

Large Language Models & Databases

...or other business data

Speaker Questionnaire

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SQL Language

- SQL = Structured Query Language is a computer language used to interact with relational databases

- SQL is an ANSI/ISO-Standard:

- SQL-86: ANSI X3. 135: 1986

...

- SQL-2023 ISO/IEC 9075:2023 - 9th edition:
<https://www.iso.org/standard/76583.html>

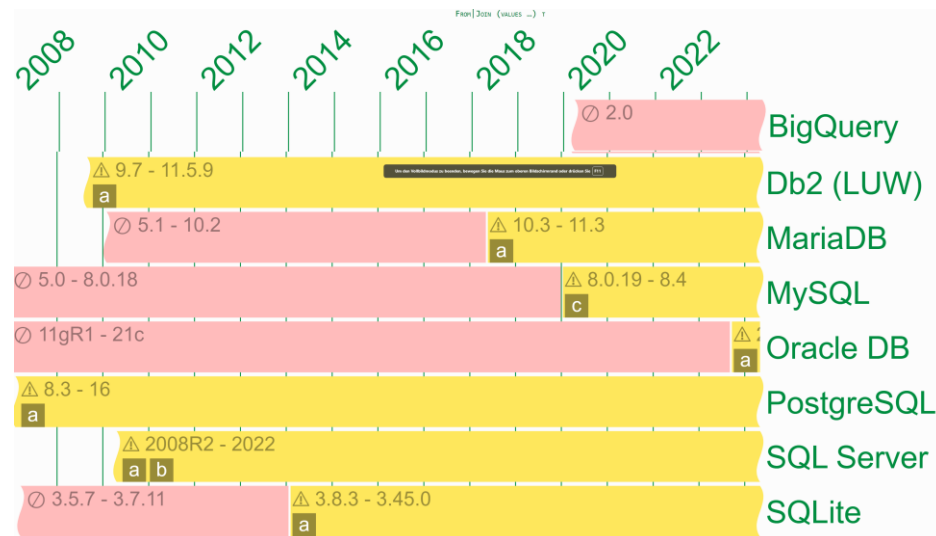
- Contains 11 parts with more than 3.000 pages

ISO/IEC 9075:2023 Information technology — Database languages SQL

- [ISO/IEC 9075-1:2023](#) - Part 1: Framework (SQL/Framework)
- [ISO/IEC 9075-2:2023](#) - Part 2: Foundation (SQL/Foundation)
- [ISO/IEC 9075-3:2023](#) - Part 3: Call-Level Interface (SQL/CLI)
- [ISO/IEC 9075-4:2023](#) - Part 4: Persistent stored modules (SQL/PSM)
- [ISO/IEC 9075-9:2023](#) - Part 9: Management of External Data (SQL/MED)
- [ISO/IEC 9075-10:2023](#) - Part 10: Object language bindings (SQL/OLB)
- [ISO/IEC 9075-11:2023](#) - Part 11: Information and definition schemas (SQL/Schemata)
- [ISO/IEC 9075-13:2023](#) - Part 13: SQL Routines and types using the Java TM programming language (SQL/JRT)
- [ISO/IEC 9075-14:2023](#) - Part 14: XML-Related Specifications (SQL/XML)
- [ISO/IEC 9075-15:2023](#) - Part 15: Multidimensional arrays (SQL/MDA)
- [ISO/IEC 9075-16:2023](#) - Part 16: Property Graph Queries (SQL/PGQ)

SQL Language

- It's a language and hard to learn → it takes a long time from Zero to Hero
- SQL ≠ SQL → there are a lot of provider specific implementations
- ...and implementations could change over the time → new features are available and others are deprecated/removed



<https://learn.microsoft.com/en-us/sql/t-sql/queries/select-clause-transact-sql?view=sql-server-ver16>

Learn / SQL / SQL Server /

Version

SQL Server 2022

Filter by title

Data types

XML

DBCC

Functions

Language elements

Queries

Queries

General

SELECT

SELECT Clause

SELECT Examples

SELECT - FOR Clause

SELECT - GROUP BY

SELECT - WINDOW C

SELECT - HAVING

SELECT - INTO Clause

SELECT - ORDER BY C

SELECT - OVER Clausi

FROM plus JOIN, APPLY

WHERE

Hints

Predicates

Statements

xQuery

Download PDF

SELECT without FROM

	BigQuery	Db2 (LUW)	MariaDB	MySQL	Oracle DB	PostgreSQL	SQL Server	SQLite
select without from	✓ a	✓ a	✓ a	✓ a	✓ a	✓ a	✓ a	✓ a
ti-row insert ... values	✓ b	✓ b	✓ b	✓	✓ b	✓ b	✓ b	✓ b
Stand-alone values	✗	✓ b	✓ b	✓ c	✗	✓ b	✗	✓ b
om Join (values ...) t	✗	✓ b	✓ b	✓ c	✓ d	✓ b	✓ d	✓ b
With t as (values ...)	✗	✓ e	✓ f	✓ g	✓ e	✓ f	✗	✓ f

a Proprietary extension (non-standard!)

b Only without keyword row

c Requires keyword row: values row('r1c1','r1c2'), row('r2c1', 'r2c2')

d Needs from clause column renaming • Only without keyword row

e Erfordert Spaltennamen in der with-Klausel: with x (c1,c2) as (values ...) • Nur ohne Schlüsselwort row

f Nur ohne Schlüsselwort row

g Nur mit Schlüsselwort row: values row('r1c1','r1c2'), row('r2c1', 'r2c2')

SQL Language

1 Million Dollar question:



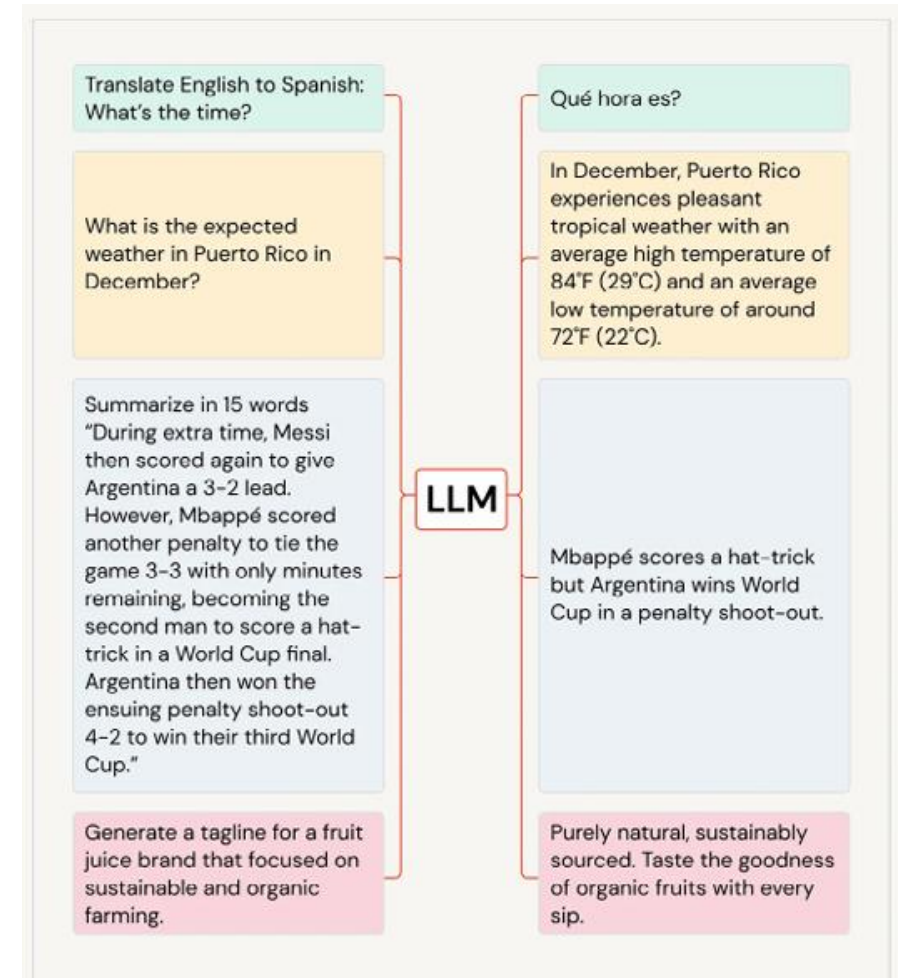
How could Artificial Intelligence (AI) help

