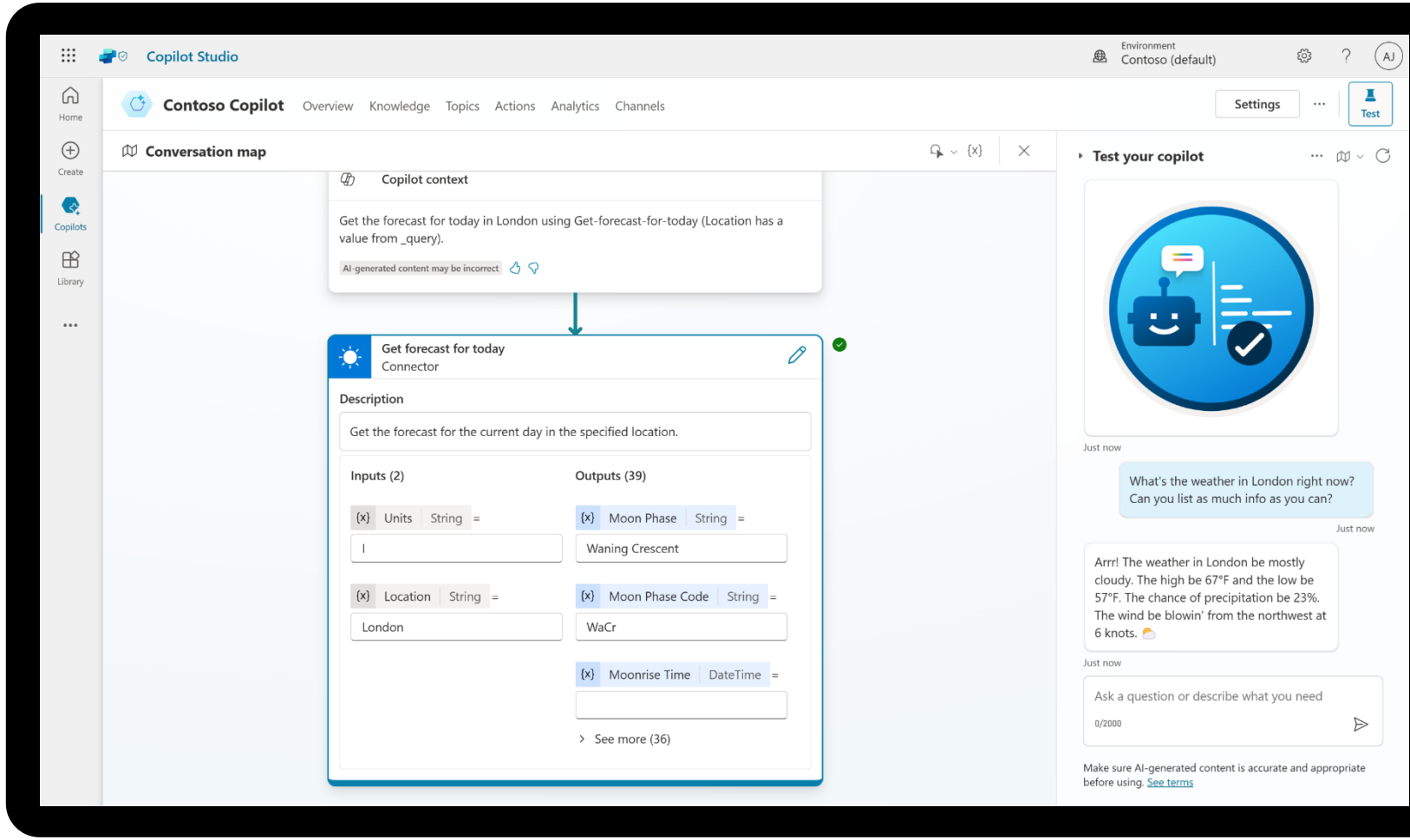
Test and trace feature to see it in action

