Google Cloud

Introduction to Google Agentspace

In this module, you learn to …

01 Describe the value of Google Agentspace to your organization.

02 Use Agentspace to find documents, get answers to questions, brainstorm, and more.

03 Create an Agentspace app.
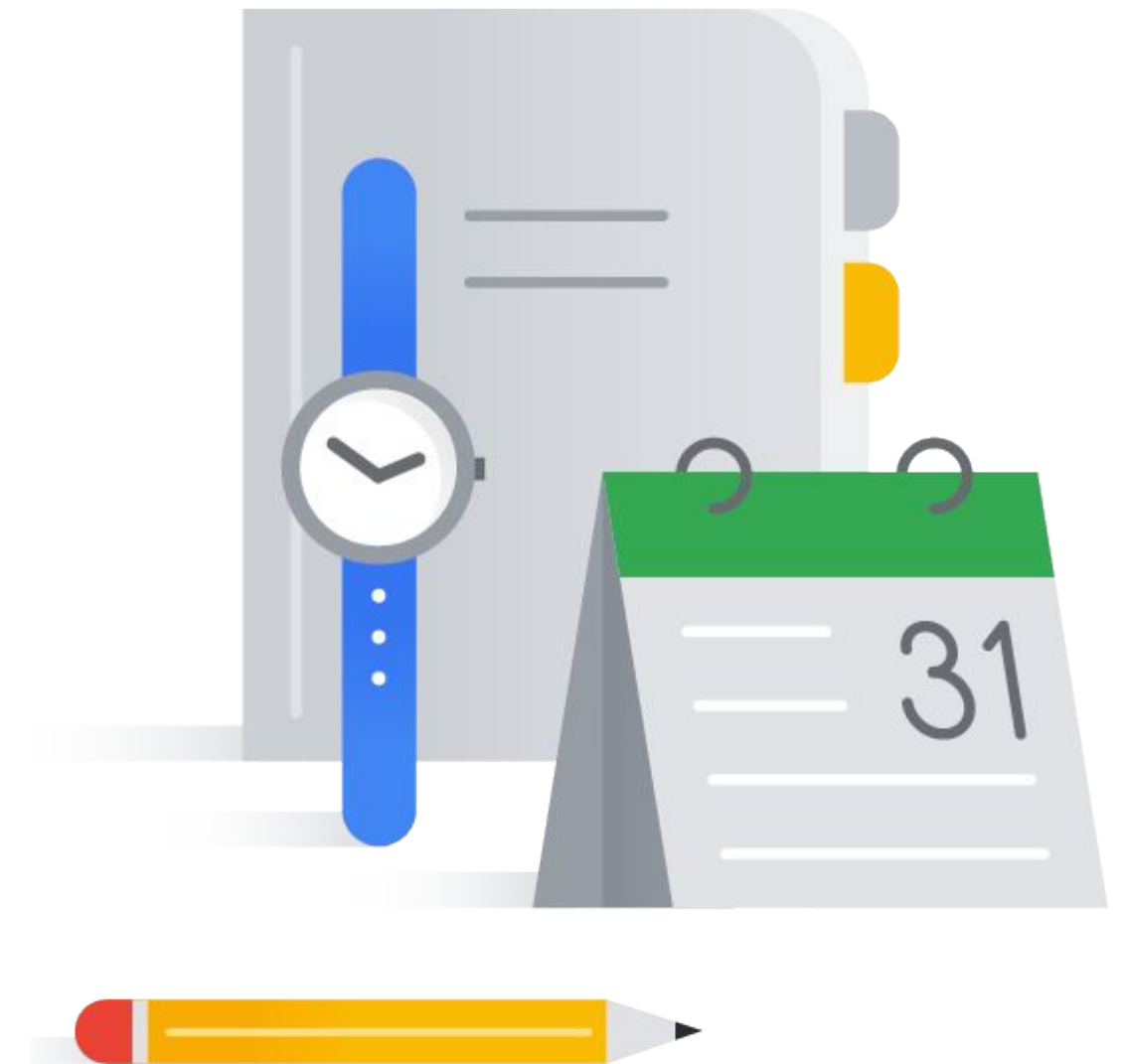
04 Configure an identity provider for authorization.

05 Grant access to Workspace data stores.

Google Cloud

Agenda

Google Cloud

01

The value of Agentspace

Within enterprises, information discovery is an unsolved problem

Siloed data sources

Emails, Chats

Documents, Sheets

Databases, CRM, ERP

Images, Videos, Audio

many, many others

45% of all information employees retrieve is irrelevant.

89% of employees search across up to 6 sources for information.

Google Cloud

Bring your enterprise data together with Agentspace to extract insights quickly

Siloed data sources

Emails, Chats

Documents, Sheets

Databases, CRM, ERP

Images, Videos, Audio

many, many others

+

Google Agentspace

Gemini multimodal

Google-quality search engine

Insights

Google Cloud
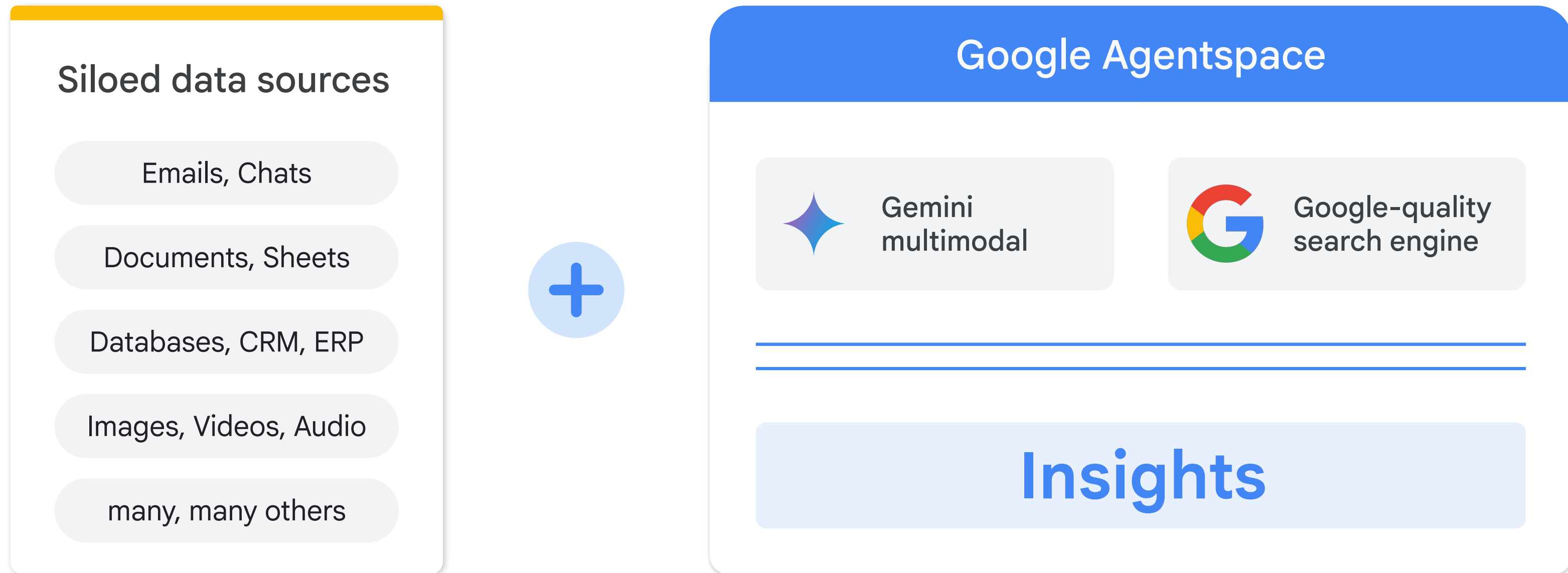
Agentspace can act as a homepage to start your daily work

Search content or ask questions ⊕

Suggestions

✦ Summarize a new product's features

✦ Help me write an email to pitch a new product

For you

In 24 minutes

Product Reviews

February 25, 2025

📅 Calendar

Recents

📊 Production Update Project Budget

📙 Catalog Layout Draft

📄 Q1 Strategic Goals

Google Cloud

Search for documents, emails or other existing content

Sales data   ⊕ ▷

Search results

📁 **Cymbal Sales Data**
https://drive.google.com/a/company.com/open?id=1ta...

Created on February 11, 2025. Owned by [...].

📄 **Cymbal Shops Q4 Sales Data by City.xlsx**
Sheet1 Rank,City,October,November,December,Q4 Total 1,...

Created on February 18, 2025. Owned by [...].

M **Sales Data by City**

Sales data for Houston in Q4   ⊕ ▷

Houston Sales Data - Q4

In Q4, Houston's sales figures were as follows: October: $14,360,267; November: $25,400,876; December: $25,238,923. The total sales for the quarter reached $65,000,066. 🔗

↳ What were Houston's total Q4 sales?