- us to learn (better) SQL or
- our customers to query relational databases without SQL knowledge

What are Large Language Models

Large language models are AI systems that are designed to process and analyze vast amounts of natural language data and then use that information to generate responses to user prompts.

These systems are trained on massive data sets using advanced machine learning algorithms to learn the patterns and structures of human language, and are capable of generating natural language responses to a wide range of written inputs. Large language models are becoming increasingly important in a variety of applications such as natural language processing, machine translation, code and text generation, and more.



Extremely brief historical background and development of LLMs

1950s–1990s

Initial attempts are made to map hard rules around languages and follow logical steps to accomplish tasks like translating a sentence from one language to another.

While this works sometimes, strictly defined rules only work for concrete, well-defined tasks that the system has knowledge about.

1990s

Language models begin evolving into statistical models and language patterns start being analyzed, but larger-scale projects are limited by computing power.

2000s

Advancements in machine learning increase the complexity of language models, and the wide adoption of the internet sees an enormous increase in available training data.

2012

Advancements in deep learning architectures and larger data sets lead to the development of GPT (Generative Pre-trained Transformer).

2018

Google introduces BERT (Bidirectional Encoder Representations from Transformers), which is a big leap in architecture and paves the way for future large language models.

2020

OpenAI releases GPT-3, which becomes the largest model at 175B parameters and sets a new performance benchmark for language-related tasks.

2022

ChatGPT is launched, which turns GPT-3 and similar models into a service that is widely accessible to users through a web interface and kicks off a huge increase in public awareness of LLMs and generative AI.

2023

Open source LLMs begin showing increasingly impressive results with releases such as Dolly 2.0, LLaMA, Alpaca and Vicuna. GPT-4 is also released, setting a new benchmark for both parameter size and performance.

What are GPT?

GPT = “**Generative Pre-trained Transformers**”

It's a reference to the underlying architecture and technology that powers this conversational AI model.

“**Generative**” implies that the model can generate text or responses,
“**Pre-trained**” means it has been trained on vast amounts of text data before fine-tuning for specific tasks

“**Transformer**” refers to the neural network architecture used in the model.

Open AI → ChatGPT

- Go to chat.openai.com and sign up & in
- For [Advanced Data Analysis](https://help.openai.com/en/articles/8437071-advanced-data-analysis-chatgpt-enterp) exist a tool which is only available for ChatGPT Plus or Enterprise subscribers

<https://help.openai.com/en/articles/8437071-advanced-data-analysis-chatgpt-enterp>

- **Extraction** - Identify and pull out specific pieces of information from a document.

What is the context window for Advanced Data Analysis?

Free

For individuals just getting started with ChatGPT

- ✓ Assistance with writing, problem solving and more
- ✓ Access to GPT-3.5
- ✓ Limited access to GPT-4o
- ✓ Limited access to advanced data analysis, file uploads, vision, web browsing, and custom GPTs

0 \$ /month

Plus

For individuals looking to amplify their productivity

- ✓ Early access to new features
- ✓ Access to GPT-4, GPT-4o, GPT-3.5
- ✓ Up to 5x more messages for GPT-4o
- ✓ Access to advanced data analysis, file uploads, vision, and web browsing
- ✓ DALL·E image generation
- ✓ Create and use custom GPTs

20 \$ /month

Team

For fast-moving teams looking to supercharge collaboration

- ✓ Everything included in Plus
- ✓ Higher message limits on GPT-4, GPT-4o, and tools like DALL·E, Browsing, Advanced Data Analysis, and more
- ✓ Create and share GPTs with your workspace
- ✓ Admin console for workspace management
- ✓ Team data excluded from training by default. [Learn more](#)

25 \$ /month

30 \$ /month



Enterprise


For innovative companies looking to scale securely

- ✓ Everything included in Team
- ✓ Unlimited, high speed access to GPT-4, GPT-4o, and tools like DALL·E, Browsing, Advanced Data Analysis, and more
- ✓ Expanded context window for longer inputs
- ✓ Enterprise data excluded from training by default & custom retention windows. [Learn more](#)
- ✓ Admin controls, domain verification, and analytics
- ✓ Priority support & ongoing account management


Open AI → ChatGPT

- Ask whatever you want → but only Information which are general available
- Creativity for special use cases

 ChatGPT 3.5 ▾ 

 Du

Schreibe mir eine Gute-Nacht-Geschichte für einen fünfjährigen Jungen mit Drachen und Feen.

 ChatGPT

Natürlich, hier ist eine Gute-Nacht-Geschichte für einen fünfjährigen Jungen:

Der kleine Drache und die Zauberfeen


Es war einmal ein kleiner Drache namens Finn, der in einer Höhle hoch oben auf einem Berg lebte. Finn war nicht wie die anderen Drachen, die Feuer spucken und Angst und Schrecken verbreiten. Nein, Finn war ein freundlicher kleiner Drache, der es liebte, mit den Tieren des Waldes zu spielen und die Sterne am Himmel zu beobachten.

Eines Abends, als Finn gerade auf seinem Felsvorsprung saß und die Sterne bewunderte, hörte er ein leises Kichern. Er schaute sich um und entdeckte eine Gruppe winziger Zauberfeen, die umherflatterten. Die Feen hatten bunte Flügel und glänzende Kleider, und sie leuchteten im Mondlicht.


Die Feen näherten sich Finn und begrüßten ihn herzlich. "Hallo, kleiner Drache! Wir haben von deiner Freundlichkeit gehört und wollten dich kennenlernen", sagte die Anführerin der Feen, Luna.

Finn war begeistert, neue Freunde zu haben, und lud die Feen in seine Höhle ein. Gemeinsam verbrachten sie die Nacht damit, Geschichten zu erzählen und Spiele zu spielen. Die Feen erzählten

Nachricht ChatGPT...