Dynamically chains actions and topics together to produce actionable responses

Handle multi-intent queries that were not anticipated or built by the user

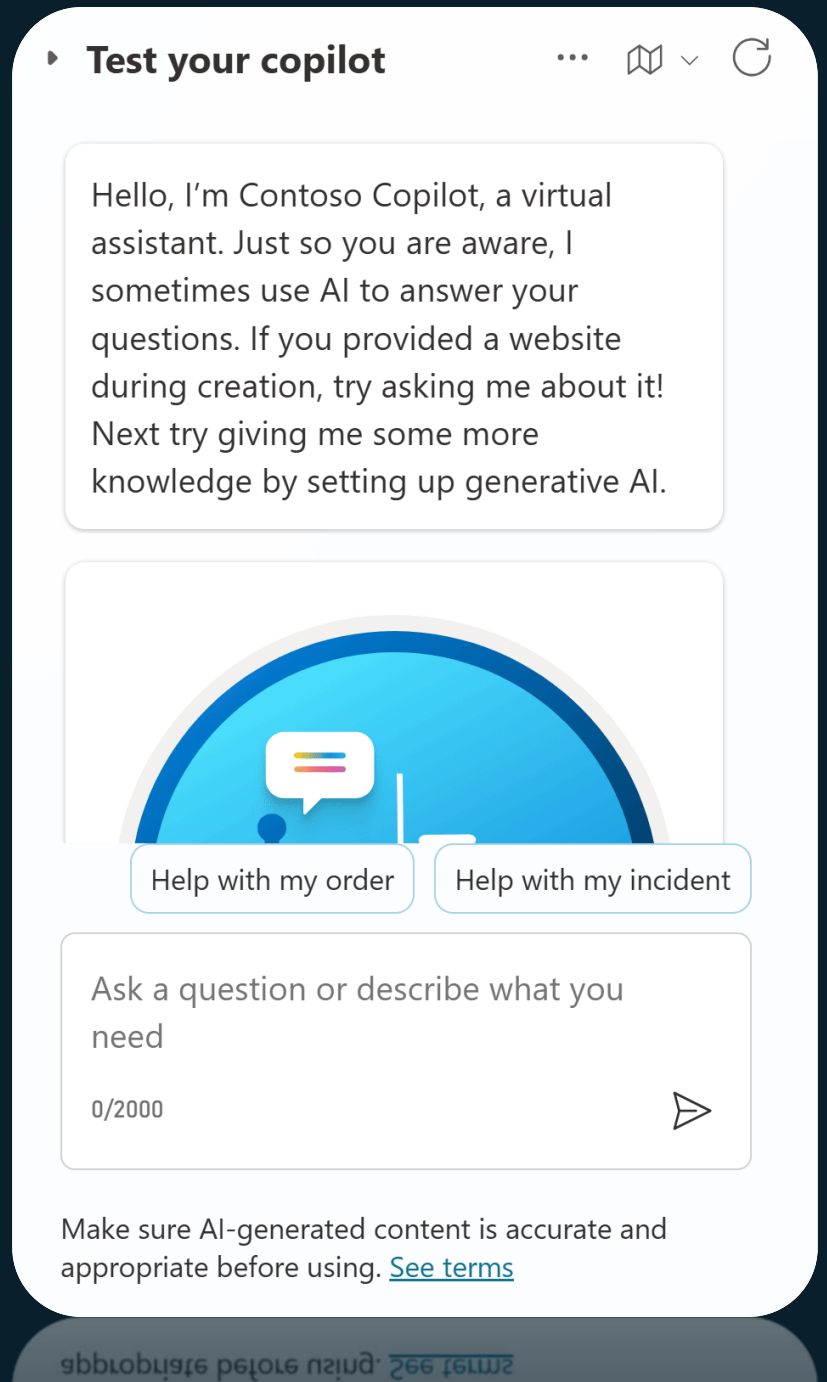
Automatically slot-fill further details to get the information needed for the task

Powered by the Azure OpenAI Service with LangChain concepts



Public Preview

Demo Lab 7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Help with my incident
Ask a question or describe what you need
0/2000
Make sure AI-generated content is accurate and appropriate before using. See terms

Lab time!

