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TECH CONFERENCE 2024

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18.6.2024 - 19.06.2024 - VIENNA

Enhance Microsoft Copilot and Microsoft Graph with your own data



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Co-Pilot?

It's Copilot !



Jarvis is my co-pilot

“Unlocking New Possibilities
for Streamlined Information Access and Collaboration with AI.”



Why Use OpenAI Language Models for Knowledge Management?



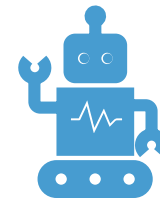
Document Summarization

Automatically generate concise summaries of lengthy documents.



Knowledge Base Creation

Build a comprehensive knowledge base by extracting information from various sources.



Q&A Systems – Custom Bots

Develop question-answering systems that can provide answers from a knowledge repository in response to user queries.



Content Generation

Create high-quality content using AI-generated text.

Agenda



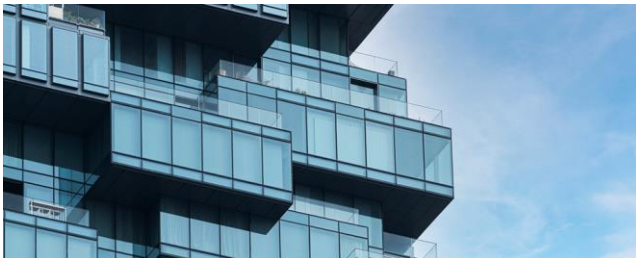
Graph Connectors

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Develop your custom Bot with Azure Search and Azure Open AI

