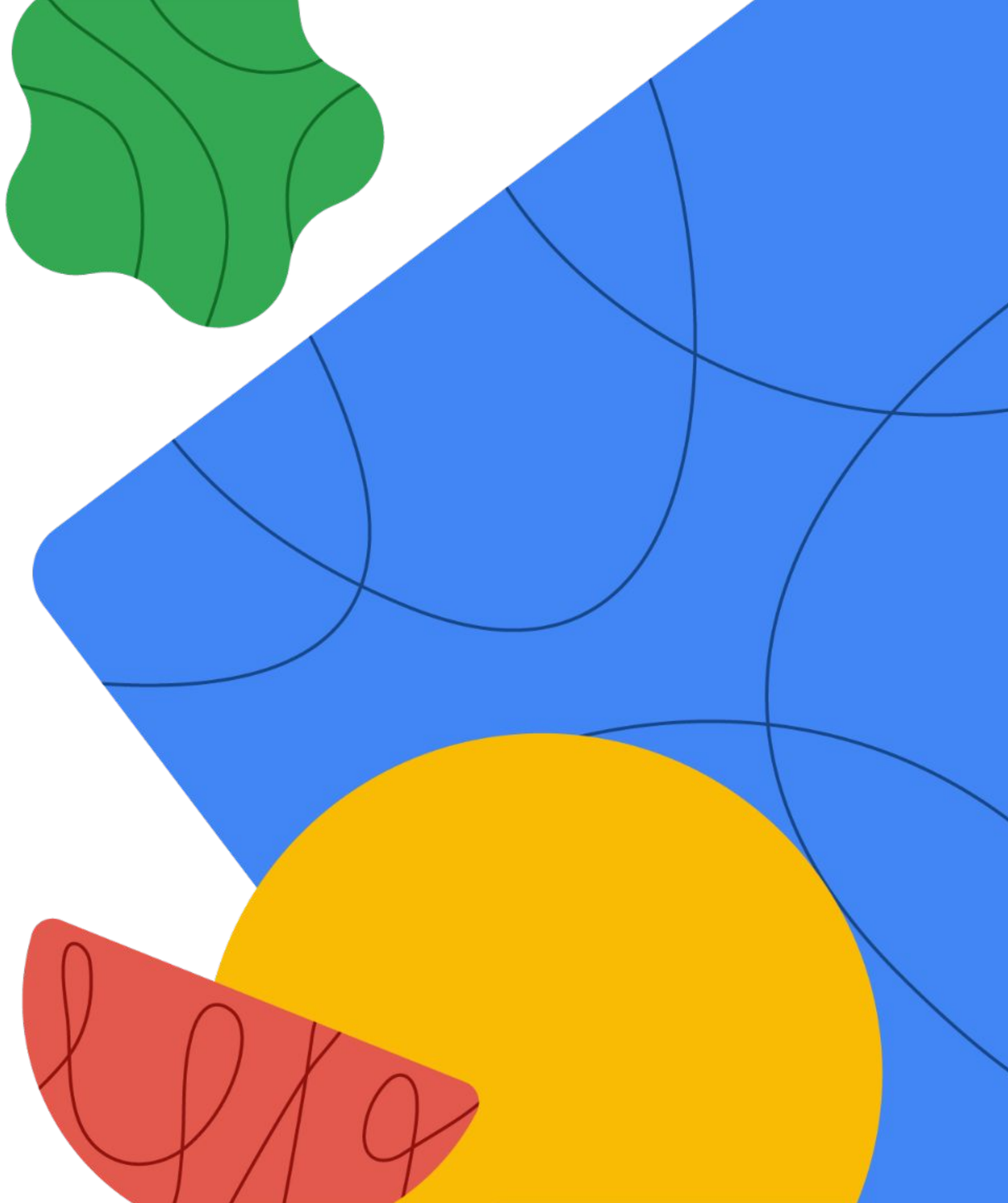
Google Cloud

Generative AI Leader



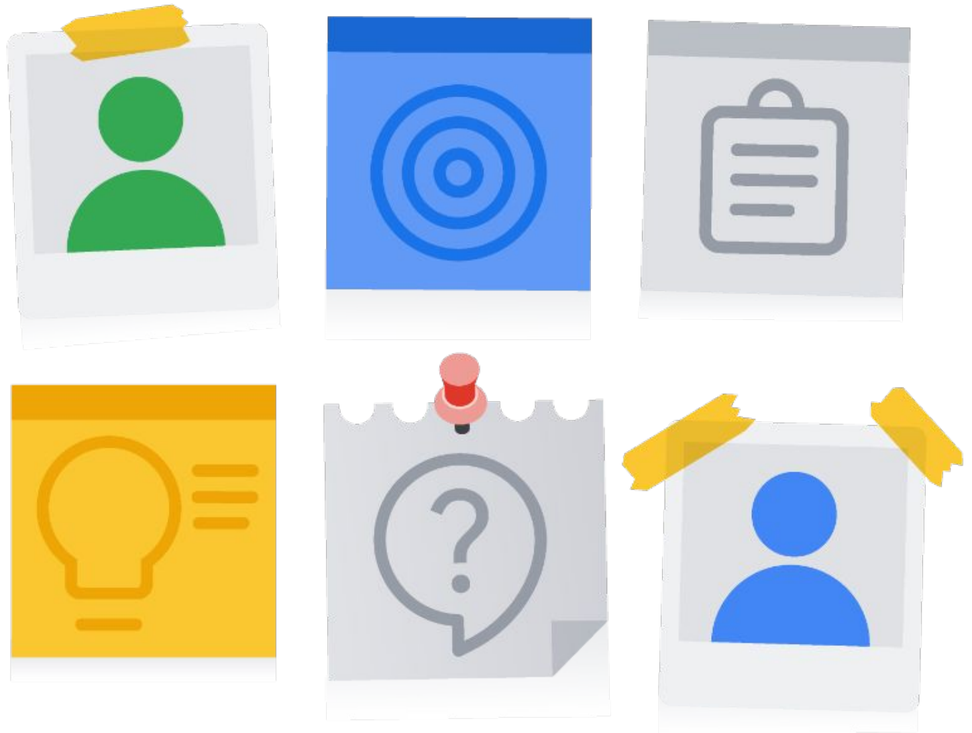
Instructor full name

Instructor role
Instructor organization

Introductions

Tell us about you

- Background
- Position
- Organization



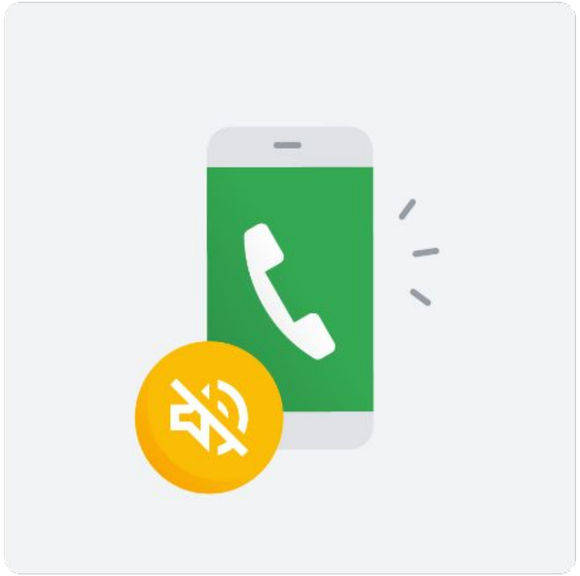
Course format

Presentations and demos

Practice activities and discussions

Quizzes

Etiquette

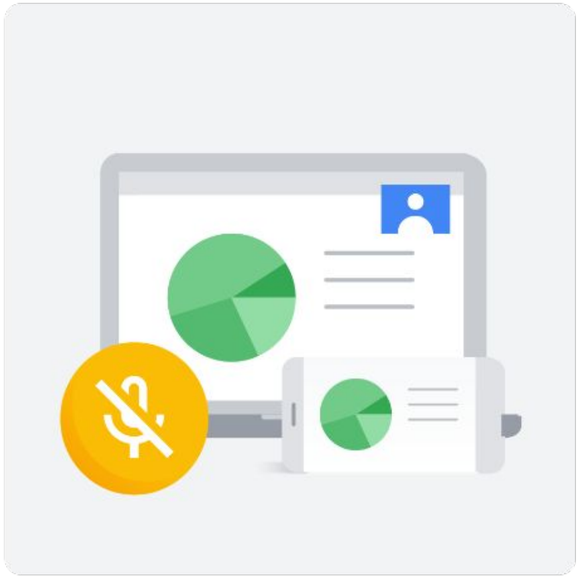


No calls

No recording

Ask questions

Etiquette



Mute microphone

No recording

Ask questions

Course Objectives

01 Discover the business value and impact of Gen AI on your organization.

02 Define core gen AI concepts.

03 Identify the core layers of the gen AI landscape.

04 Explain how to combine components of gen AI agents to build powerful solutions.

05 Identify Google Cloud's gen AI implementation and scaling solutions.

Generative AI Leader learning path

01

Gen AI: Beyond the chatbot

02