Ask a follow-up

Receive a generative AI summary of the key information in documents

Summarize the document Cymbal Shops Sales Analysis Report

📅 Calendar	🔺 Drive	M Mail	Last Updated ▾

✦ Generative AI may display inaccurate information, including about people, so double-check its responses.

Q4 Sales Performance by City

- **Top Performers:** Fort Worth led with $65,257,095 in sales, closely followed by Houston at $65,000,066. New York City ranked eighth overall.
- **Sales Distribution:** The top ten cities generated a substantial portion of total sales, while the remaining ten cities contributed much less.
- **Monthly Trends:** October and November were generally the strongest sales months for most cities, with December showing significantly lower sales in many locations. However, [...] 🔗

Google Cloud

Ask questions and get responses with citations in natural language

Which cities increased sales in December? ⊕ ➤

| 📅 Calendar | ▲ Drive | M Mail | Last Updated ⌄ |

✦ Generative AI may display inaccurate information, including about people, so double-check its responses.

While December sales were significantly lower than October and November for many cities, San Diego, Indianapolis, and Charlotte saw their highest sales figures in December. 🔗

↳ What were San Diego's December sales?   ↳ Which cities saw lower December sales?

Ask a follow-up

Use the assistant to receive helpful guidance

Help me brainstorm a presentation flow to present sales insights

📅 Calendar   △ Drive   M Mail   Last Updated ⌄

I. Introduction (2 min): Start with a captivating statistic about sales performance, setting the stage for the presentation. Briefly introduce the timeframe and key metrics to be covered. Clearly state the presentation's objective - what actionable insights will the audience gain?

II. Overall Sales Performance (5 min): Present a high-level overview using a visually appealing chart (e.g., bar chart showing total revenue, growth percentage). Highlight key trends and compare performance against previous periods (YoY). If possible, include benchmarking data.

III. Deep Dive into Key Areas (10 min): Focus on 2-3 key areas driving sales [...]

Ask Agentspace to take actions in Gmail, Calendar, or other connected systems

Send an email to beverly@cymbalshops.com with high-level insights from the Sa ⊕ ▷

| 📅 Calendar | 🔺 Drive | Ⓜ Mail | Last Updated ▾ |

I've created a draft for you to send an email. Please edit if necessary, and confirm below.

Ⓜ **Gmail**

Subject*

Sales Analysis Report - High-Level Insights

To

beverly@cymbalshops.com

Broadcast helpful information to your users with Announcements

March 3, 2025

Stay curious with Google Cloud Training

Leverage our on-demand courses and hands-on experiences on Cloud Skills Boost.
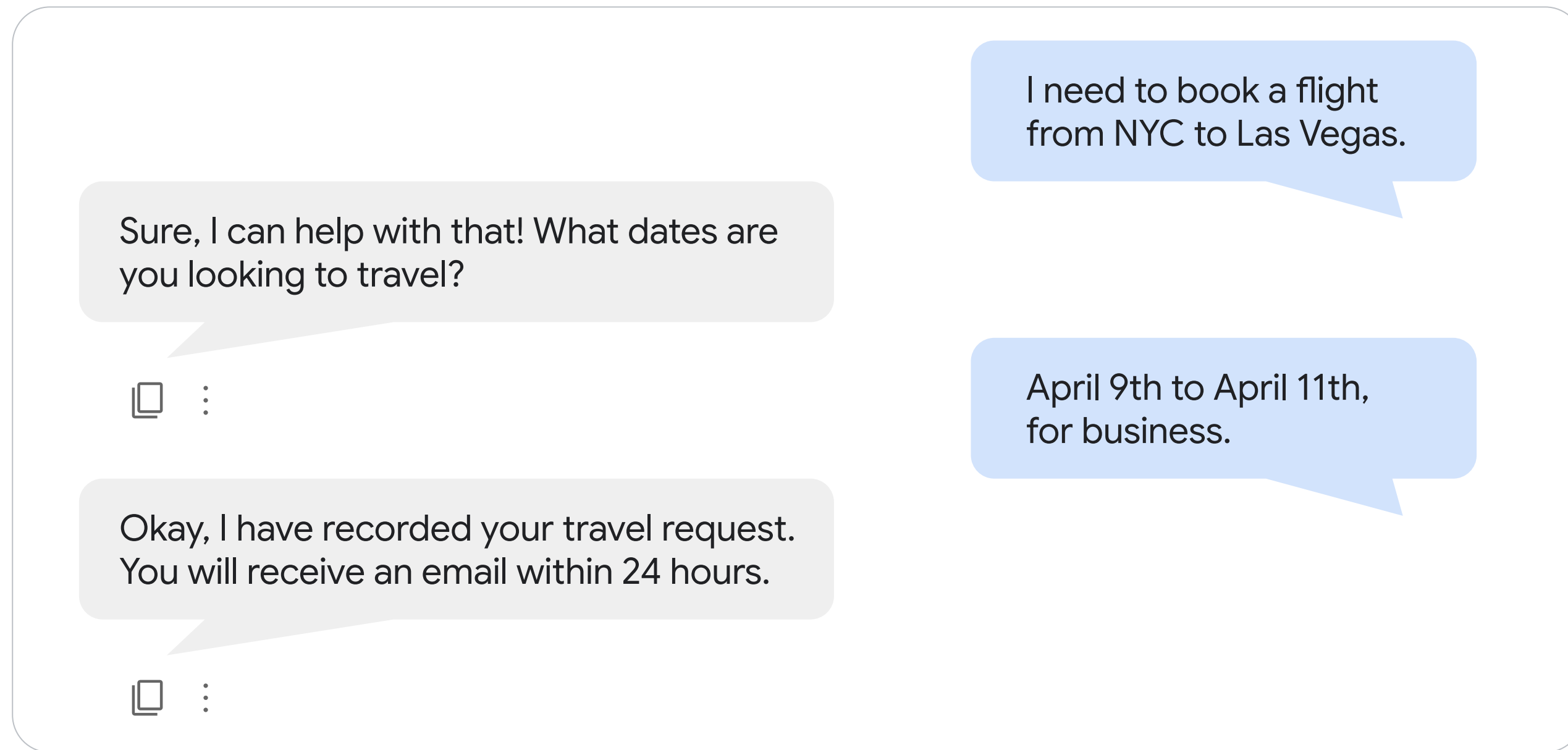
December 14, 2024

Introducing Google Agentspace

Google Agentspace announced!

Uncover insights from your enterprise data with Google Agentspace.

Google Cloud

Build custom agents to act on the user's behalf

I need to book a flight from NYC to Las Vegas.

Sure, I can help with that! What dates are you looking to travel?

April 9th to April 11th, for business.

Okay, I have recorded your travel request. You will receive an email within 24 hours.

Google Cloud

Unlock enterprise expertise on Google Cloud

NotebookLM Enterprise

- Same features as NotebookLM and NotebookLM Plus
- Hosted on Google Cloud
- Enhanced security and privacy features

Agentspace Enterprise

- Single, company-branded multimodal search agent
- Conversational assistance, answer complex questions, make proactive suggestions, take actions
- Supports unstructured and structured data
- Provides built-in translation and prebuilt connectors to common third-party applications
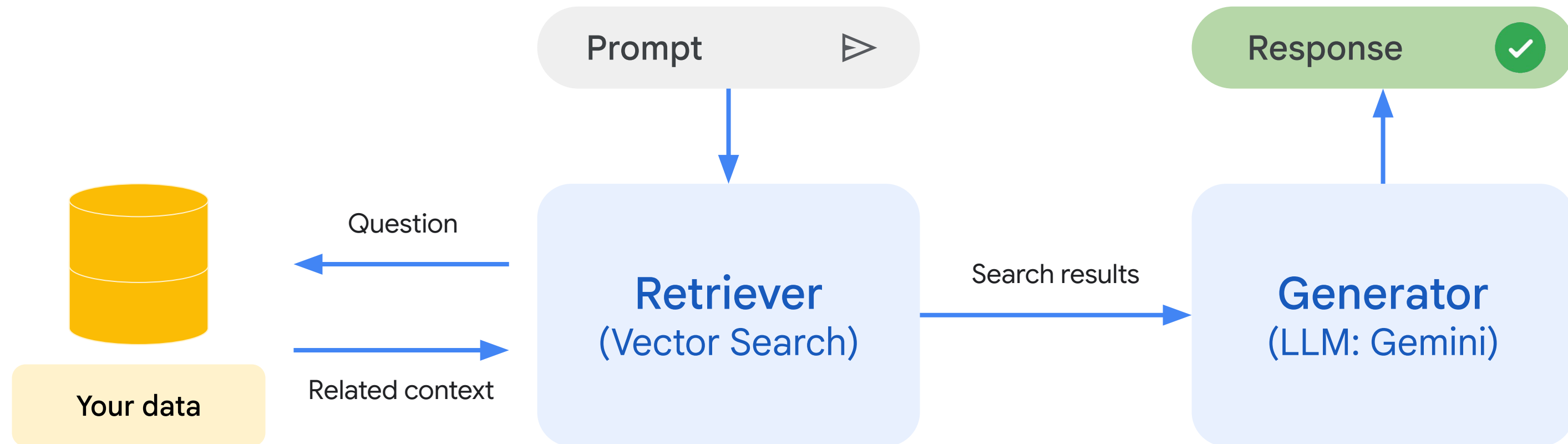
Agentspace Enterprise Plus