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Message Extensions

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Summary

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Azure AI

Applications

 Microsoft 365

 Microsoft Dynamics 365

Partner Solutions

Application Platform

AI Builder



Power BI



Power Apps



Power Automate



Power Virtual Agents

Scenario-Based Services

Applied AI Services



Bot Service



Cognitive Search



Form Recognizer



Video Indexer



Metrics Advisor



Immersive Reader

Customizable AI Models

Cognitive Services



Vision



Speech



Language



Decision

Azure
OpenAI Service

ML Platform



Azure Machine Learning



Business
Users



Developers &
Data Scientists



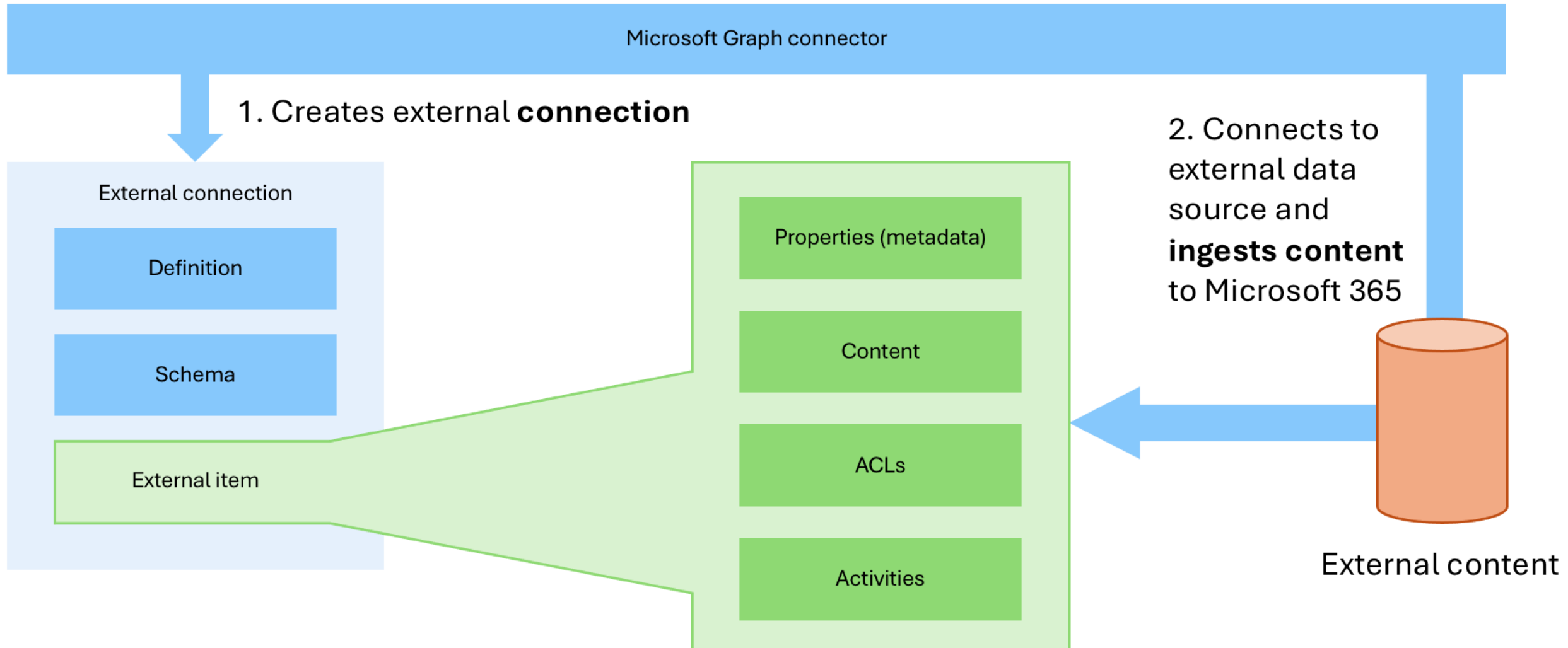
Graph Connectors

Your data (from a database or other data sources) network

```
1 id;title;date;speaker;room;audience;type:url;format;level;products;description
2 555625;AI & Copilot: Preparing, Piloting, Paths To Success/Scale, & Plugins;28 Apr 2024 09:00 AM;Richard Harbridg
3 568159;Beginner SharePoint Framework (SPFx) Bootcamp;28 Apr 2024 09:00 AM;Chris Kent, Hugo Bernier, David Warner
4 554804;Guard and Protect: Microsoft 365 Security Unleashed;28 Apr 2024 09:00 AM;Liam Cleary;D: SH II;IT Professio
5 568028;Power Apps Fundamentals: Extending SharePoint into Low-Code Apps and Forms (2024 edition);28 Apr 2024 09:0
6 568065;Best Practices for Intranet Information Architecture: the key to unlocking AI's full potential;29 Apr 2024
7 568048;Collaboration 201: Enhance Teams and SharePoint with Power Apps and Power Automate;29 Apr 2024 09:00 AM;Ma
8 582937;From Low Code to Pro Code: A Power Class on Building Solutions for Microsoft 365 with PnP;29 Apr 2024 09:0
9 568082;Governance for Microsoft 365, the Power Platform and Your Copilots;29 Apr 2024 09:00 AM;Martina Grom, Toni
10 573018;Grounding AI using SharePoint content;29 Apr 2024 09:00 AM;Microsoft 365 Team Place Holder;MS 1;;Microsoft
11 573011;Leveraging AI to power your organization's productivity;29 Apr 2024 09:00 AM;Microsoft 365 Team Place Hold
12 559448;Power Automate Cloud Flows Hands-on Workshop for Microsoft 365 Power Users;29 Apr 2024 09:00 AM;Vlad Catri
13 649574;The Age of Copilots;30 Apr 2024 08:00 AM;Jeff Teper;D: Pacific Hall;Business/End Users, Developers, IT Pro
14 650136;General Session: Reshaping productivity with Copilot for Microsoft 365;30 Apr 2024 09:30 AM;Bobby Kishore,
15 639513;Cultivating Trust and Leadership Excellence: Strategies for Respect and Empathy in the Workplace;30 Apr 20
16 579245;Boosting Employee Development with Viva Goals and Copilot;30 Apr 2024 11:30 AM;Tiffany Songvilay;D: SH III
17 562107;Building Engaging Employee Experiences for Viva Connections using SPFx;30 Apr 2024 11:30 AM;Derek Cash-Pet
```