Gen AI: Unlock foundational concepts

03

Gen AI: Navigate the landscape

04

Gen AI apps: Transform your work

05

Gen AI agents: Transform your organization

Discussion: What is your why?

5 min | Group

What is your *why* for embracing generative AI?

- Why do you think so many organizations are implementing generative AI solutions?
- What is your current approach and implementation?
- What is your goal for generative AI?

Generative AI Leader certification exam

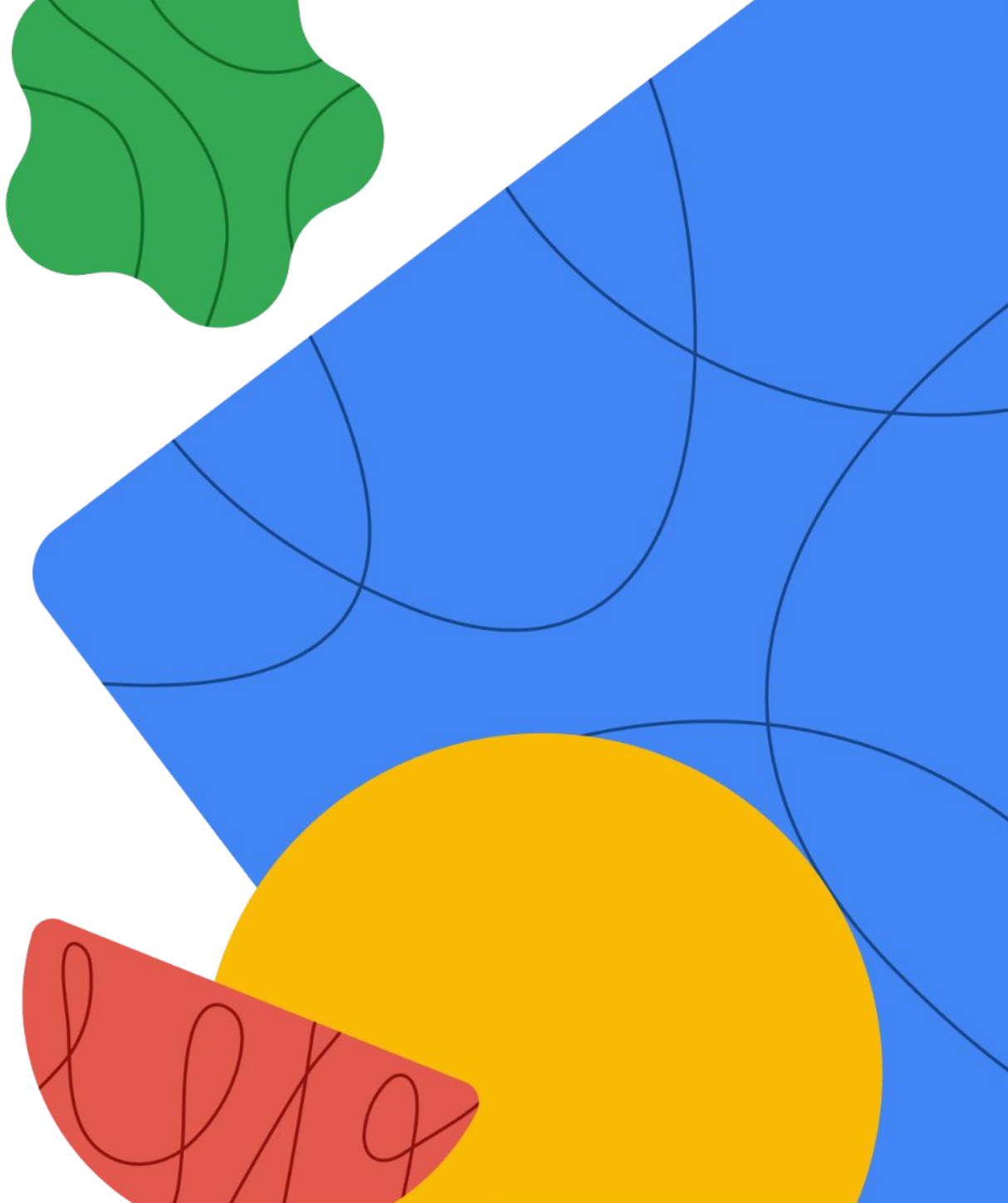
A Google Cloud Certified **Generative AI Leader** is a visionary professional with comprehensive business knowledge of how generative AI can transform businesses using Google Cloud's gen AI products and services. They understand Google's AI-first approach and can drive innovative and responsible AI adoption by identifying use cases, fostering collaboration across technical and non-technical teams, and leveraging Google Cloud's enterprise offerings.