- Same features and experience as Agentspace Enterprise
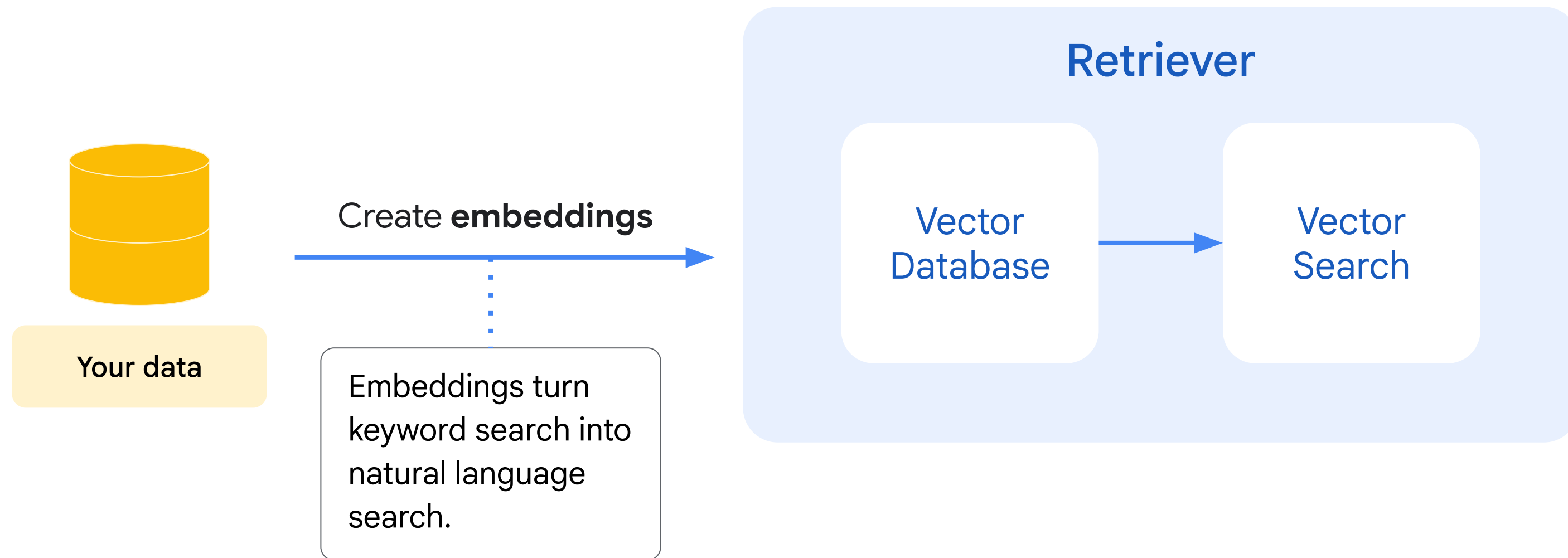- Build custom agents that apply generative AI contextually to automate business workflows

Google Cloud

02

How Agentspace works

Agentspace uses Retrieval Augmented Generation (RAG) to provide responses grounded in your data

To make use of Vector Search, Agentspace creates embeddings out of your data

Your data

Create **embeddings**

Embeddings turn keyword search into natural language search.

Retriever

Vector Database → Vector Search

Google Cloud

Embeddings capture similarities, dissimilarities, and analogies between words

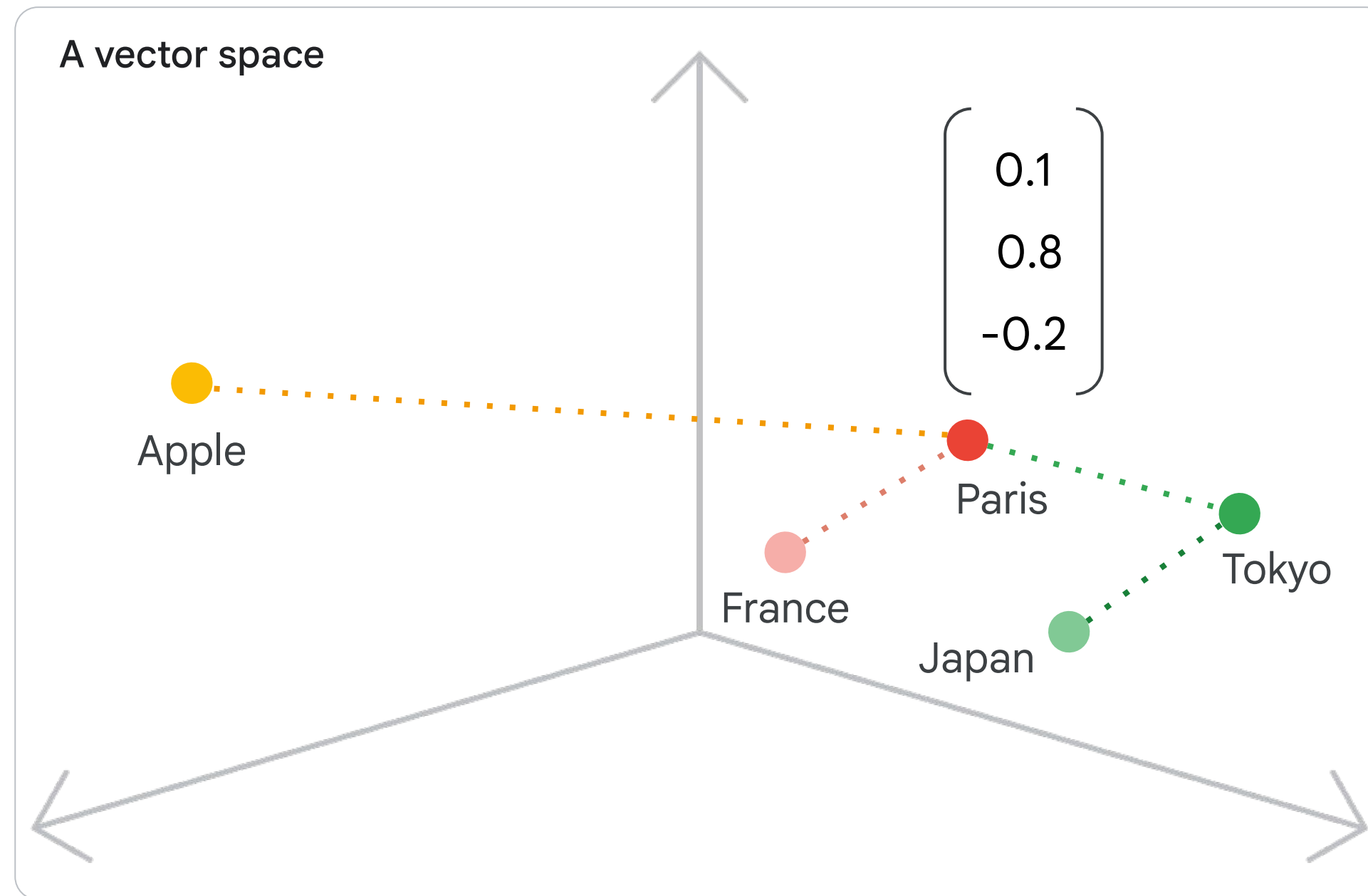How would you describe a word?

Paris ⟶

Nature | Location

Origin

Memory | Emotion

...