Ingesting data with the Graph Connector

atwork



Access control list

Item Id
ACL
Properties
Content

```
{
  "@odata.type": "microsoft.graph.externalItem",
  "acl": [{
    "type": "User",
    "value": "c3a8d94d-f807-4785-b1c0-f0f4dbc9f54",
    "accessType": "deny",
    "identitySource": "azureActiveDirectory"
  }, {
    "type": "Group",
    "value": "contosoEscalations",
    "accessType": "grant",
    "identitySource": "External"
  }, {
    "type": "Everyone",
    "value": "07ea6043-dab2-4448-9d7f-70dba909a9c",
    "accessType": "grant",
    "identitySource": "azureActiveDirectory"
  }
],
}
```


Properties

Item Id
ACL
Properties
Content

```
"properties": {  
  "ticketID": "1158",  
  "title": "Filter design",  
  "createdBy": "Carole Poland",  
  "assignedTo": "Aaron Bjork",  
  "lastEditedDate": "2020-08-25T03:32:08.42641",  
  "lastEditedBy": "Aaron Bjork",  
  "workItemType": "Feature",  
  "priority": "1",  
  "resolved": "false",  
  "tags@odata.type": "Collection(String)",  
  "tags": ["eng", "design"],  
  "status": "Todo",  
  "url": "https://ticketstracker.com/apps/flightbooker"  
},
```

Content (Relevance, Text and HTML)



```
},  
  "content": {  
    "type": "text",  
    "value": "Build filtering capability by..  
  }  
};
```



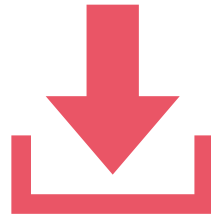
Message Extensions

Message Extensions demo

- Search products and interact with the user to order or restock products
- <https://github.com/OfficeDev/Copilot-for-M365-Plugins-Samples/tree/main/samples/msgext-northwind-inventory-ts>

ImageUrl	InventoryStatus	InventoryValue	ProductID	ProductName	QuantityPerUnit	ReorderLevel
https://picsum.photos/seed/1/20...	In stock	6300	1	Chai	10 boxes x 20 bags	25
https://picsum.photos/seed/10/2...	null	null	10	Ikura	12 - 200 ml jars	20
https://picsum.photos/seed/11/2...	null	null	11	Queso Cabrales	1 kg pkg.	30
https://picsum.photos/seed/12/2...	null	null	12	Queso Manchego La Pastora	10 - 500 g pkgs.	20
https://picsum.photos/seed/13/2...	null	null	13	Konbu	2 kg box	5
https://picsum.photos/seed/14/2...	null	null	14	Tofu	40 - 100 g pkgs.	20
https://picsum.photos/seed/15/2...	null	null	15	Genen Shouyu	24 - 250 ml bottles	5
https://picsum.photos/seed/16/2...	null	null	16	Pavlova	32 - 500 g boxes	10
https://picsum.photos/seed/17/2...	null	null	17	Alice Mutton	20 - 1 kg tins	20
https://picsum.photos/seed/18/2...	null	null	18	Carnarvon Tigers	16 kg pkg.	20

Message Extensions Demo



Deployment

Download Sample from GitHub
Use VSCode with Teams Toolkit extension
Lifecycle / Deploy & Publish (teamsapp.yml)



Usage

Add App
Search for extension “northwind”
In the app, search for “chai”
Send the Adaptive Card and “Restock”

What M365 Copilot extension to use when?

Graph Connectors

- Ingest data into Microsoft Graph
- Unstructured / flattened data
- Up to 5M items per connection
- Up to 30 connectors / tenant
- Read-only
- Data inside M365
- SharePoint, Bing work, etc.

Message Extensions

- Bot development
- Real-time data access
- Structured data
- Suitable for high volume data (over 5M)
- Suitable for high activity (over 20 req./sec.)
- Read and write
- Teams and Outlook



Develop your custom Bot with Azure Search and Azure Open AI

When to use a custom Open AI solution?



Custom Copilot

e.g., when many users need to access specific company data.
No Copilot licensing required.



Data grounding

Run Azure OpenAI Service on your data to gain insights and create chat experiences for users.
Use Skills to process data automatically.