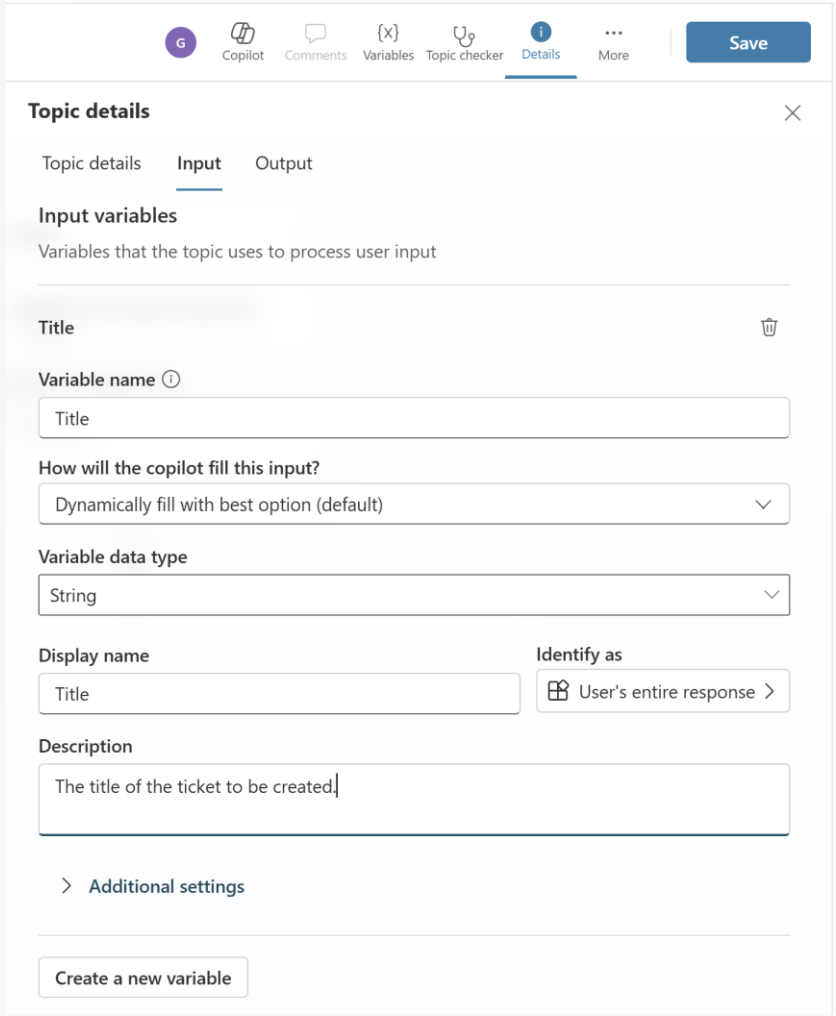
Lab 07 [20] minutes

Lab 08: Using topic inputs

Topic inputs and outputs

Topics can have **input** and **output** parameters. When a topic redirects to another topic, you can use these parameters to **pass information between topics**.

If your agent uses **generative AI** to decide how to respond to users, it can **automatically fill inputs**, before running the topic, by using conversation **context** or generate **questions** to collect values from the user's response.



Lab time!