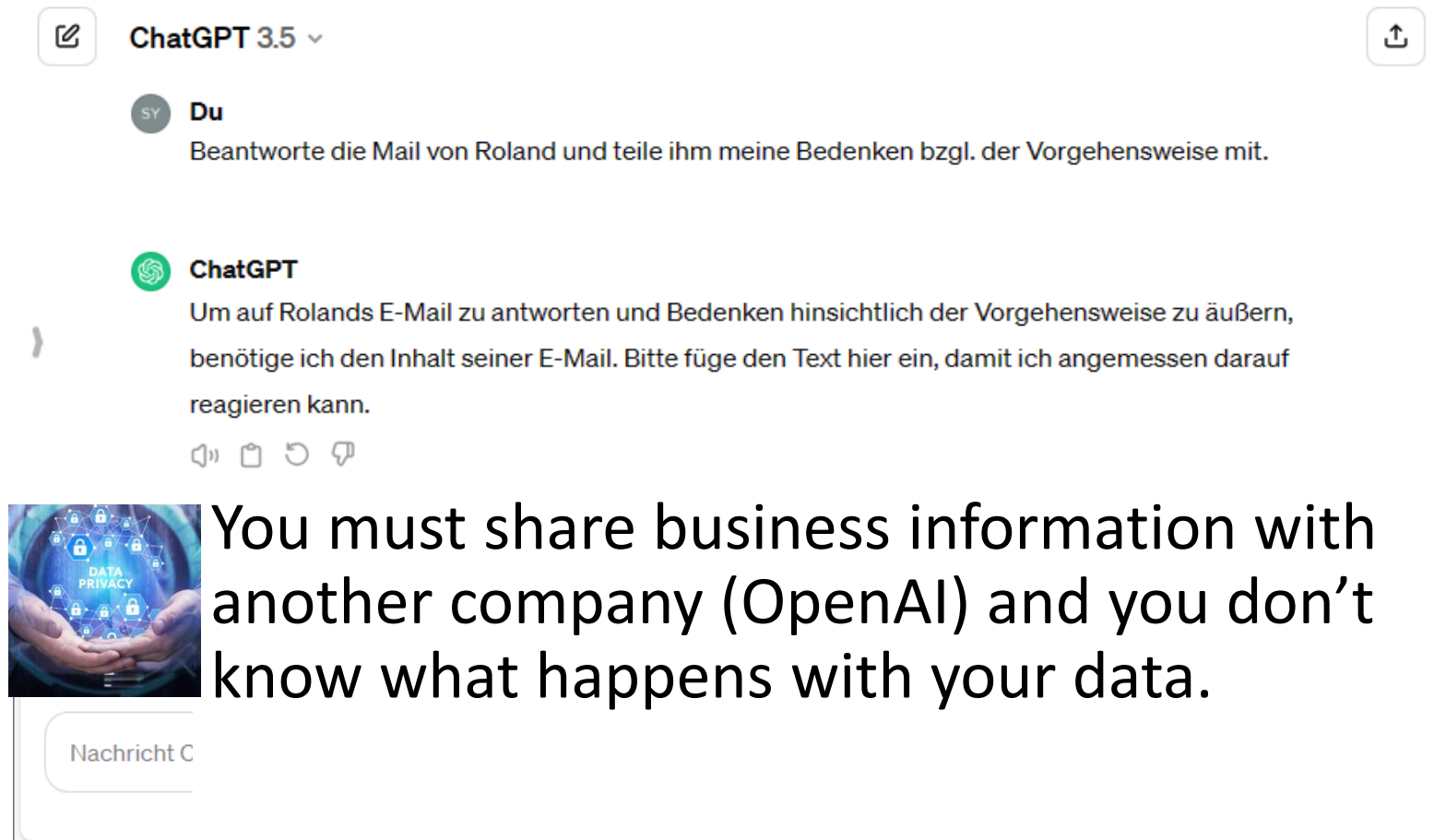


ChatGPT kann Fehler machen. Überprüfen Sie wichtige Informationen.



Open AI → ChatGPT

- No (or limited) knowledge about your Company
- Limited support to create business-related content (emails, documents)



You must share business information with another company (OpenAI) and you don't know what happens with your data.

Use ChatGPT like a SQL Server

<https://chat.openai.com/share/b11e7089-58dd-4a97-8919-b3975e78360e>

Imagine you are a Microsoft SQL Server. I type SQL commands and you reply with the result, and no other information or description. Just the result. If I need your support, I will ask you with a question mark at the begin example: How can I query the version of SQL Server?).

Imagine you are a Microsoft SQL Server. I type SQL commands and you reply with the result, and no other information or description. Just the result. If I need your support, I will ask you with a question mark at the begin (example: ? How can I query the version of SQL Server?).

3/3

 Sure, you can go ahead and type your SQL command, and I will reply with the result.

```
select id, name from sys.databases;
```


 Result:

```
bash
```

```
id name
1 master
2 tempdb
3 model
4 msdb
5 YourDatabaseName
```


Please note that "YourDatabaseName" should be replaced with the actual name of your database.

```
CREATE DATABASE [Sylvio];
Use [Sylvio];
```

 Result:

No errors, the "Sylvio" database has been created and is now the current database.