Trust and transparency

Provide protection from undesirable inputs and outputs.












Data, privacy and security

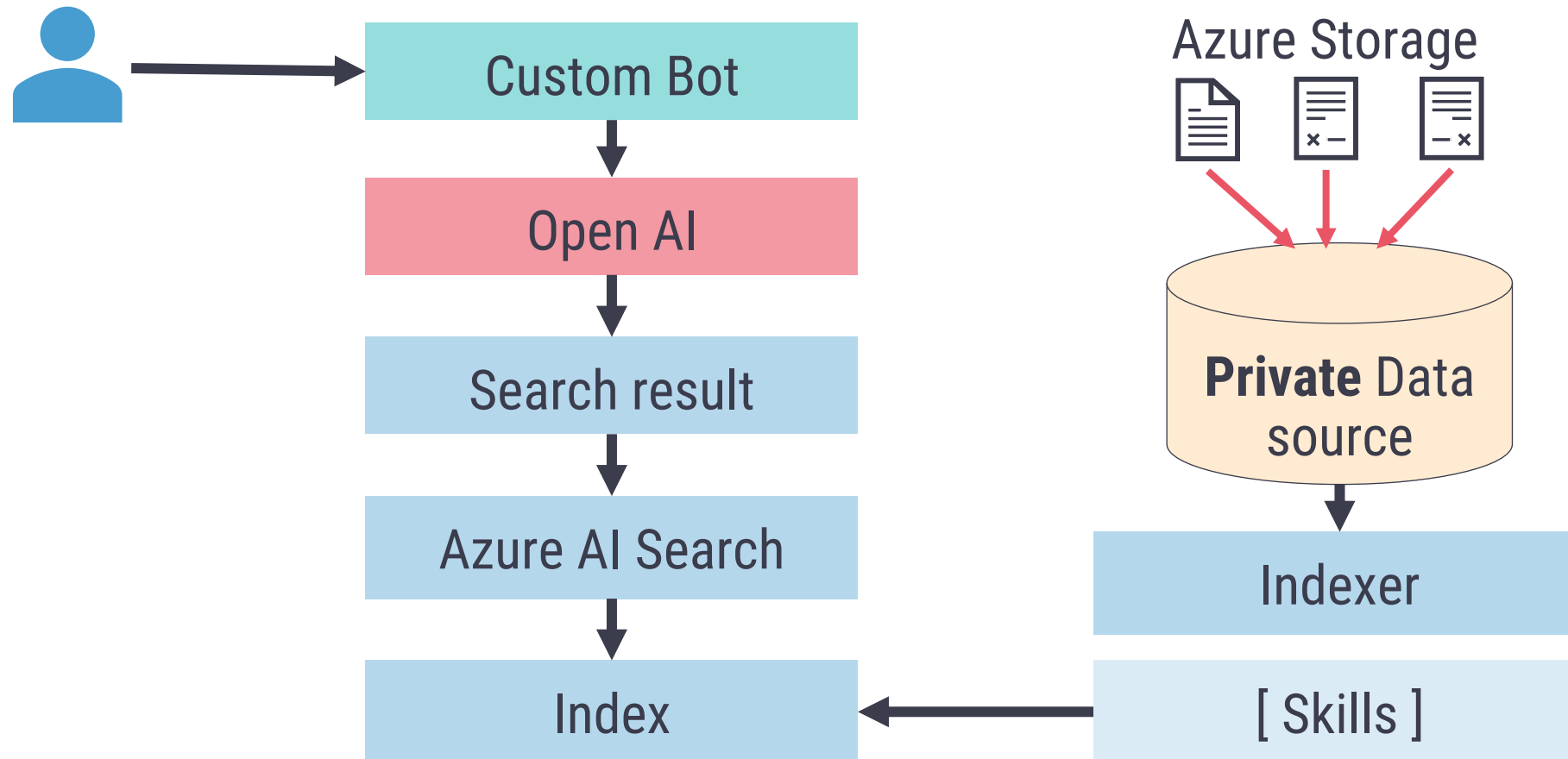
Extend on your terms.