- Length: 90 minutes
- Exam format: 50-60 multiple choice questions
- For more info visit: cloud.google.com/learn/certification/generative-ai-leader

The Future of AI: Google DeepMind's Expert on Gen AI

Google Cloud

Module 01
Gen AI: Beyond the chatbot



Module objectives

01 Describe how gen AI transforms business functions and industries.

02 Explore how gen AI creates value through foundation models and prompts.

03 Identify Google Cloud's unique strengths in gen AI.

04 Explain Google Cloud's steps to implement successful gen AI solutions.

Agenda

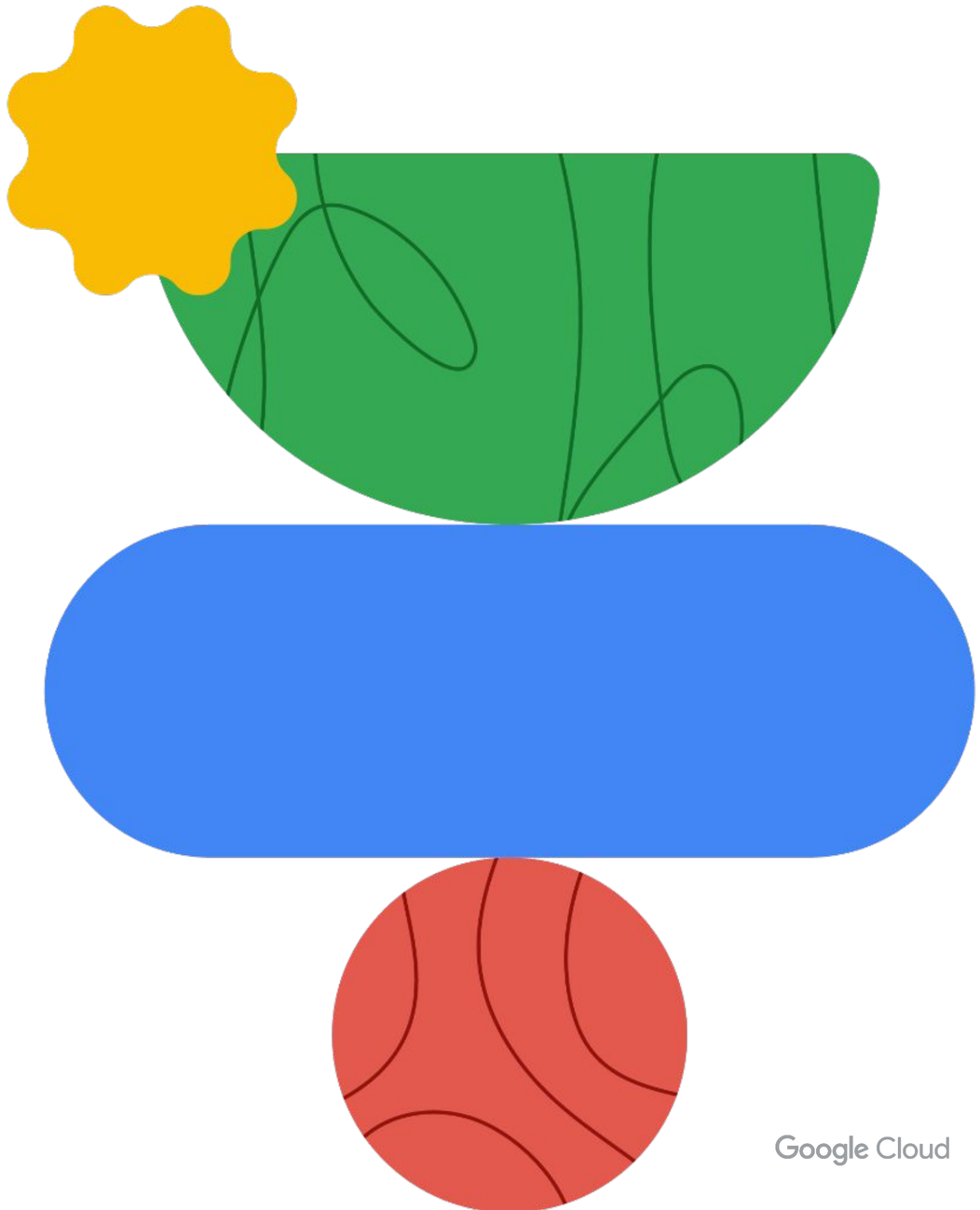
01 Introduction to gen AI for businesses