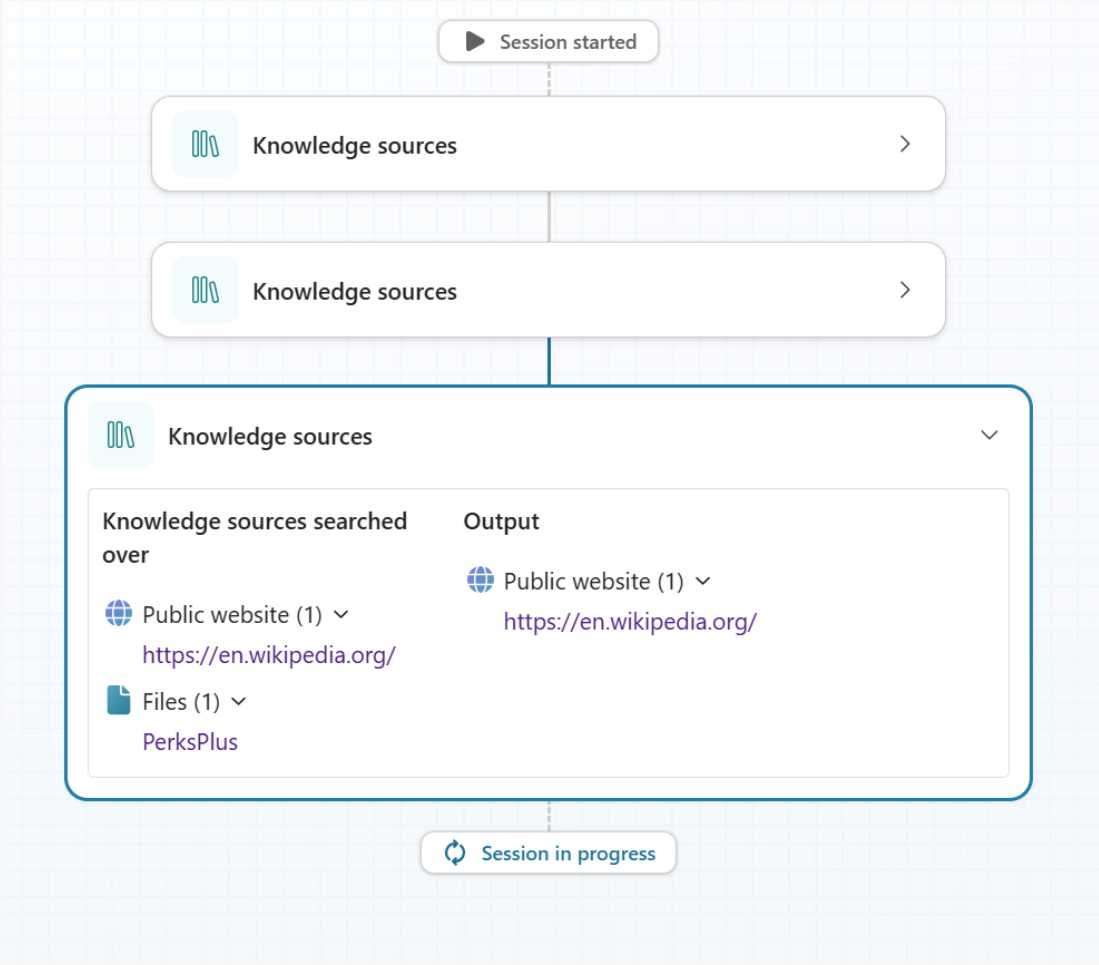
Lab 08 [15] minutes

Lab 09: Advanced generative orchestration

Advanced generative orchestration

In generative mode, an agent can select **multiple actions or topics** at once, to handle multi-intent **queries**. Once actions and topics are selected, the agent **generates a plan** that determines their execution order.

Once the plan is executed, you can **manipulate the unified response** using the "**plan complete**" trigger.



Lab time!

Lab 09 [25] minutes

Microsoft

Q&A

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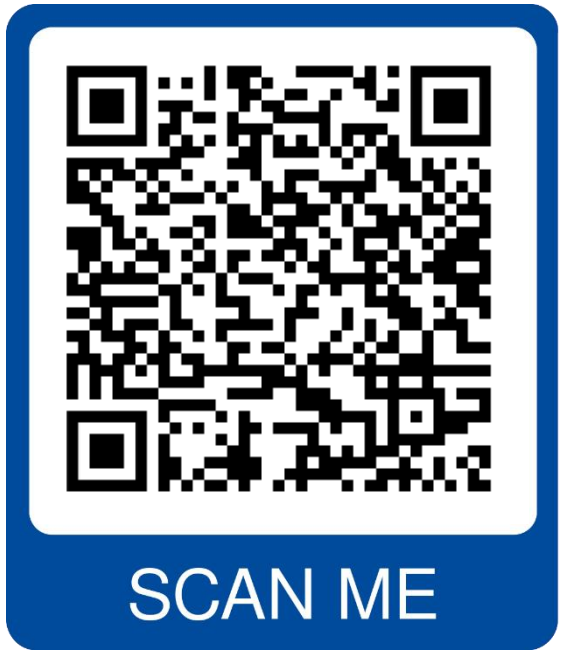
Resources

Resources



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