Sample data source

Index “cism”, 9 PDF documents

<input type="checkbox"/> Name	Size	Date modified	Type
▼ Yesterday			
 azure-governance-policy.pdf	230.946 KB	22.09.2023 12:35	Adobe Acrobat Docu...
 Microsoft Azure Active Directory M365 Minimum Viable SCB Draft v0.1.pdf	725 KB	22.09.2023 12:30	Adobe Acrobat Docu...
 Microsoft 365 Defender M365 Minimum Viable SCB Draft v0.1.pdf	602 KB	22.09.2023 12:28	Adobe Acrobat Docu...
 Microsoft Power BI M365 Minimum Viable SCB v0.1.pdf	559 KB	22.09.2023 12:30	Adobe Acrobat Docu...
 Microsoft Teams M365 Minimum Viable SCB Draft v0.1.pdf	547 KB	22.09.2023 12:30	Adobe Acrobat Docu...
 Microsoft Exchange Online M365 Minimum Viable SCB Draft v0.1.pdf	530 KB	22.09.2023 12:28	Adobe Acrobat Docu...
 Microsoft Power Platform M365 Minimum Viable SCB Draft v0.1.pdf	478 KB	22.09.2023 12:30	Adobe Acrobat Docu...
 Microsoft OneDrive for Business M365 Minimum Viable SCB Draft v0.1.pdf	472 KB	22.09.2023 12:30	Adobe Acrobat Docu...
 Microsoft SharePoint Online M365 Minimum Viable SCB Draft v0.1.pdf	459 KB	22.09.2023 12:30	Adobe Acrobat Docu...

Custom Copilot with Azure AI Search & Open AI



Azure AI Search



What is Azure AI Search?
<https://learn.microsoft.com/en-us/azure/search/arch-what-is-azure-search>



Configure Azure AI Search within Azure AI Language
<https://learn.microsoft.com/en-us/azure/bot-service/bot-builder-concept-luis?view=azure-bot-service-4.0#azure-cognitive-search>



Configure custom question answering enabled resources
<https://learn.microsoft.com/en-us/azure/ai-services/language-service/question-answering/how-to/configure-resources>



Try it out
<https://oai.azure.com/portal/>

Start

<https://github.com/Microsoft/BotBuilder-Samples/blob/main/README.md#getting-the-samples>

	Sample Name	Description	.NET	JavaScript	Python	Java
2	Echo bot	Demonstrates how to receive and send messages.	.NET Core	JavaScript, TypeScript	Python	Java
3	Welcome user	Introduces activity types and provides a welcome message on conversation update activity.	.NET Core	JavaScript, TypeScript	Python	Java
5	Multi turn prompts	Demonstrates how to use waterfall dialog, prompts, and component dialog to create a simple interaction that asks the user for name, age, and prints back that information.	.NET Core	JavaScript, TypeScript	Python	Java
6	Using cards	Introduces all card types including thumbnail, audio, media etc. Builds on Welcoming user + multi-prompt bot by presenting a card with buttons in welcome message that route to appropriate dialog.	.NET Core	JavaScript, TypeScript	Python	Java
7	Adaptive cards	Demonstrates how the multi-turn dialog can use a card to get user input for name and age.	.NET Core	JavaScript	Python	Java
8	Suggested actions	Demonstrates how to enable your bot to present buttons that the user can tap to provide input.	.NET Core	JavaScript	Python	Java
13	Core bot	Core bot shows how to use cards, dialog, and Language Understanding (LUIS).	.NET Core, .NET Web	JavaScript, TypeScript	Python	Java
15	Handling attachments	Demonstrates how to listen for/handle user provided attachments.	.NET Core	JavaScript	Python	Java
40	TIMEX resolution	Demonstrates various ways to parse and manipulate the TIMEX expressions you get from LUIS and the DateTimeRecognizer used by the DateTimePrompt.	.NET Core	JavaScript	Python	Java
43	Complex dialogs	Demonstrates different ways for composing dialogs.	.NET Core	JavaScript	Python	Java
45	State management	Demonstrates how to use state management and storage objects to manage and persist state.	.NET Core	JavaScript	Python	Java



Summary

Methods to integrate your data into Copilot

atwork



Graph Connectors
Ingest data



Message Extensions (Plugins)
Develop an interactive Bot



Azure Open AI Bot
Develop your own data integration Bot on your terms



Copilot Studio
low code, simple, will grow...