02 Introduction to gen AI foundations

03 Gen AI strategy

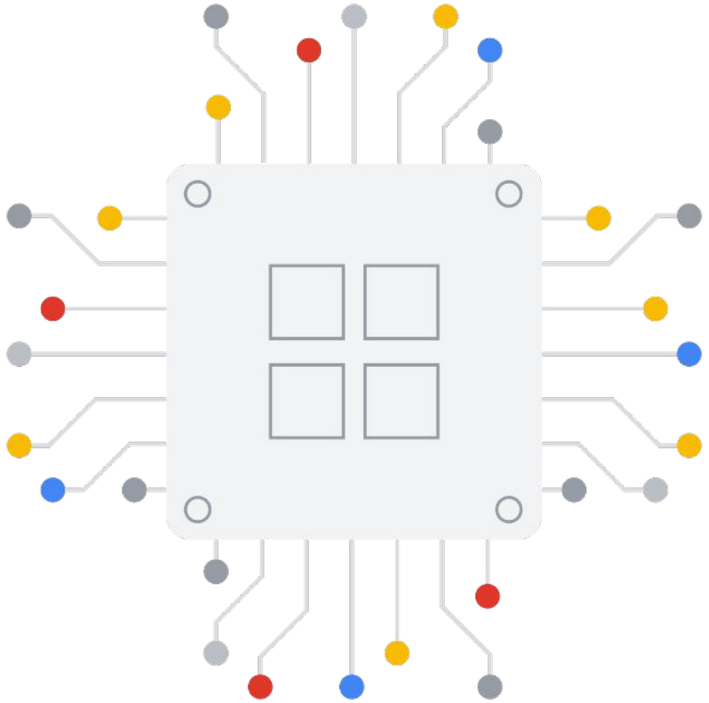
Introduction to gen AI for businesses

What is generative AI?



What is artificial intelligence (AI)?

- It is when computer systems perform tasks that typically require human intelligence.
- It is achieved through machine learning (ML), where systems learn from data to solve specific problems.
- It is powered by an AI model, which takes an input and produces an output based on its training.



Generative AI represents a specific subset of AI that **focuses on creating content** rather than simply analyzing or responding to existing data.

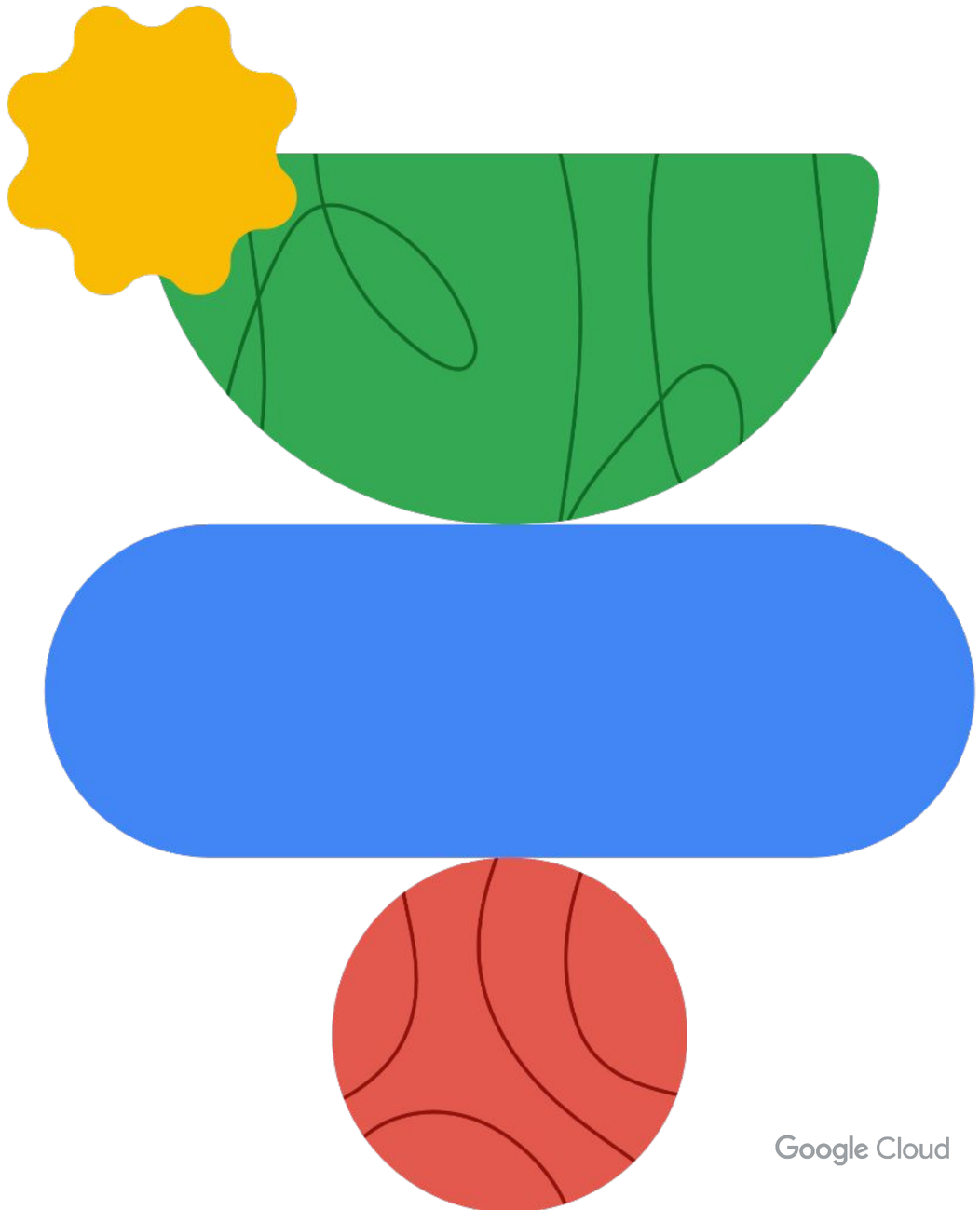
What is generative AI?