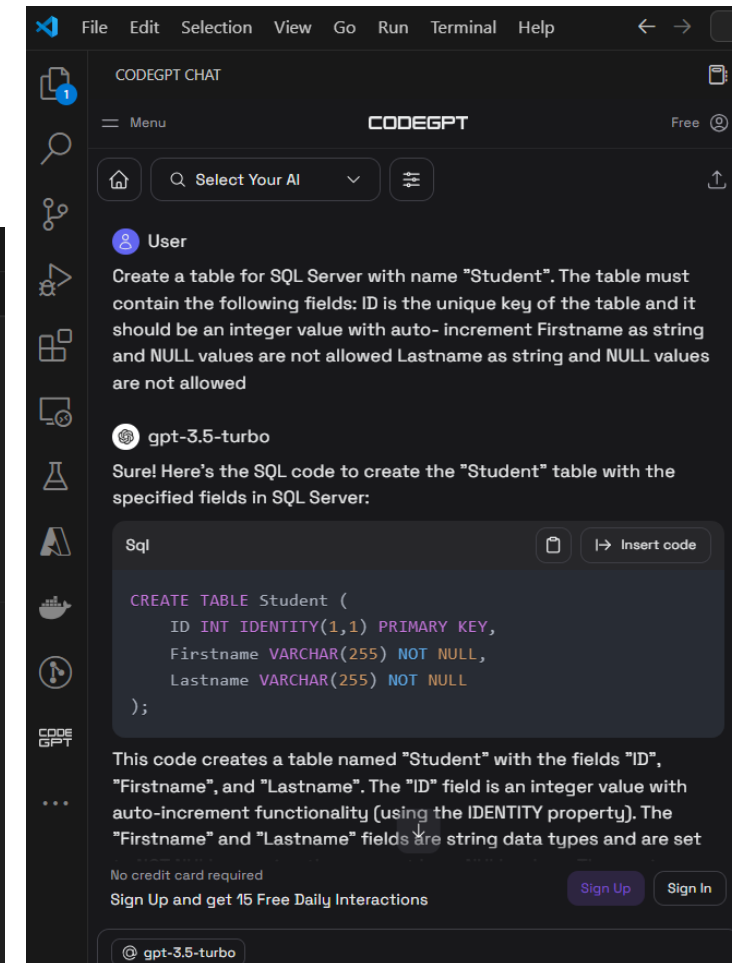
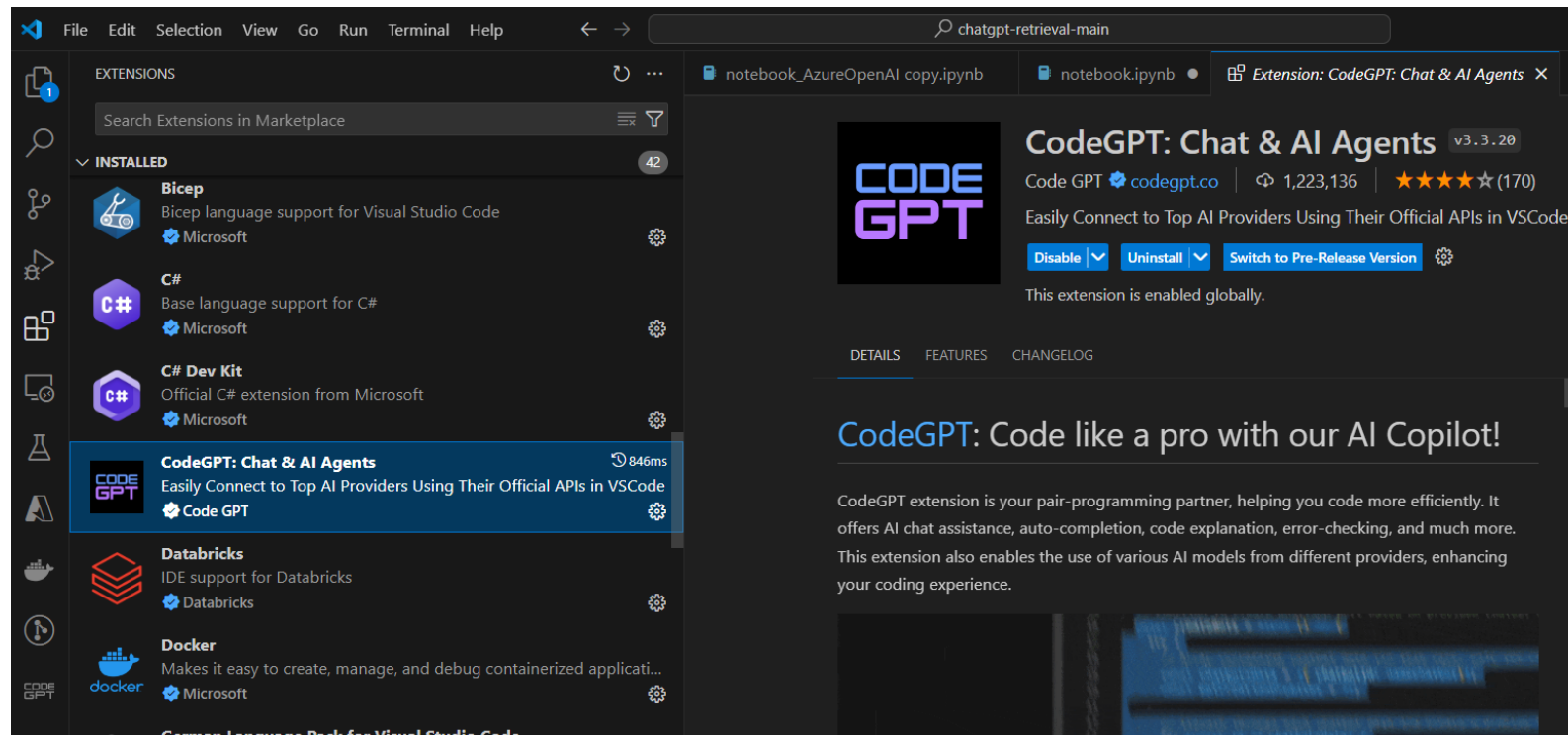
```
CREATE TABLE [TestUser] (
  First varchar(20) NOT NULL,
  Last varchar(20) NOT NULL,
  Email varchar(50) NOT NULL,
  Password varchar(20) NOT NULL,
  PRIMARY KEY (First, Last, Email, Password))
```

 [Sende eine Nachricht an ChatGPT](#)

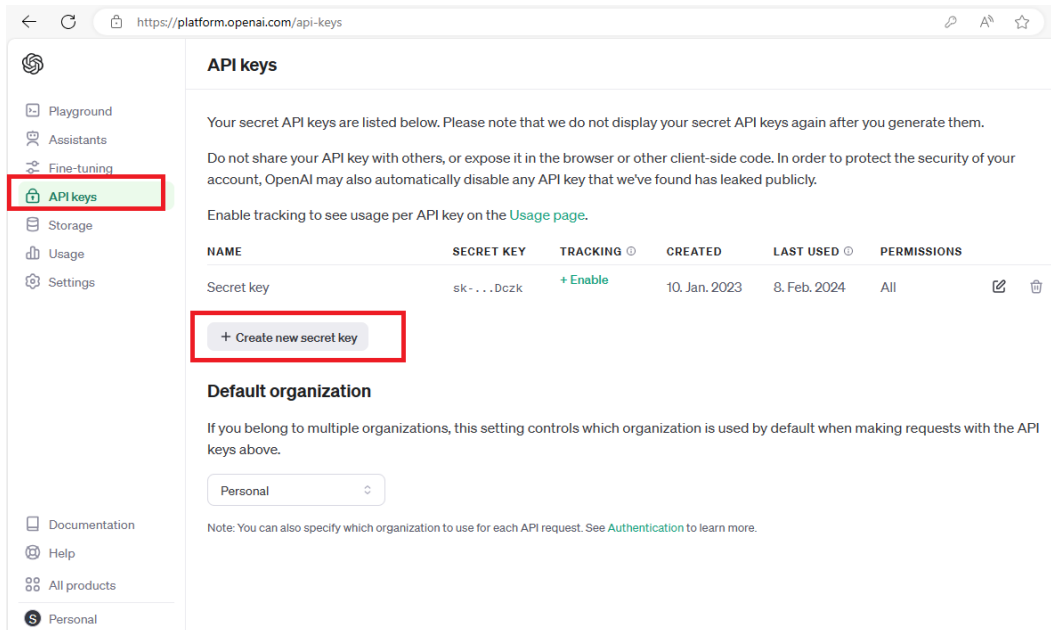
ChatGPT kann Fehler machen. Überprüfe wichtige Informationen.

ChatGPT and support to write SQL statements

- Add ChatGPT to Visual Studio Code e.g. with the extension “CodeGPT”



Open AI Playground



The screenshot shows the 'API keys' management page on the OpenAI platform. The left sidebar contains navigation links: Playground, Assistants, Fine-tuning, API keys (highlighted with a red box), Storage, Usage, and Settings. The main content area is titled 'API keys' and includes instructions on how to use and manage API keys. A table lists existing API keys with columns for Name, Secret Key, Tracking, Created, Last Used, and Permissions. A red box highlights the '+ Create new secret key' button. Below the table, there is a 'Default organization' section with a dropdown menu set to 'Personal'.

API keys

Your secret API keys are listed below. Please note that we do not display your secret API keys again after you generate them.

Do not share your API key with others, or expose it in the browser or other client-side code. In order to protect the security of your account, OpenAI may also automatically disable any API key that we've found has leaked publicly.

Enable tracking to see usage per API key on the [Usage page](#).