Copilot options

	Graph Connectors	Message Extensions	Copilot Studio	Azure OpenAI
Type	Integrates in graph and add vertical in Search	Interactivity, adaptive cards, actions	Simple to use, fast solution	Integration on your terms
Development	N / Low code	Y	N / Low code	Y
Data Location	Graph	Data storage	Data storage	Data storage
Solution complexity	*	**	*	***

M365 Copilot resources

- <https://aka.ms/Copilot-Plugins>
- <https://aka.ms/Message-Extensions>
- <https://aka.ms/GraphConnectors>
- <https://aka.ms/ExtendCopilotM365>
- <https://aka.ms/community/samples>

Azure Open AI resources

- Azure OpenAI Service
<https://azure.microsoft.com/en-us/products/ai-services/openai-service>
- Azure AI Document Intelligence
<https://azure.microsoft.com/en-ca/products/form-recognizer>
- Azure AI | Document Intelligence Studio
<https://documentintelligence.ai.azure.com/studio/read>
- Basics of the Microsoft Bot Framework
<https://learn.microsoft.com/en-us/azure/bot-service/bot-builder-basics?view=azure-bot-service-4.0>
- Create a bot with the Bot Framework SDK
<https://learn.microsoft.com/en-us/azure/bot-service/bot-service-quickstart-create-bot?view=azure-bot-service-4.0&tabs=csharp%2Cvs>
- Bot Development Requirements
<https://learn.microsoft.com/en-us/azure/bot-service/bot-service-quickstart-create-bot?view=azure-bot-service-4.0&tabs=csharp%2Cvs#prerequisites>
- Bot Framework Samples
<https://github.com/Microsoft/BotBuilder-Samples/blob/main/README.md#getting-the-samples>
- What is Azure AI Search?
<https://learn.microsoft.com/en-us/azure/search/search-what-is-azure-search>
- ~~Configure Azure AI Search within Azure AI Language~~
<https://learn.microsoft.com/en-us/azure/bot-service/bot-builder-concept-luis?view=azure-bot-service-4.0#azure-cognitive-search>
- Configure custom question answering enabled resources
<https://learn.microsoft.com/en-us/azure/ai-services/language-service/question-answering/how-to/configure-resources>

Thank you!

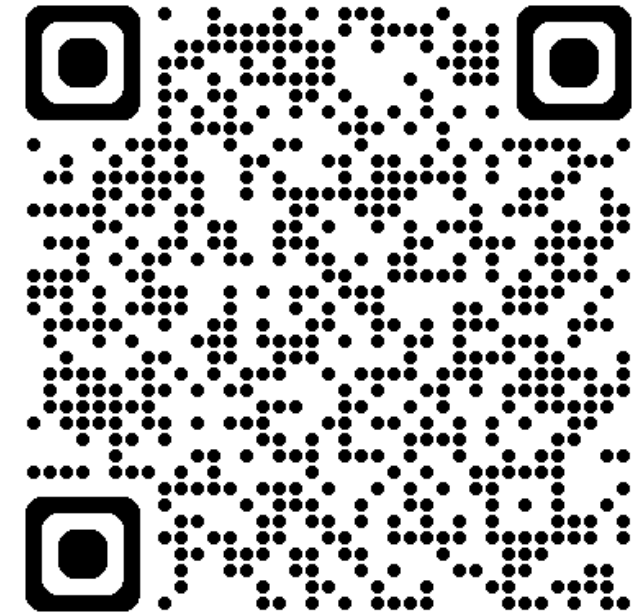
Let's connect!



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Toni Pohl
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github.com/tonipohl/CustomCopilot

MICROSOFT TECH CONFERENCE AUSTRIA 2023

HERZLICHEN DANK!

THANK YOU!