Embeddings are numerical representations of data that capture semantic relationships

A vector space

$$\begin{bmatrix} 0.1 \\ 0.8 \\ -0.2 \end{bmatrix}$$

Apple

France

Paris

Japan

Tokyo

Similarities

"Paris is similar to Tokyo"
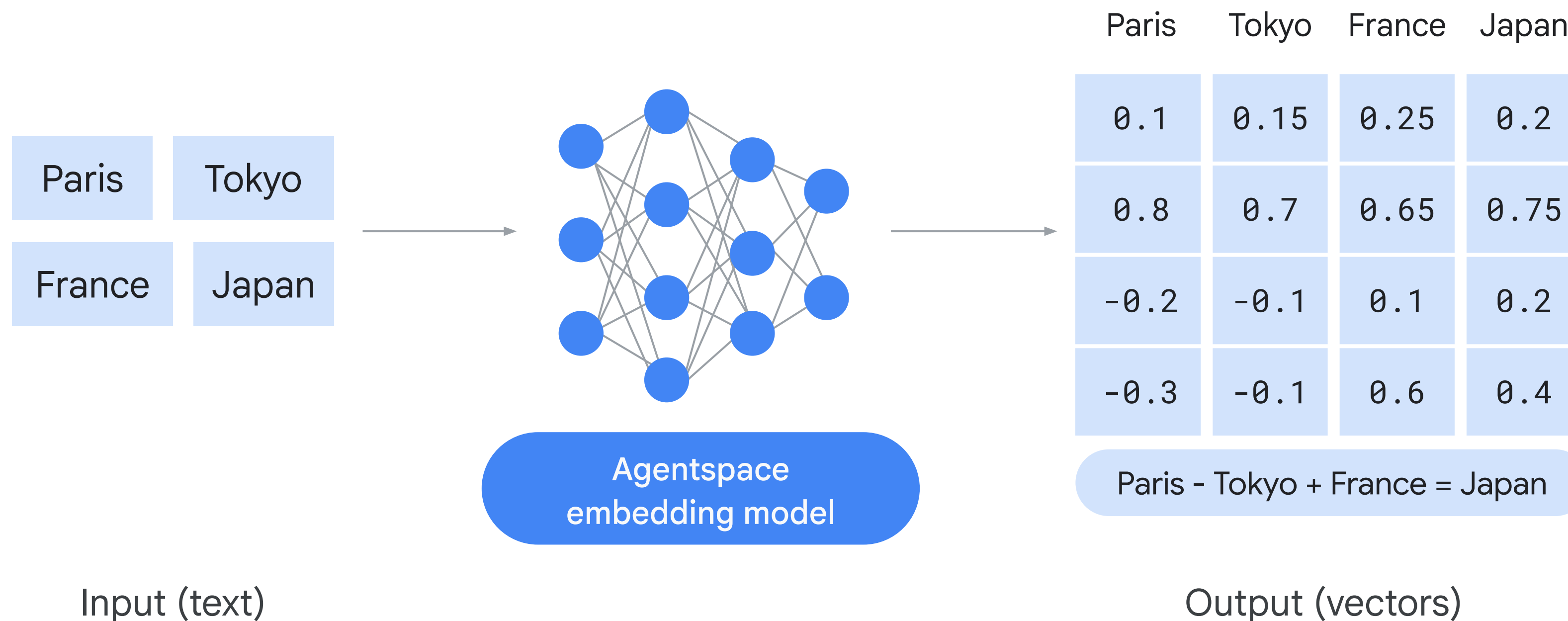
Dissimilarities

"Paris is not similar to Apple"

Analogies

"Paris to France is the same as Tokyo to Japan"

Google Cloud

Agentspace creates and stores embeddings automatically

Paris	Tokyo
France	Japan

Input (text)

Agentspace embedding model

Paris	Tokyo	France	Japan
0.1	0.15	0.25	0.2
0.8	0.7	0.65	0.75
-0.2	-0.1	0.1	0.2
-0.3	-0.1	0.6	0.4

Paris - Tokyo + France = Japan

Output (vectors)

Google Cloud

Summary: How Agentspace generates grounded responses

Prompt ▷

Encode

Retriever

Vector Database → Vector Search

Response ✓

Generator

LLM: Gemini

Your data

Encode

Ranked results

Provide data → Create embeddings → Store embeddings, perform similarity search → Retrieve top K search results → Augment response with the result
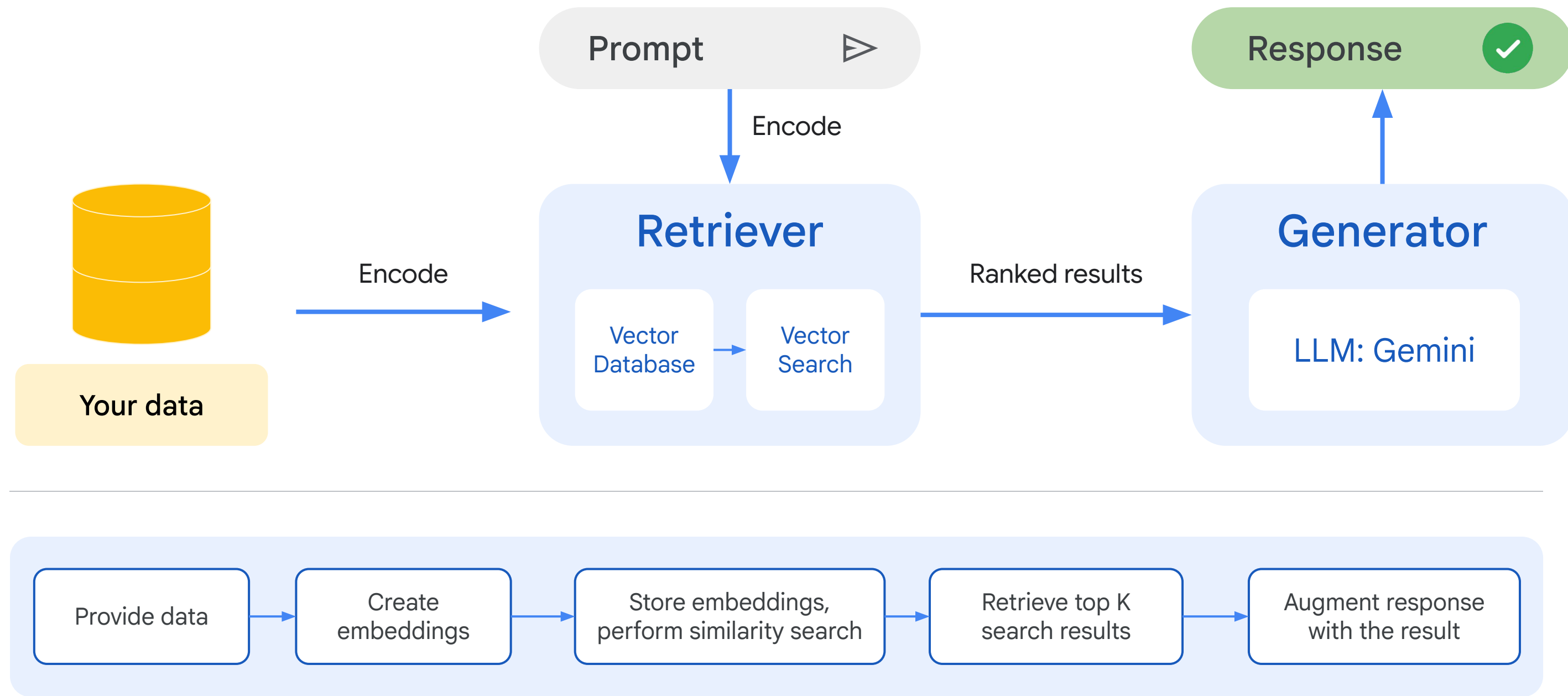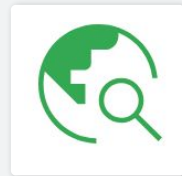
Google Cloud

03

Build a data store and app

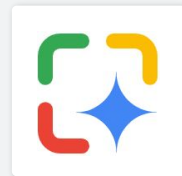# Build Agentspace apps with Vertex AI Applications on Google Cloud

Search and assistant

- Search for commerce
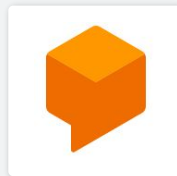- Search for your website
- Agentspace ✓

... many more

Conversation agents
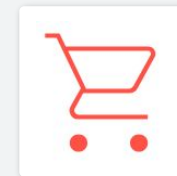
- Conversational agent
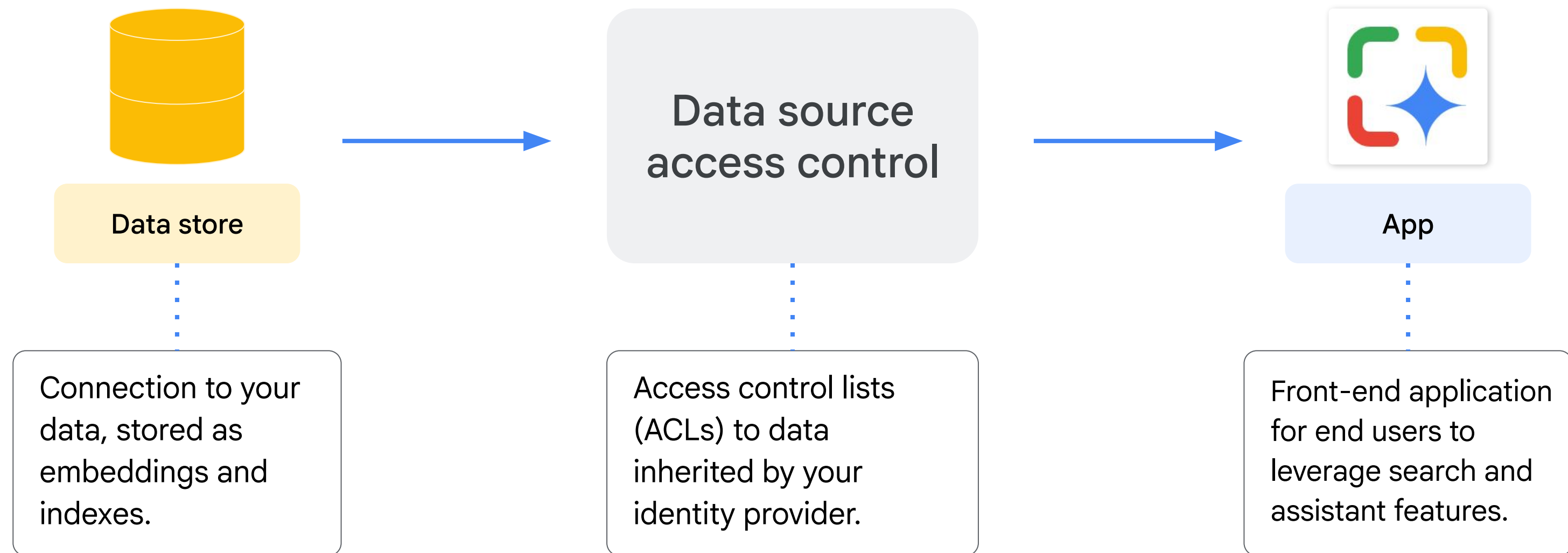- Chat