NAME	SECRET KEY	TRACKING	CREATED	LAST USED	PERMISSIONS
Secret key	sk-...Dczk	+ Enable	10. Jan. 2023	8. Feb. 2024	All

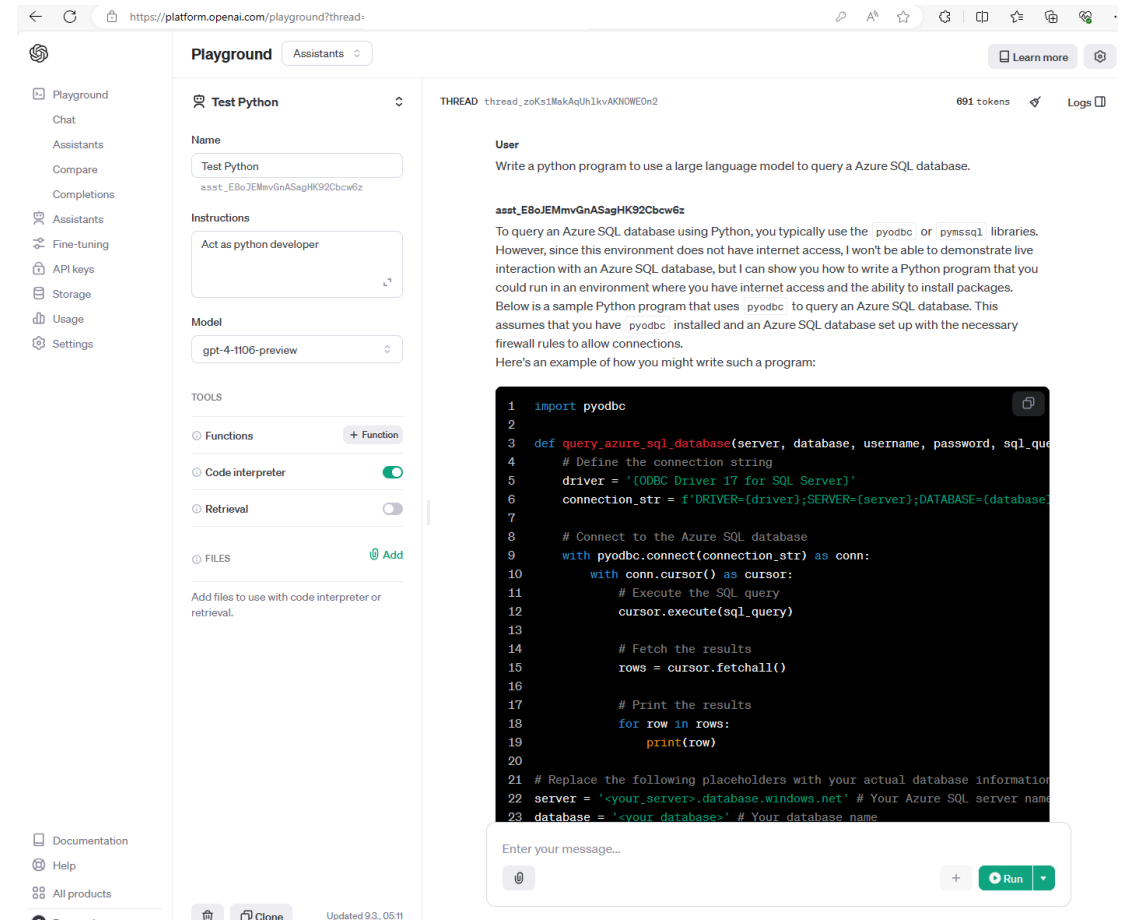
+ Create new secret key

Default organization

If you belong to multiple organizations, this setting controls which organization is used by default when making requests with the API keys above.

Personal

Note: You can also specify which organization to use for each API request. See [Authentication](#) to learn more.



The screenshot shows the 'Playground' interface on the OpenAI platform. The left sidebar contains navigation links: Playground, Chat, Assistants, Compare, Completions, Assistants, Fine-tuning, API keys, Storage, Usage, and Settings. The main content area is titled 'Playground' and includes a 'Test Python' section. The 'Name' field is 'Test Python' and the 'Instructions' field is 'Act as python developer'. The 'Model' dropdown is set to 'gpt-4-t106-preview'. The 'TOOLS' section includes 'Functions', 'Code interpreter' (checked), and 'Retrieval'. The 'FILES' section has an 'Add' button. The right panel shows a Python code snippet for querying an Azure SQL database. The bottom of the interface has a 'Run' button and a 'Clone' button.

Playground

Test Python

Name: Test Python

Instructions: Act as python developer

Model: gpt-4-t106-preview

TOOLS

- Functions
- Code interpreter
- Retrieval

FILES

Add files to use with code interpreter or retrieval.

THREAD thread_zoKs1MakAqUk1kvAKNOEOn2

User

Write a python program to use a large language model to query a Azure SQL database.

asst_E8oJEMmvGnASagHK92Cbcw6z

To query an Azure SQL database using Python, you typically use the `pyodbc` or `pymssql` libraries. However, since this environment does not have internet access, I won't be able to demonstrate live interaction with an Azure SQL database, but I can show you how to write a Python program that you could run in an environment where you have internet access and the ability to install packages. Below is a sample Python program that uses `pyodbc` to query an Azure SQL database. This assumes that you have `pyodbc` installed and an Azure SQL database set up with the necessary firewall rules to allow connections. Here's an example of how you might write such a program:

```
1 import pyodbc
2
3 def query_azure_sql_database(server, database, username, password, sql_query):
4     # Define the connection string
5     driver = 'ODBC Driver 17 for SQL Server'
6     connection_str = f'DRIVER={driver};SERVER={server};DATABASE={database};UID={username};PWD={password}'
7
8     # Connect to the Azure SQL database
9     with pyodbc.connect(connection_str) as conn:
10         with conn.cursor() as cursor:
11             # Execute the SQL query
12             cursor.execute(sql_query)
13
14             # Fetch the results
15             rows = cursor.fetchall()
16
17             # Print the results
18             for row in rows:
19                 print(row)
20
21 # Replace the following placeholders with your actual database information
22 server = '<your_server>.database.windows.net' # Your Azure SQL server name
23 database = '<your_database>' # Your database name
```

Enter your message...