- Gen AI is a type of artificial intelligence that helps users create new content and ideas.
- It's a technology that can be integrated into different applications. (It is not an application itself.)

Example: Gemini

- Gemini app: Google's generative AI chatbot, an app
- Gemini: One of Google's gen AI models used to build applications
  - Gemini app, Google Workspace with Gemini, Gemini in Looker, Gemini in BigQuery
  - Gemini used with services in Google Cloud to automate and troubleshoot

Using generative AI

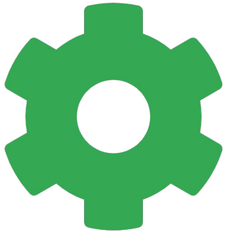


Four primary ways to use gen AI

Create

Summarize

Discover



Automate

Four primary ways to use gen AI

Create | Summarize | Discover | Automate

You can:

- Write articles, emails, and social media posts.
- Create images, videos, and audio.
- Generate code in various programming languages.

Four primary ways to use gen AI

Create | **Summarize** | Discover | Automate

You can:

- Summarize long documents or articles.
- Create concise reports from complex data.
- Extract key takeaways from meetings or presentations.

Four primary ways to use gen AI

Create | Summarize | **Discover** | Automate

You can:

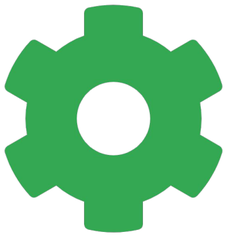
- Uncover hidden patterns and insights in data.
- Search for resources or documents.
- Monitor real-time events.

Four primary ways to use gen AI

Create

Summarize

Discover

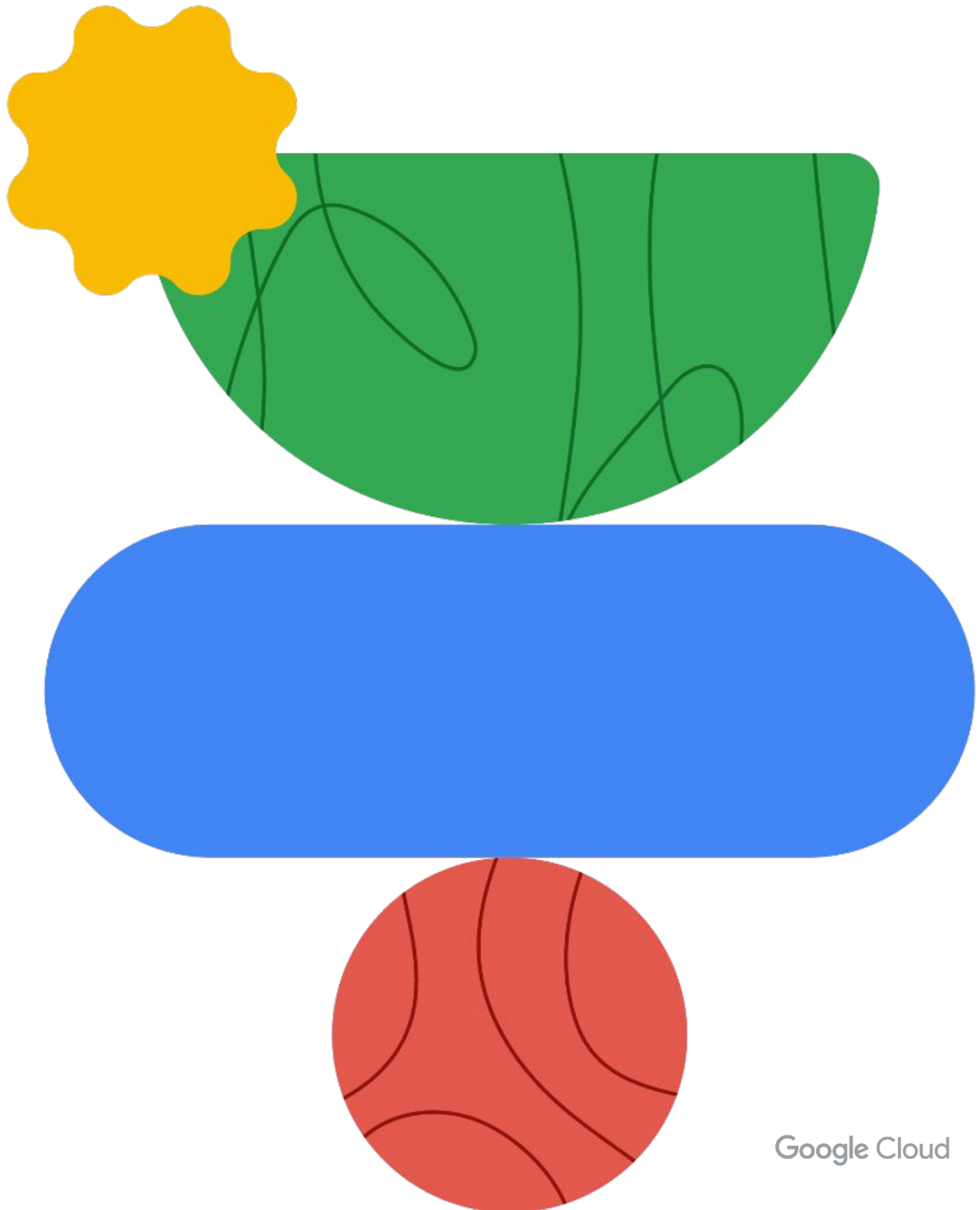


Automate

You can:

- Automate format conversation.
- Automate documentation.
- Automate notifications and alarms.