Recommendations

- Recommendation engine
- Media recommendations
- Retail recommendations

Agentspace is a no-code solution to provide search and assistant features

Data source access control

Data store

App

Connection to your data, stored as embeddings and indexes.

Access control lists (ACLs) to data inherited by your identity provider.

Front-end application for end users to leverage search and assistant features.

Configured in and managed by serverless **Vertex AI Applications.**

Google Cloud

Data stores represent connections to data with embeddings and indexes

Data store types

Structured

Unstructured

Third-party connectors

Data store formats

CSV, JSON

PDF, HTML, TXT

PPTX, DOCX

Other third-party

Data store sources

Cloud Storage

BigQuery, Cloud SQL

Google Workspace

Confluence, Jira

... many more

Google Cloud

Enable data source access control to inherit user access permissions

Google Identity

- Identities are present and managed through Google Cloud.

- Identities are managed by a third-party provider and synced with Google Identity.

- Identities perform SSO through Google Identity and are directed to the third-party provider.

✅ Cloud Storage, BigQuery, Google Drive

Third-party identity provider federation

- Third-party identity provider needs to support OpenID Connect (OIDC) or SAML 2.0.

- Examples: Azure Active Directory, Okta

- Use Workforce Identity Federation for setup.
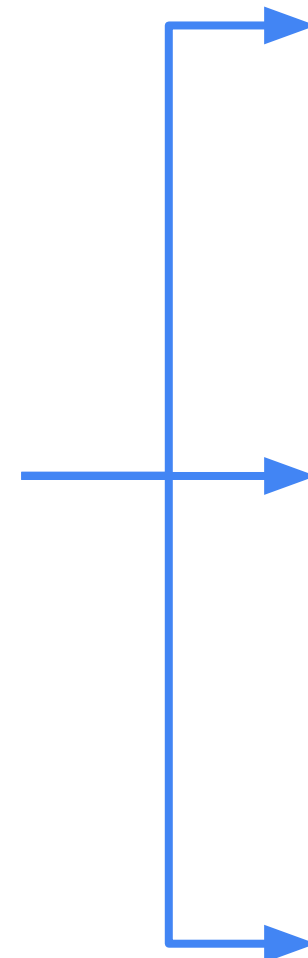
✅ All third-party data sources

An app provides search results and assistant features to your end users

Agentspace

Build an enterprise compliant search and assistant tool. Powered by Gemini, your employees can easily find answers in vast amounts of company data, automate content creation, and execute tasks with connected apps, all from a single interface.

CREATE

External name of your company or organization

- Providing your company name helps the model provide higher-quality responses.

Location of your app (multi-region)

- Global is recommended (US and EU available). Location cannot be changed later.
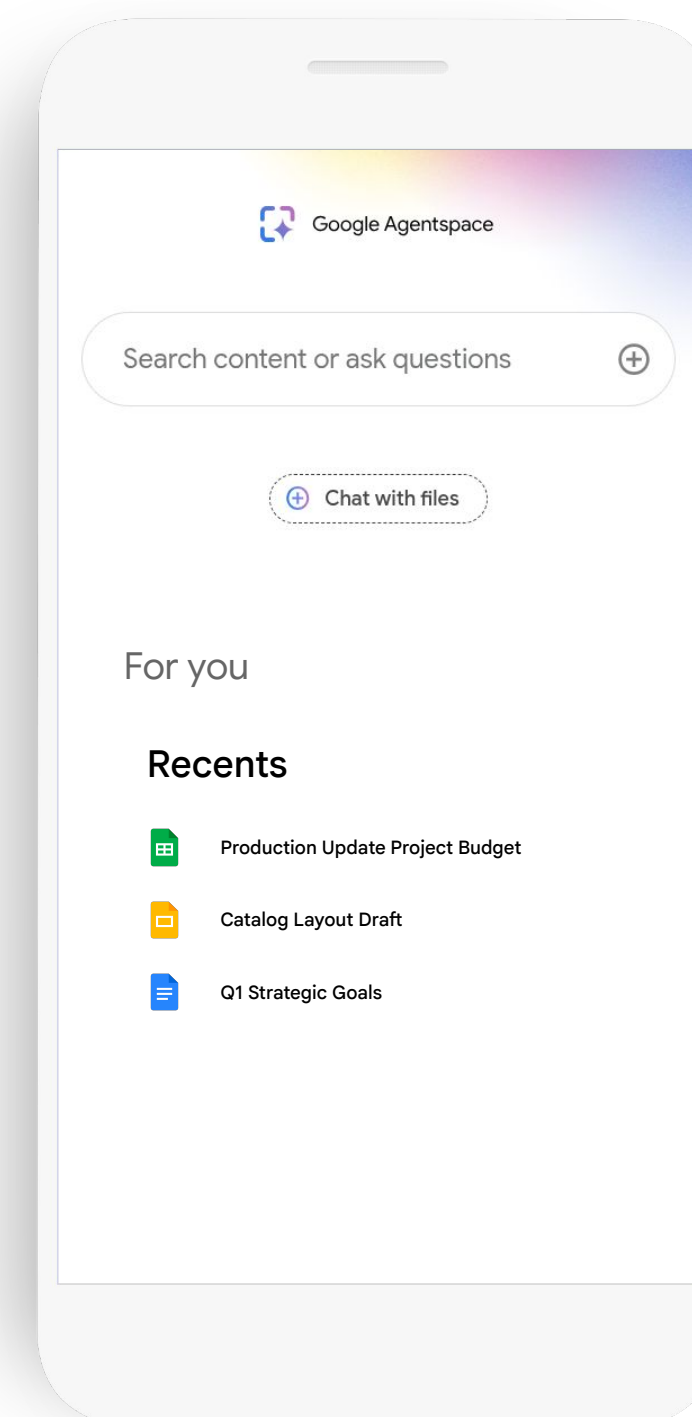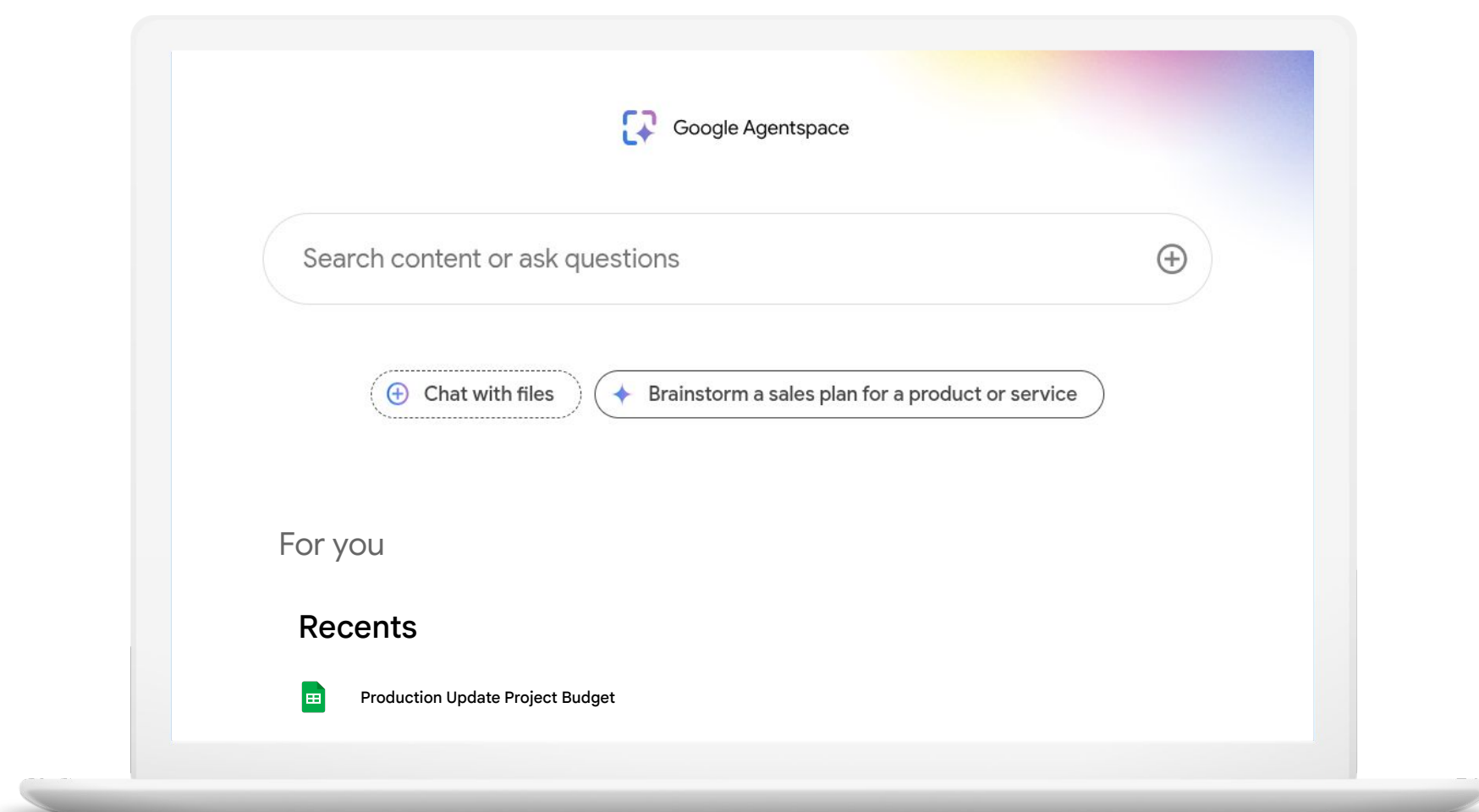
Select tier (Search, Search + Assistant)