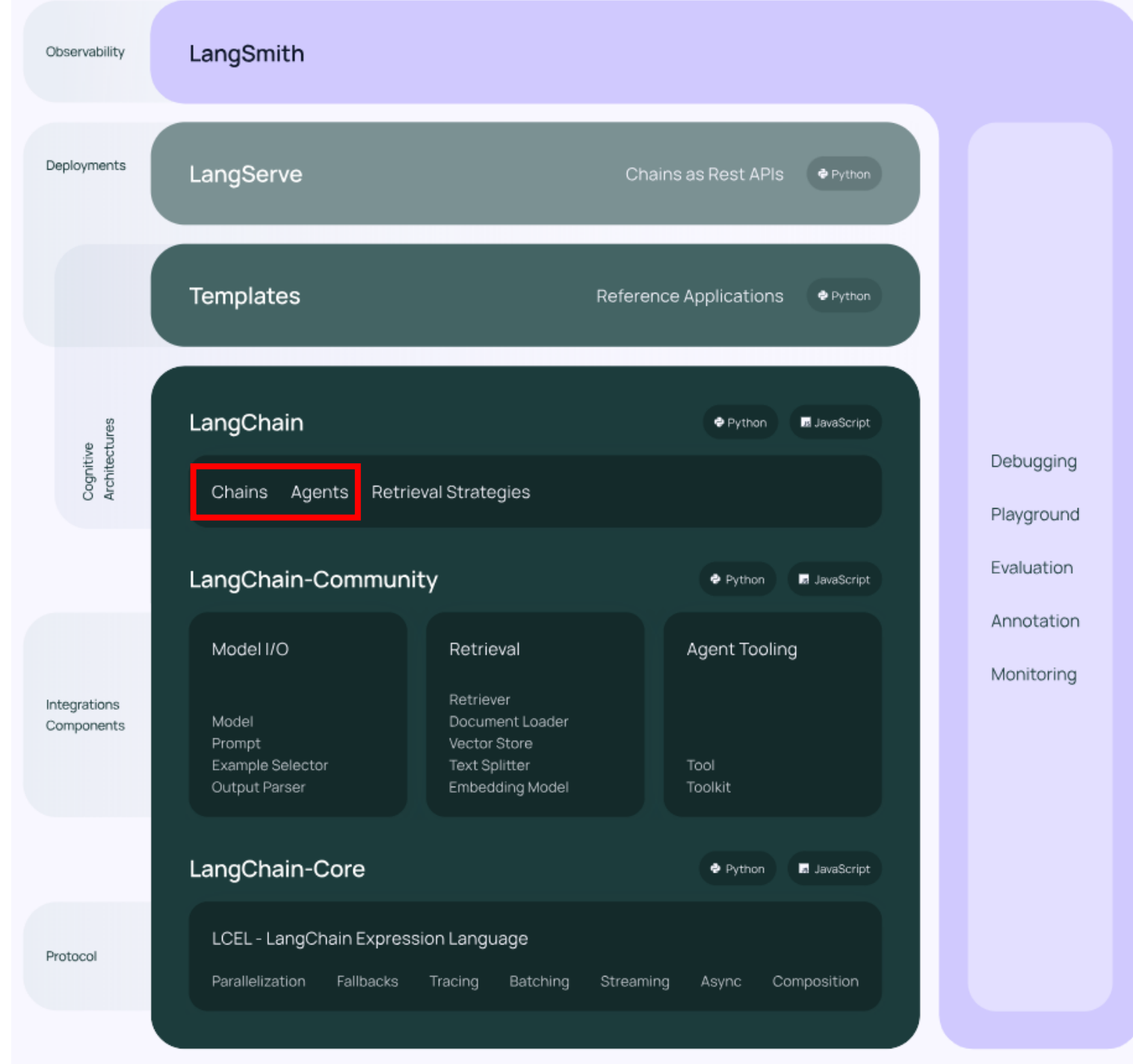
Run

<https://platform.openai.com/playground>

LangChain

<https://langchain.com/>

- **LangChain** is a framework for developing applications powered by large language models (LLMs).
- LangChain simplifies every stage of the LLM application lifecycle:
 - **Development:** Build your applications using LangChain's open-source [building blocks](#) and [components](#). Hit the ground running using [third-party integrations](#) and [Templates](#).
 - **Productionization:** Use [LangSmith](#) to inspect, monitor and evaluate your chains, so that you can continuously optimize and deploy with confidence.
 - **Deployment:** Turn any chain into an API with [LangServe](#).



Demo

Notebook.ipynb

The screenshot shows a Jupyter Notebook environment within VS Code. The Explorer sidebar on the left lists files in a project named 'CHATGPT-RETRIEVAL-MAIN', including a 'data' folder, various PDFs, CSVs, and Python files. The active notebook, 'notebook.ipynb', contains a code cell with the following Python code:

```
# using tools e.g. Open Weather API
from langchain.chat_models import ChatOpenAI
from langchain.agents import initialize_agent, AgentType, load_tools

llm = ChatOpenAI(temperature=0, model="gpt-3.5-turbo-0613")

os.environ["OPENWEATHERMAP_API_KEY"] = constants.OPENWEATHERMAP_API_KEY
tools = load_tools(['openweathermap-api'])

agent = initialize_agent(tools, llm, agent=AgentType.OPENAI_FUNCTIONS, verbose=True)

agent.run("What is the current weather in Munich, Germany?")
```

The output of the code cell shows the agent's response to the query, including a detailed status and weather information for Munich, DE.

```
> Entering new AgentExecutor chain...

Invoking: `OpenWeatherMap` with `{"Location": "Munich,DE"}`

In Munich,DE, the current weather is as follows:
Detailed status: light rain
Wind speed: 2.68 m/s, direction: 302°
Humidity: 69%
Temperature:
- Current: 12.07°C
- High: 13.12°C
- Low: 10.18°C
- Feels like: 11.13°C
Rain: {'1h': 0.38}
Heat index: None
Cloud cover: 97%The current weather in Munich, Germany is light rain. The temperature is 12.07°C with a high of 13.12°C and
```

Work with multiple PDF files in a browser app

The screenshot shows a web browser window with the address bar displaying "Nicht sicher | 192.168.178.90:8501". The application interface is divided into two main sections.

Left Panel: Your documents

- Header: "Your documents" with a close button (X).
- Instruction: "Upload your PDFs here and click on 'Process'"
- Drop zone: "Drag and drop files here" with a note "Limit 200MB per file" and a "Browse files" button.
- Uploaded files:
 - transact-sql-the-building-bl... (2.6MB)
 - sql-server-execution-plans-... (23.6MB)
- Action button: "Process"

Right Panel: Chat with multiple PDFs

- Header: "Chat with multiple PDFs" with a chat icon.
- Input prompt: "Ask a question about your documents:"
- Input field: "What are execution plans in SQL Server?"
- Response area:
 - First response (imgbb.com placeholder): "What are execution plans in SQL Server?"
 - Second response (AI avatar): "Execution plans in SQL Server are sets of instructions generated by the SQL Server Query Optimizer. These plans describe the operations that the execution engine needs to perform to retrieve the data required by a query. Execution plans reveal details such as which tables and indexes are accessed, the order of access, types of joins used, data retrieval methods, aggregations, foreign key accesses, and more. They are valuable for troubleshooting poorly-performing queries by identifying specific operations causing issues, such as reading excessive rows from a table or index. By examining execution plans, users can optimize queries by modifying code to improve performance."



Microsoft Azure

Search resources, services, and docs (G+)

Home >

Azure AI services

Azure AI services

Search

Overview

All Azure AI services

Azure AI services

- Azure AI services
- Azure OpenAI
- AI Search
- Computer vision
- Face API
- Custom vision
- Speech service
- Language service
- Translator
- Document intelligence
- Bot services
- Anomaly detector
- Content moderator
- Health Insights
- Personalizer
- Metrics advisor
- Immersive reader
- Azure AI services multi-service account
- Content safety
- Language understanding (classic)
- QnA maker (classic)

Build smarter apps and services

Azure AI services brings AI within reach of every developer—without requiring machine-learning expertise. All it takes is an API call to embed the ability to see, hear, speak, search, understand, and accelerate decision-making into your apps. [Learn more](#)

Azure OpenAI account

Perform a wide variety of natural language tasks.

+ Create View

AI Search

Bring AI-powered cloud search to your mobile and web apps.

+ Create View

Computer vision

Analyze content in images and videos. [Learn more](#)

+ Create View

Face API

Detect and identify people and emotions in images. [Learn more](#)

+ Create View

Custom vision

Customize image recognition to fit your business. [Learn more](#)

+ Create View

Speech service

Speech to text, text to speech, translation and speaker recognition. [Learn more](#)

+ Create View

Language Service

Build apps with industry-leading natural language understanding capabilities. [Learn more](#)

+ Create View

Translator

Translate more than 100 languages and dialects. [Learn more](#)

+ Create View

Document intelligence

Turn documents into usable data at a fraction of the time and cost.

+ Create View

Bot services

Create bots and connect them across channels.