Multimodal generative AI



Multimodal generative AI enables the **simultaneous** processing and creation of content across **multiple types of data or "modalities."**

Multimodal gen AI use cases

- Text and image
- Text and a PDF file
- Text, video, and data
- Sensor data and video

Multimodal gen AI use cases

- Text and image
- Text and a PDF file
- Text, video, and data
- Sensor data and video

A marketing team uses gen AI to create a series of social media posts (text) with accompanying images that align with their brand guidelines, including captions, hashtags, and optimal posting times.

Multimodal gen AI use cases

- Text and image
- Text and a PDF file
- Text, video, and data
- Sensor data and video

A legal team uses gen AI to summarize a lengthy legal contract (PDF) and answer specific questions about its clauses and implications, identifying potential risks and suggesting alternative language.

Multimodal gen AI use cases

- Text and image
- Text and a PDF file
- Text, video, and data
- Sensor data and video

A market research firm uses gen AI to analyze customer sentiment in video testimonials, the spoken words (text), and survey data collected alongside the video. This helps identify key themes, pain points, and overall customer satisfaction.

Multimodal gen AI use cases

- Text and image
- Text and a PDF file
- Text, video, and data
- Sensor data and video

A manufacturing team enhances worker safety with gen AI. The AI analyzes real-time camera feeds and sensor data to identify potential hazards, such as spills or equipment malfunctions, and immediately alerts workers to the danger.

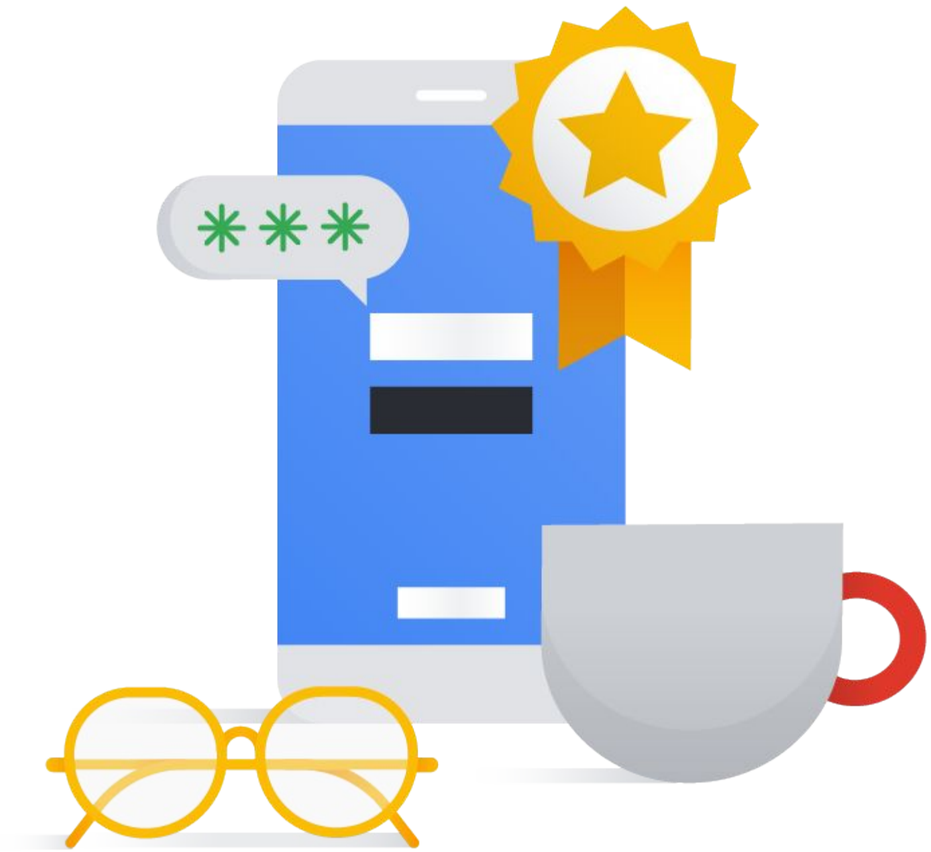
Use case: Multimodal gen AI in the automotive sector

Vertex AI

Vertex AI is the key to creating and deploying custom generative AI solutions for your business.

- Vertex AI is Google Cloud's unified AI development platform.
- It empowers you to build, train, and deploy ML models and AI applications.
- It gives you access to Google's large generative AI models through Model Garden.
- It allows you to tune Google's LLMs to meet your needs and deploy them for use in your AI-powered applications.

Now let's do a short quiz to check your knowledge.



Quiz | Question 01

Question

Which of the following defines generative AI?

A. It’s a type of artificial intelligence that analyzes existing data to identify patterns and make predictions.

B. It’s a type of artificial intelligence that can create new content, including images, text, and music.

C. It’s a type of artificial intelligence that focuses on automating repetitive tasks and improving efficiency.

D. It’s a specific application, like a chatbot, that utilizes AI technology.

Quiz | Question 01

Answer

Which of the following defines generative AI?

A. It’s a type of artificial intelligence that analyzes existing data to identify patterns and make predictions.

B. It’s a type of artificial intelligence that can create new content, including images, text, and music.

C. It’s a type of artificial intelligence that focuses on automating repetitive tasks and improving efficiency.

D. It’s a specific application, like a chatbot, that utilizes AI technology.

Quiz | Question 02

Question

A CEO is hesitant to invest in generative AI because they believe it's just a technology for building chatbots. Which of the following examples demonstrate that generative AI can offer their business much more?

A. Counting the number of website visitors and their locations.

B. Scheduling meetings and managing calendars to help employees improve their time management.

C. Creating photorealistic images of new product prototypes based on text descriptions.

D. Providing generic responses to all customer inquiries, regardless of the specific issue.

Quiz | Question 02

Answer

A CEO is hesitant to invest in generative AI because they believe it's just a technology for building chatbots. Which of the following examples demonstrate that generative AI can offer their business much more?

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C. Creating photorealistic images of new product prototypes based on text descriptions.