- Blended search across your data; assistant offers generative answers and conversation grounded in data.

04

Preview and configure your app

Preview your Agentspace homepage for desktop and mobile devices

Google Cloud

Customize your homepage UI, assistant's behavior, and more

Autocomplete

Configure the search bar functionality settings.

UI

Customize appearance and branding options.

Control

Create controls which help modify search results.

Assistant

Configure additional settings for the AI assistant.

Decide how your homepage can be accessed with integrations

Webpage

Enable the Web App ●✓

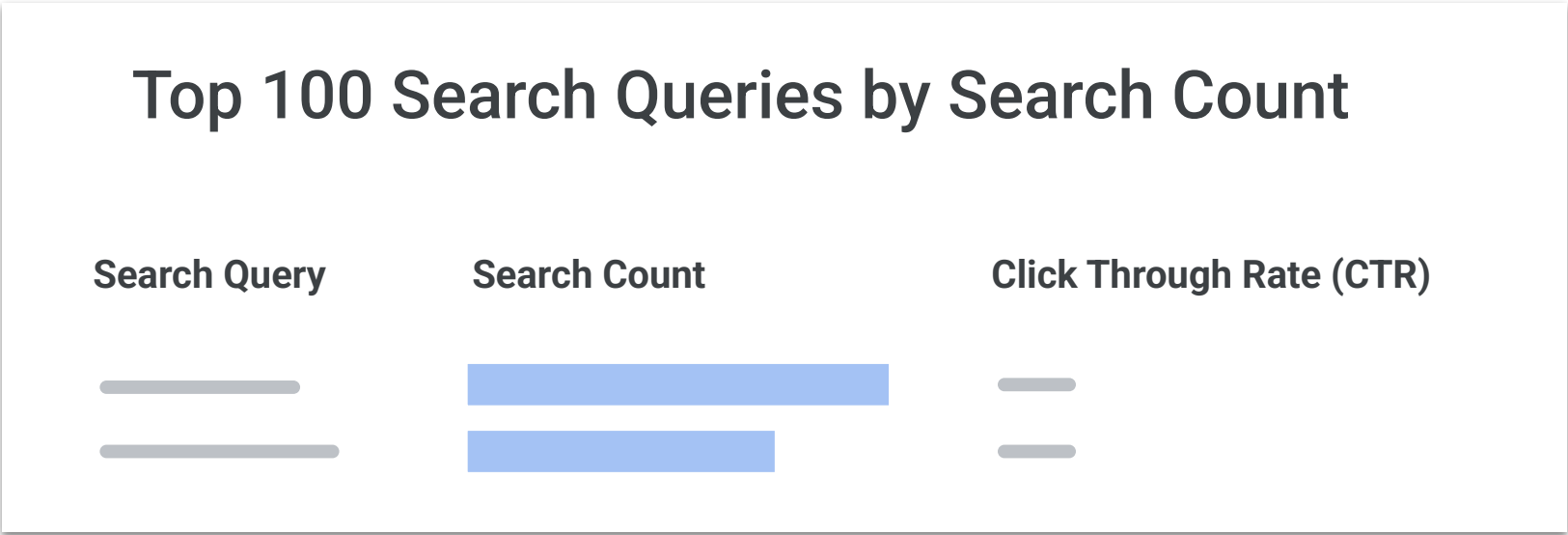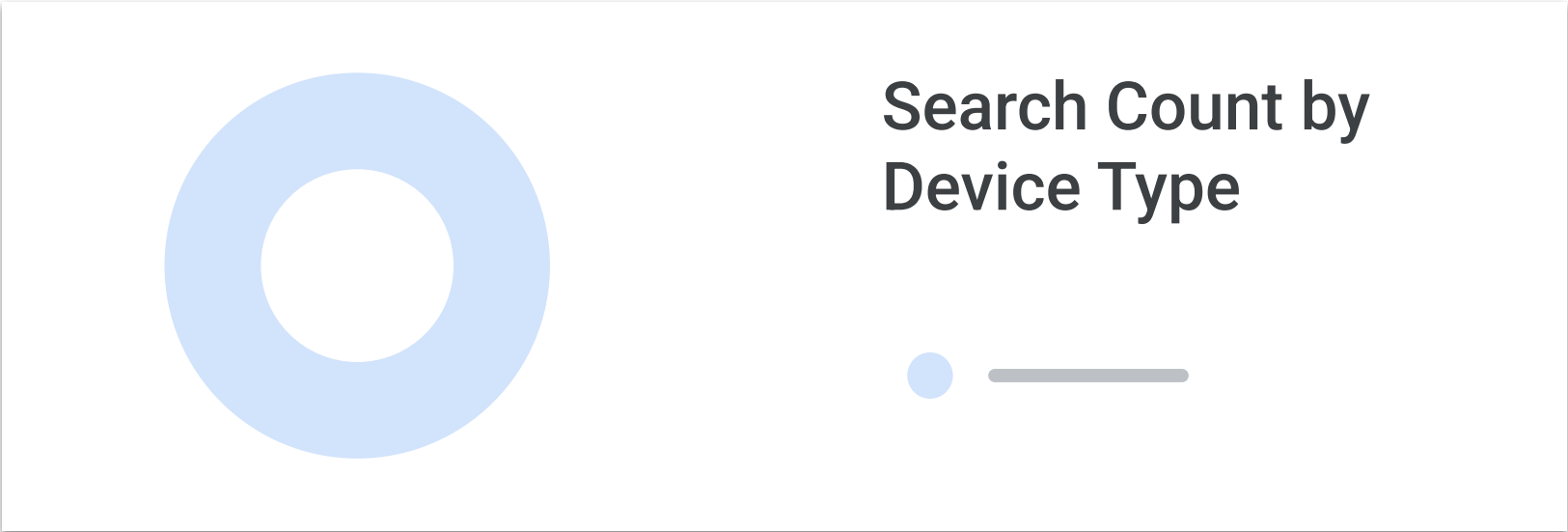Language   Auto ▾

Link   https://vertexaisearch..

API

Get code snippets of requests to access the functionality of your homepage through API calls.

```
curl -X POST -H "Authorization:
Bearer $(gcloud auth
print-access-token)" ...
```

Gain insights into the usage of your homepage with Analytics

Search Count by Device Type

Top 100 Search Queries by Search Count

Search Query **Search Count** **Click Through Rate (CTR)**

Analytics features

- Aggregate metrics by individual search, search session, or compare metrics between the two.

- Example metrics:

  - A count of searches or search sessions.

  - The top 100 queries by search count.

  - The top 10 search queries with no result.

  - The 100 most-searched/clicked documents.