+ Create View

Anomaly detector

Identify potential problems early on. [Learn more](#)

+ Create View

Content moderator

Detect potentially offensive or unwanted content. [Learn more](#)

+ Create View

Health Insights

Health Insights

+ Create View

Personalizer

Create rich, personalized experiences for each user. [Learn more](#)

+ Create View

Metrics advisor

Proactively monitor metrics and diagnose issues.

+ Create View

Immersive reader

Help users read and comprehend text.

+ Create View

Azure AI services multi-service account

Add multiple Azure AI services to your application.

+ Create View

Content safety

An AI service that detects unwanted contents. [Learn more](#)

+ Create View

Language understanding (classic)

Understand natural language in your apps. [Learn more](#)

+ Create View

QnA maker (classic)

Distill information into easy-to-navigate questions and answers. [Learn more](#)

+ Create View

Timeline of key Microsoft AI breakthroughs

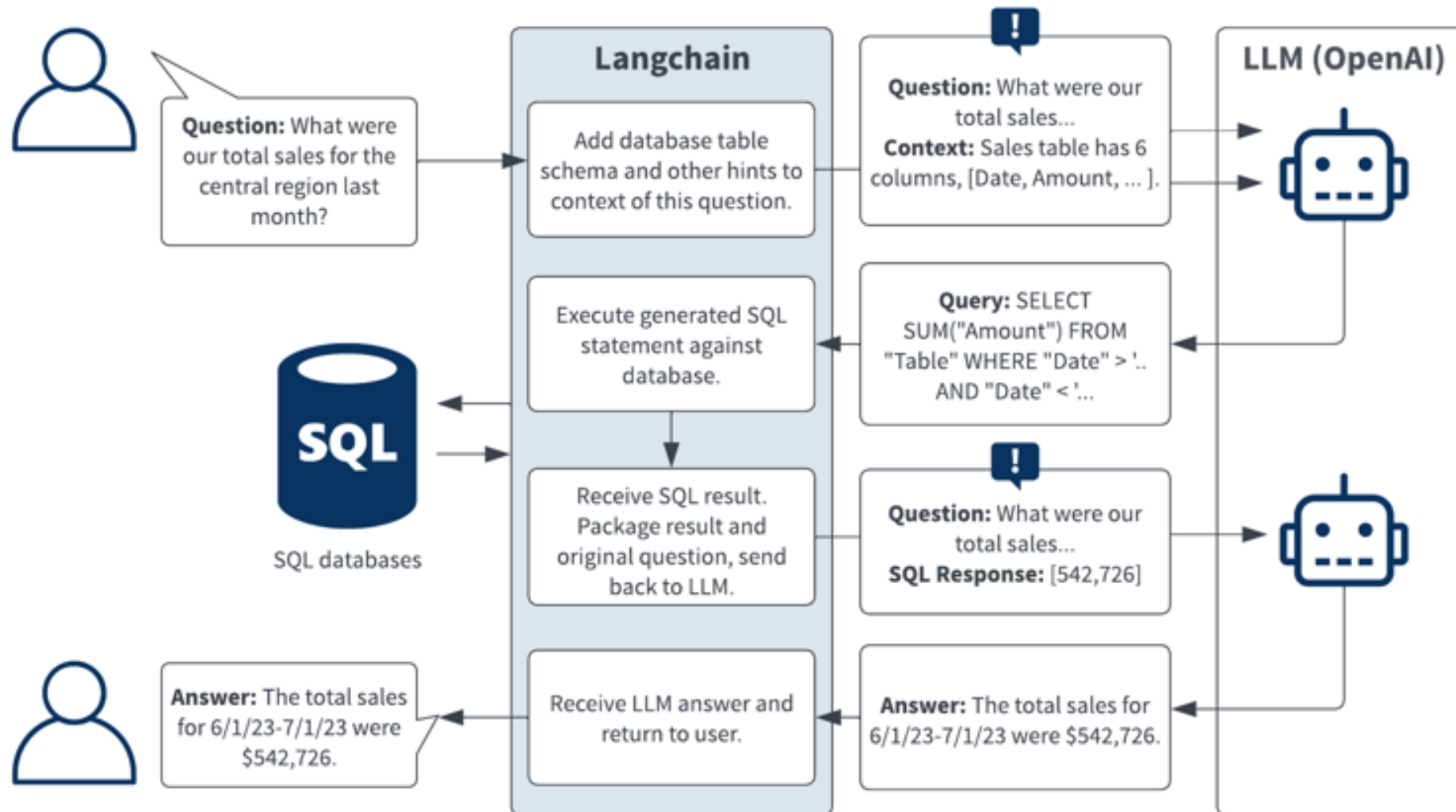


Work with OpenAI service

The image is a collage of four screenshots from the Azure OpenAI service interface.