D. Providing generic responses to all customer inquiries, regardless of the specific issue.

Quiz | Question 03

Question

Which of the following describes a multimodal gen AI application?

A. Using Gemini in Gmail to write an email.

B. Using Imagen to create an image for a website.

C. Using NotebookLM Business to summarize a financial report.

D. Using gen AI to analyze customer sentiment in video testimonials and survey data.

Quiz | Question 03

Answer

Which of the following describes a multimodal gen AI application?

A. Using Gemini in Gmail to write an email.

B. Using Imagen to create an image for a website.

C. Using NotebookLM Business to summarize a financial report.

D. Using gen AI to analyze customer sentiment in video testimonials and survey data.

Discussion: Feeling inspired

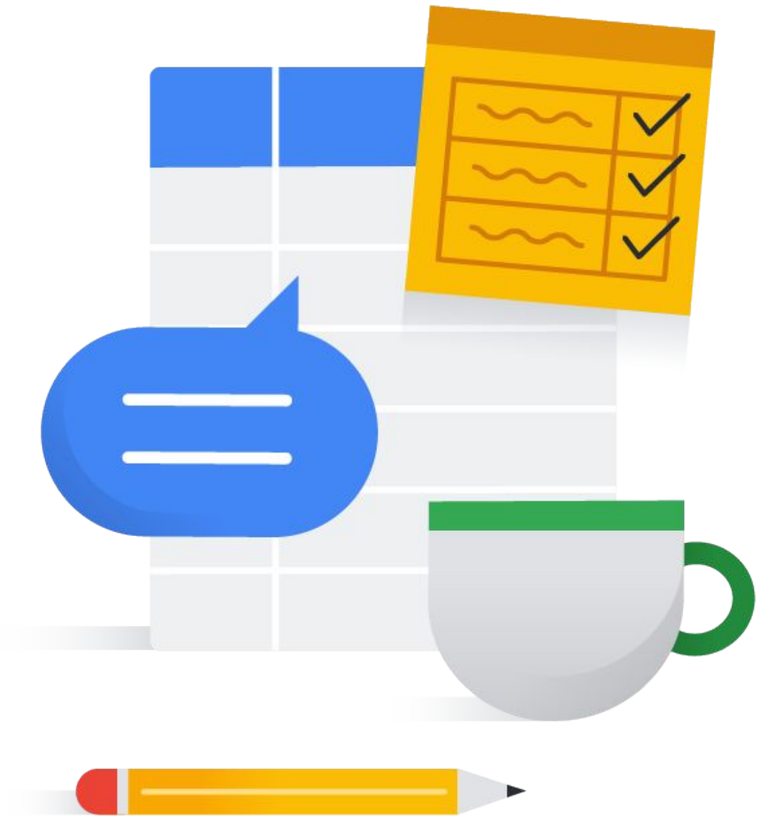
5 min | Group

Feeling inspired?

Based on the examples of how gen AI can be used and the use cases you've seen so far, have you identified any use cases for your organization yet?

Key takeaways

- Gen AI drives efficiency, creativity, and cost reduction.
- Understanding its operation enables organizational transformation through informed adoption.



Agenda

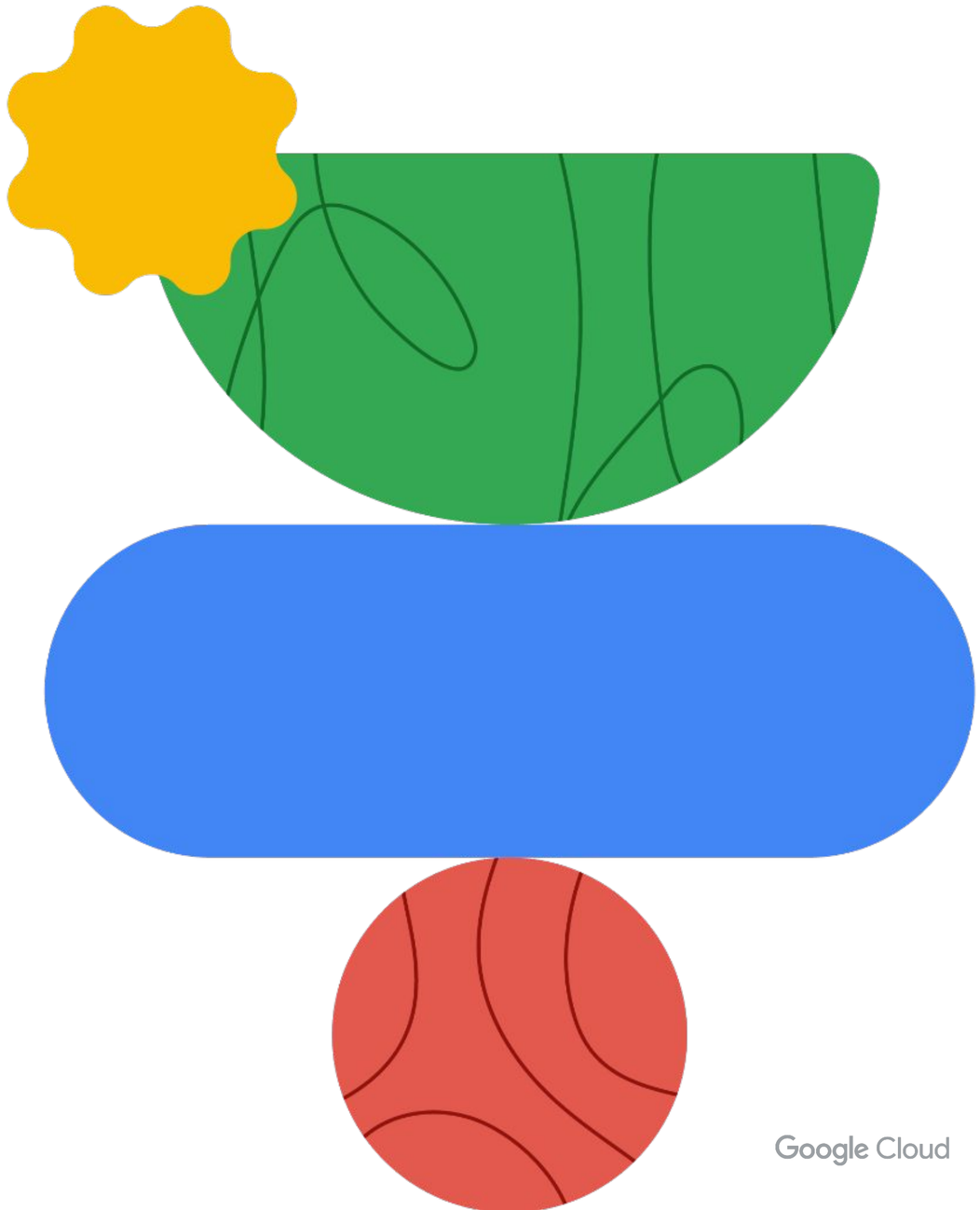
01 Introduction to gen AI for businesses