Google Cloud

05

Make your app act on the user's behalf

Ask Agentspace to take actions in Gmail, Calendar, or other connected systems

Send an email to beverly@cymbalshops.com with high-level insights from the Sa ⊕ ➤

| 📅 Calendar | 🔺 Drive | M Mail | Last Updated ▾ |

I've created a draft for you to send an email. Please edit if necessary, and confirm below.
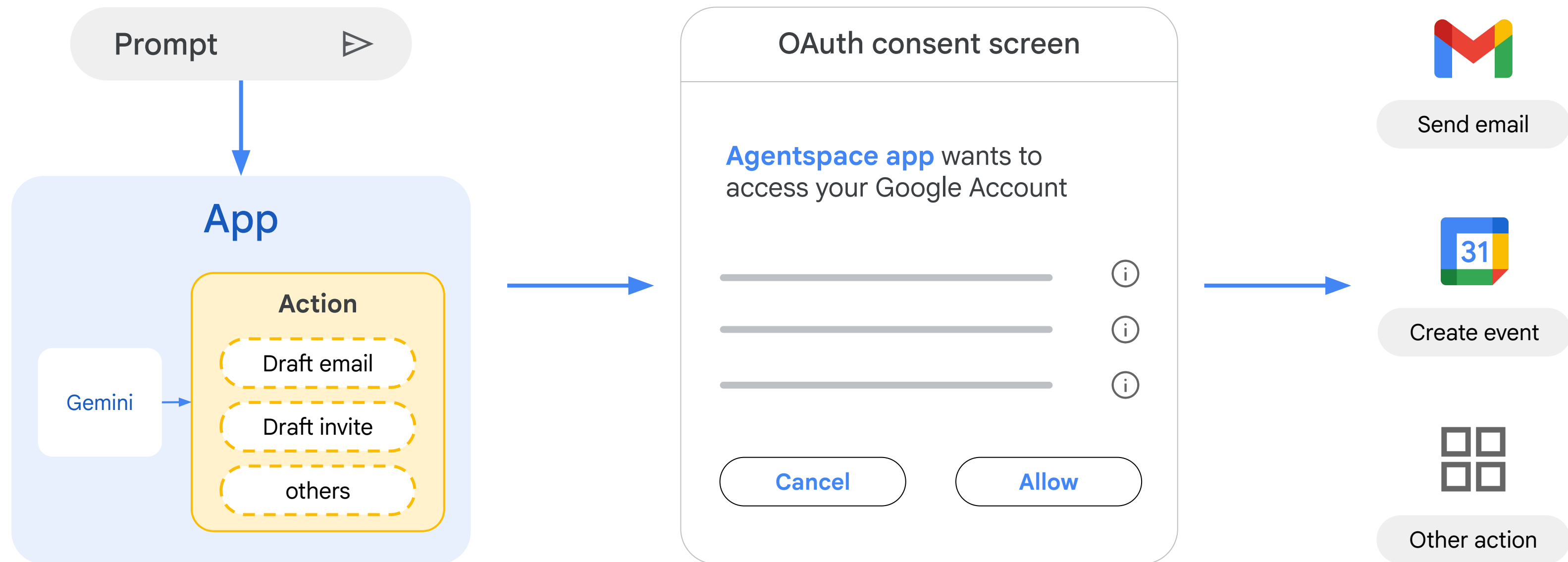
M Gmail

Subject*
Sales Analysis Report - High-Level Insights

To
beverly@cymbalshops.com

Actions connect to external services to act on the user's behalf

Prompt

App

Gemini

Action

Draft email

Draft invite

others

OAuth consent screen

Agentspace app wants to access your Google Account

Cancel   **Allow**

Send email

Create event

Other action

There are first-party and third-party action types available

First-party actions

Gmail

Calendar

+

Google OAuth consent screen

Third-party actions

Jira   Workday

Outlook email, calendar

+

OAuth 2.0 (3LO) app setup

Google Cloud
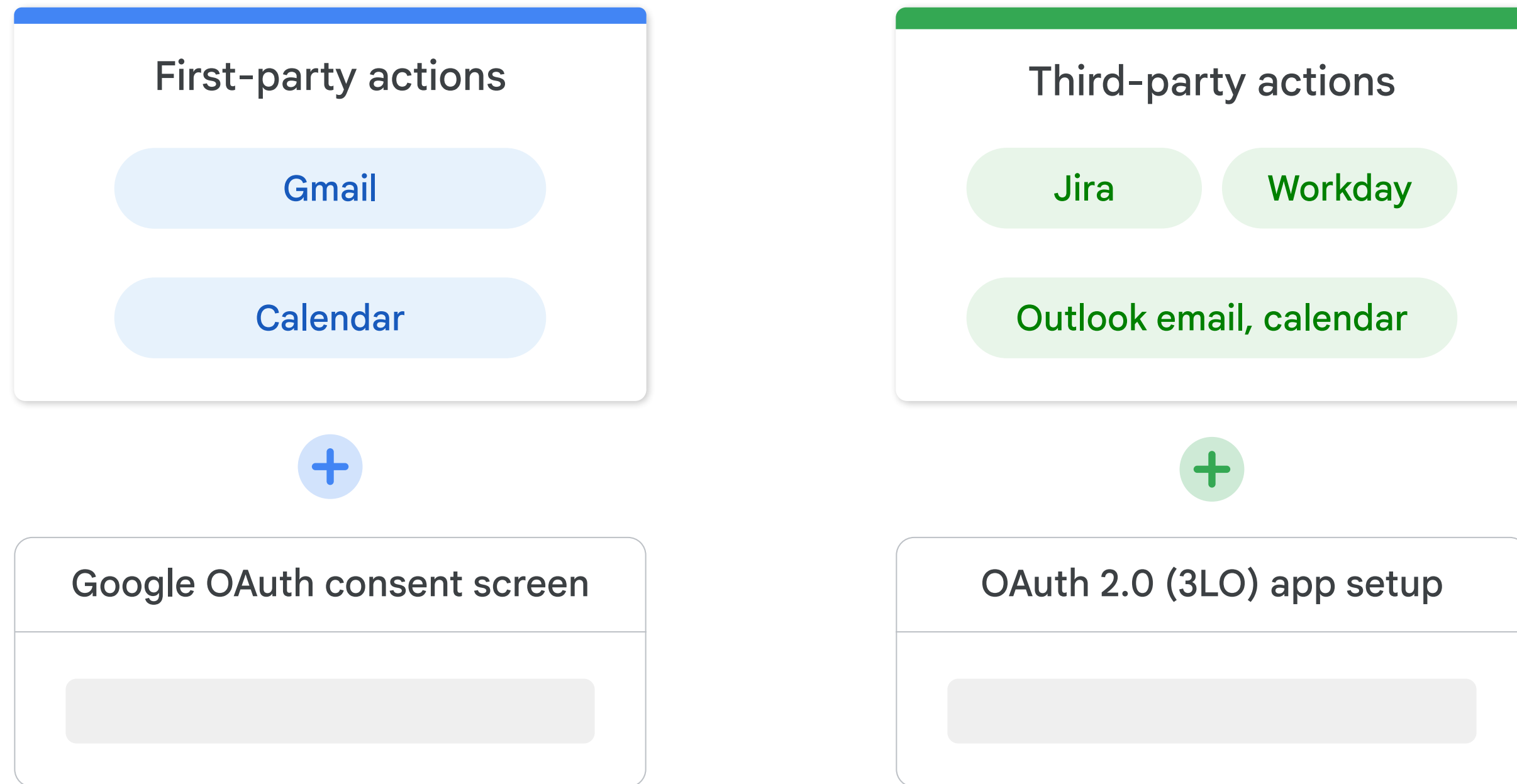
Create an OAuth consent screen and client to enable first-party actions