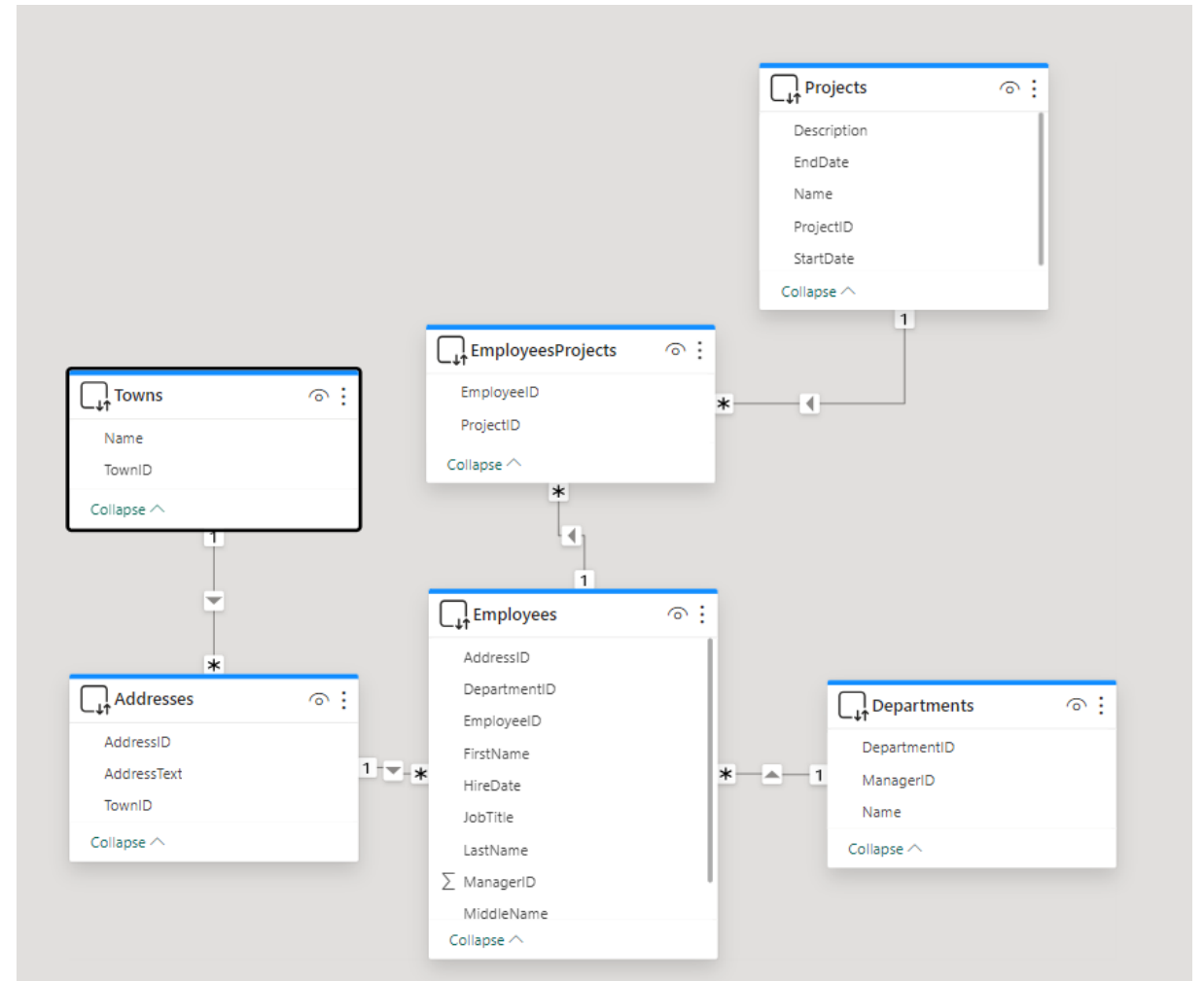
- Top Left:** A screenshot of the 'OpenAI Resource group' overview page. It shows a sidebar with navigation links like 'Overview', 'Activity log', 'Access control (IAM)', 'Tags', 'Resource visualizer', 'Events', 'Settings', 'Deployments', 'Security', 'Deployment stacks', 'Policies', 'Properties', 'Locks', 'Cost Management', 'Cost analysis', 'Cost alerts (preview)', 'Budgets', 'Advisor recommendations', 'Monitoring', and 'Insights (preview)'. The main content area shows 'Essentials' with subscription details and a list of resources.
- Top Right:** A screenshot of the 'Azure OpenAI' service page. It features the OpenAI logo, the text 'Azure OpenAI Microsoft', a star rating of 4.4 (146 ratings), and a 'Plan' section with 'Azure OpenAI' selected. Below this is an 'Overview' section with the text: 'Enable new business solutions by GPT-3 models. These models can easily adapt to your scenarios and help you build them to numerous scenarios.'
- Bottom Left:** A screenshot of the 'Create Azure OpenAI' wizard. It shows the 'Basics' tab with options for 'Playground', 'Chat', 'Abschlüsse', 'DALL-E', 'Assistenten (Vorschau)', 'Verwaltung', 'Bereitstellungen', 'Modelle', 'Datendateien', 'Kontingente', and 'Inhaltsfilter (Vorschau)'. It also displays 'Project Details' with subscription and resource group information, and 'Instance Details' with region and name fields.
- Bottom Right:** A screenshot of the 'Azure OpenAI Studio' playground. It displays a welcome message and a grid of interactive playgrounds for 'Textgenerierung' (Assistenten-Playground, Eigene Daten verwenden, Chat-Playground, Playground für Vervollständigungen) and 'Bildgenerierung' (DALL-E-Playground, Whisper-Spracherkennung). Each playground includes a brief description and a 'Jetzt ausprobieren' button.

Query databases



Datamodel of test database

- Possible queries
 - How many projects ended in 2003?
 - Who is the manager of Sylvio Hellmann?
 - List projects which has Sylvio worked on including Project name, description, start and end date. Format the output as table in a markdown language.

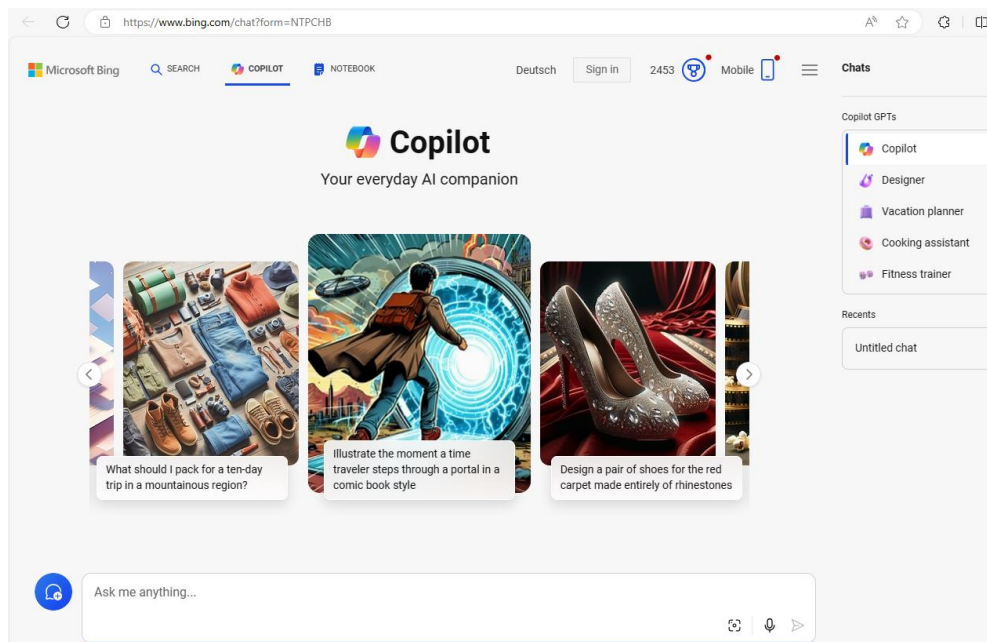


Demo

notebook_AzureOpenAI copy.ipynb

Microsoft AI timeline – for Copilot

- Different tools in the MS world
 - GitHub Copilot
 - Copilot in Bing/Edge
 - Microsoft 365 Copilot



Power BI Q&A

TestDB_Queries_with_QandA • Last saved: Today at 5:12 PM

File Home Insert Modeling View Optimize Help External tools **Format** Data / Drill

Apply drill down filters to Entire page

Bring forward Send backward Selection Align Group

Interactions

How many projects ended in 2003?

Showing results for How many projects ended in 2003 (end date)

53

Count of Projects

Content created by AI may be inaccurate. [Read terms](#)

List projects which has Sylvio worked on including Project name, description, start and end date.

Showing results for Projects and start date with first name Sylvio

Name	ProjectID	Description
LL Mountain Frame	8	Research, design and development of LL Mountain Frame. Our best value utilizing the same, ground-breaking frame technology as the ML aluminum frame.
LL Mountain Front Wheel	42	Research, design and development of LL Mountain Front Wheel. Replacement mountain wheel for entry-level rider.
Mountain Pump	117	Research, design and development of Mountain Pump. Simple and light-weight. Emergency patches stored in handle.
Road-450	28	Research, design and development of Road-450. A true multi-sport bike that offers streamlined riding and a revolutionary design. Aerodynamic design lets you ride with t conquer hilly roads.

Content created by AI may be inaccurate. [Read terms](#)

Count of ManagerID

Q&A setup

Getting started

1 Improve Q&A with synonyms from your org Add synonym suggestions from your organization. [Read terms](#) [Add synonyms](#)

Synonyms

Relationships

Teach Q&A

Review questions

Suggest questions

Synonyms

Add terms people might use as synonyms for the fields and tables in your data.

Review questions

Review questions people have asked and fix misunderstandings.

Teach Q&A

Teach Q&A to understand questions and terms people might use.

Suggest questions

Help people explore your data by adding suggested questions.

Help Q&A understand people better

Learn more about Q&A

This feature is in preview. [Learn more](#)

This is the end → Q&A