OAuth consent screen

<App name> wants to access your Google Account

Cancel | Allow

App name | Audience

OAuth client

Application type: Web app

+

Authorized redirect URI

OAuth Client ID

OAuth Client Secret

Action

Action source

+

Action types

+

OAuth Client ID

OAuth Client Secret
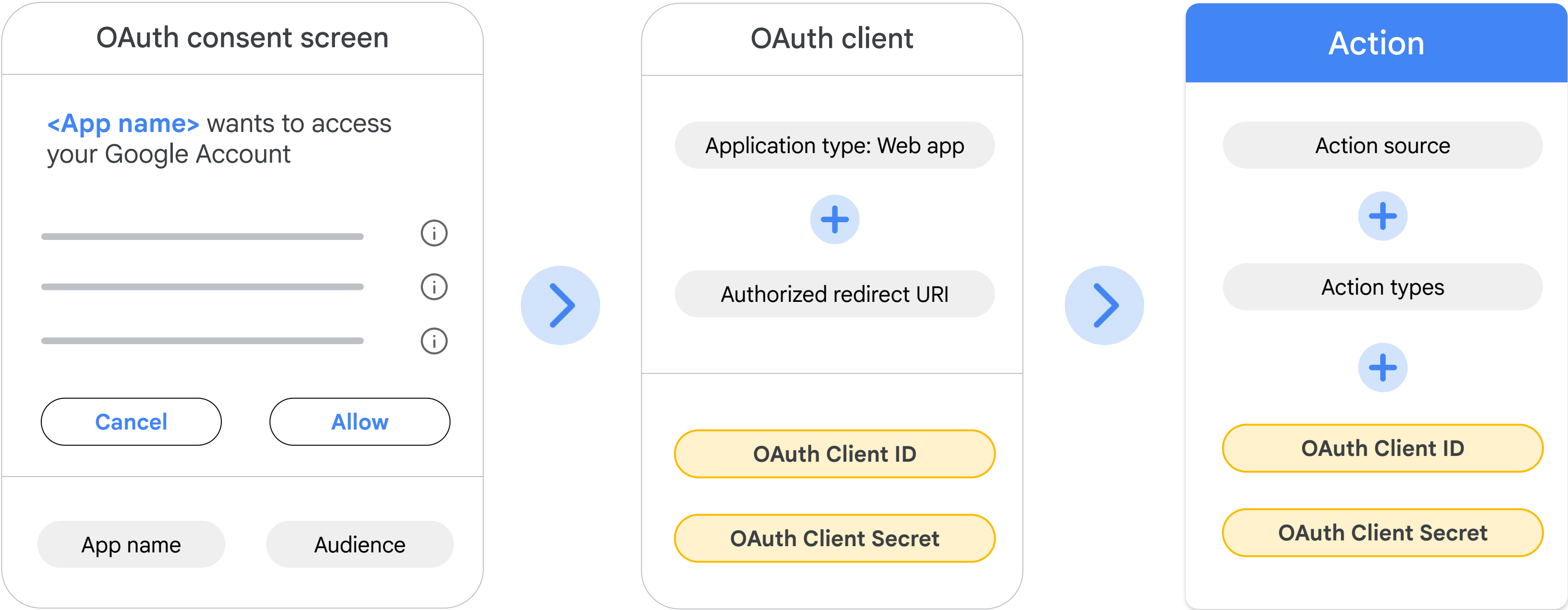
Quiz & What's next

Quiz | Question 1

Question

Which of the following best describes a key value proposition of Google Agentspace for an organization?

A.   It primarily functions as a tool for managing employee calendars and scheduling meetings.

B.   It serves as a platform for building complex custom software applications without requiring any coding.

C.   It helps bring enterprise data together to extract insights quickly, addressing the problem of information discovery across siloed data sources.

D.   It mainly focuses on providing advanced data storage solutions for large datasets.

Quiz | Question 1

Question

Which of the following best describes a key value proposition of Google Agentspace for an organization?

A. It primarily functions as a tool for managing employee calendars and scheduling meetings.

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C. It helps bring enterprise data together to extract insights quickly, addressing the problem of information discovery across siloed data sources. ✅

D. It mainly focuses on providing advanced data storage solutions for large datasets.

Google Cloud

Quiz | Question 2

Question

Which of the following best describes a primary function that users can perform using Google Agentspace?

A.   Primarily manage and analyze structured data from databases.

B.   Configure and monitor role-based access controls.

C.   Automate software deployment pipelines.

D.   Find documents, get answers to questions, and brainstorm ideas.

Quiz | Question 2

Question

Which of the following best describes a primary function that users can perform using Google Agentspace?

A.   Primarily manage and analyze structured data from databases.

B.   Configure and monitor role-based access controls.

C.   Automate software deployment pipelines.

D.   Find documents, get answers to questions, and brainstorm ideas. ✅

Quiz | Question 3

Question

True or false: Agentspace apps are built using Google Vertex AI and require extensive coding knowledge.

A.   True

B.   False

Google Cloud

Quiz | Question 3

Question

True or false: Agentspace apps are built using Google Vertex AI and require extensive coding knowledge.

A. True

B. False ✓ ✅

Quiz | Question 4

Question

What is the primary purpose of actions in Google Agentspace?

A. To connect to external services to perform tasks like sending emails or creating calendar events.

B. To customize the user interface of the Agentspace homepage for desktop and mobile devices.

C. To analyze the usage of the Agentspace homepage by tracking search queries and click-through rates.

D. To build data stores by connecting to various data sources like Cloud Storage and Google Workspace.

Quiz | Question 4

Question

What is the primary purpose of actions in Google Agentspace?

A. To connect to external services to perform tasks like sending emails or creating calendar events. ✅

B. To customize the user interface of the Agentspace homepage for desktop and mobile devices.

C. To analyze the usage of the Agentspace homepage by tracking search queries and click-through rates.

D. To build data stores by connecting to various data sources like Cloud Storage and Google Workspace.

Learn more about Agentspace and Generative AI on Google Cloud

01   **Do a lab**. Learn how to create an Agentspace Enterprise app with Google Drive and Calendar integrations.

Start the lab on Google Cloud Skills Boost.

02   **Take a course**. Learn how to build Generative AI applications on Google Cloud.

Launch the course on Google Cloud Skills Boost.

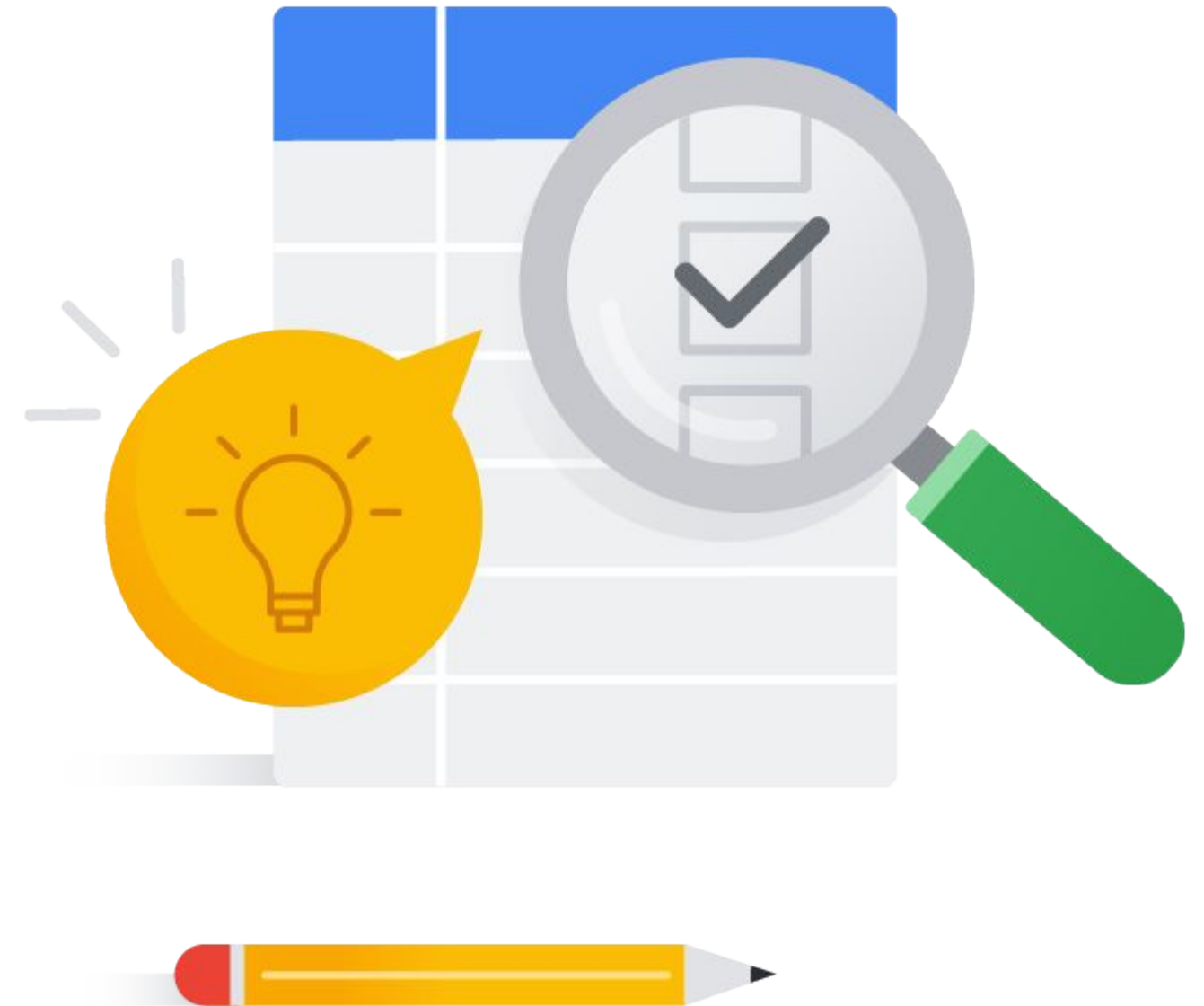**03**   **Check out more no-cost learning**. We provide 1-3h courses for many topics in your respective region.

Check the schedules: APAC | EMEA | NORTHAM

Google Cloud

Lab: Deploy and query Google Agentspace

⏱ 60 min

Learning objectives

- Configure Vertex AI Applications authentication.

- Create a Google Drive data store.

- Create an Agentspace app.

- Use the AI assistant to find, summarize, and extract content from a data store.

- Create a calendar invite with an assistant action.

Google Cloud

Google Cloud