02 Introduction to gen AI foundations

03 Gen AI strategy

Introduction to gen AI foundations

Foundation models



Traditional versus foundation models

Traditional AI models

Trained for a single purpose using specific data.

Example: Filtering spam emails from your inbox.

Foundation AI models

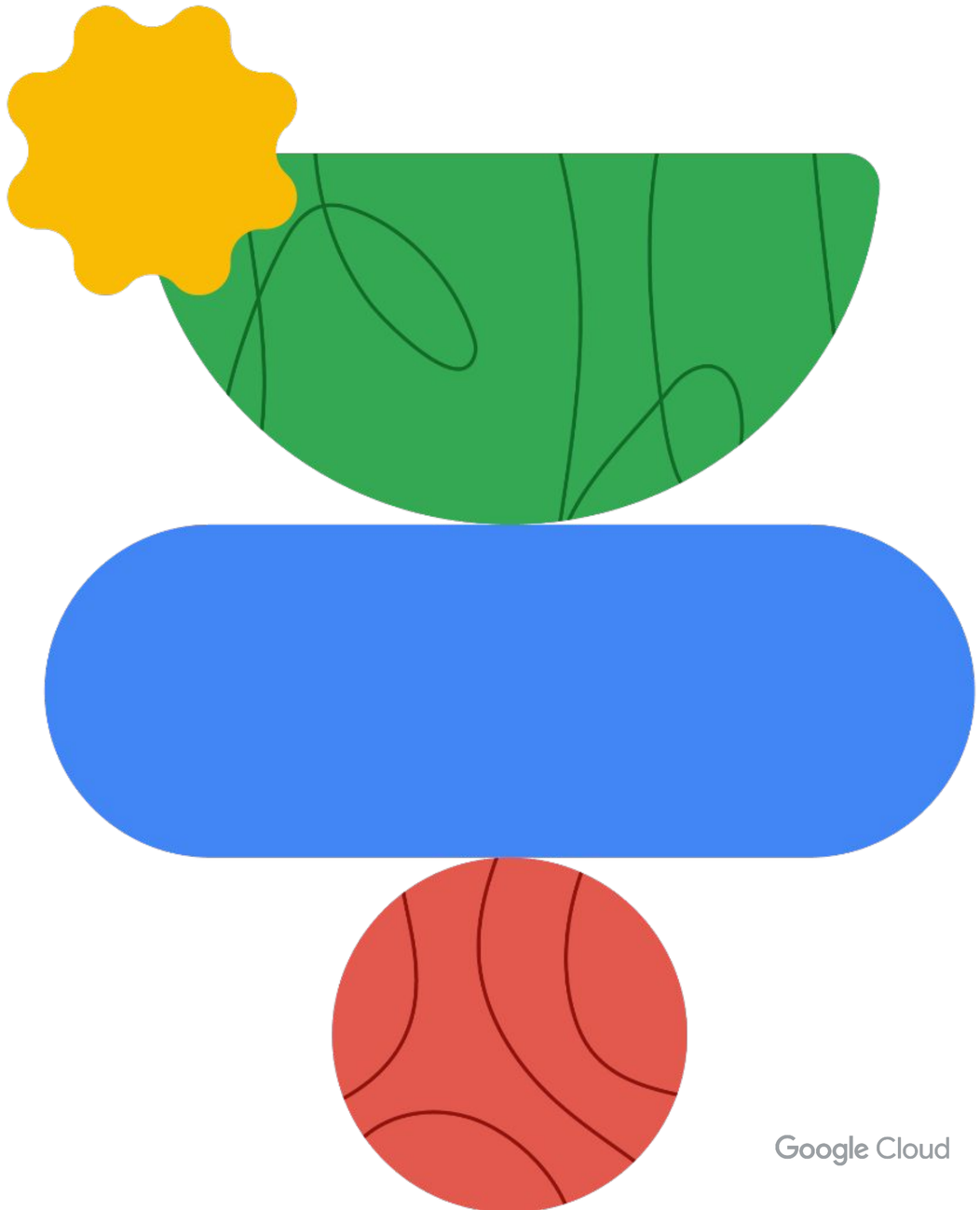
Trained on massive amounts of diverse data (text, images, and code), enabling them to adapt to many different tasks.

Examples: Large language models (LLMs), Imagen, Chirp.

Foundation models

- Develop a deep understanding of the data.
- Adapt to a wide range of downstream tasks.
- Streamline processes.
- Automate tasks.
- Unlock new possibilities across various business functions.

Key features of foundation models



Key features of foundation models

Trained on diverse data

They are trained on a wide variety of data, allowing them to learn general patterns and relationships that can be applied to different tasks.

Flexible

One AI model can support a wide range of use cases.

Adaptable

They can be specialized for particular domains or use cases through additional, targeted training.

Examples of foundation models

Gemini

They are trained on a massive dataset of text, images, code, audio, video, etc.

Multimodal training allows them to perform tasks across various domains.

Imagen

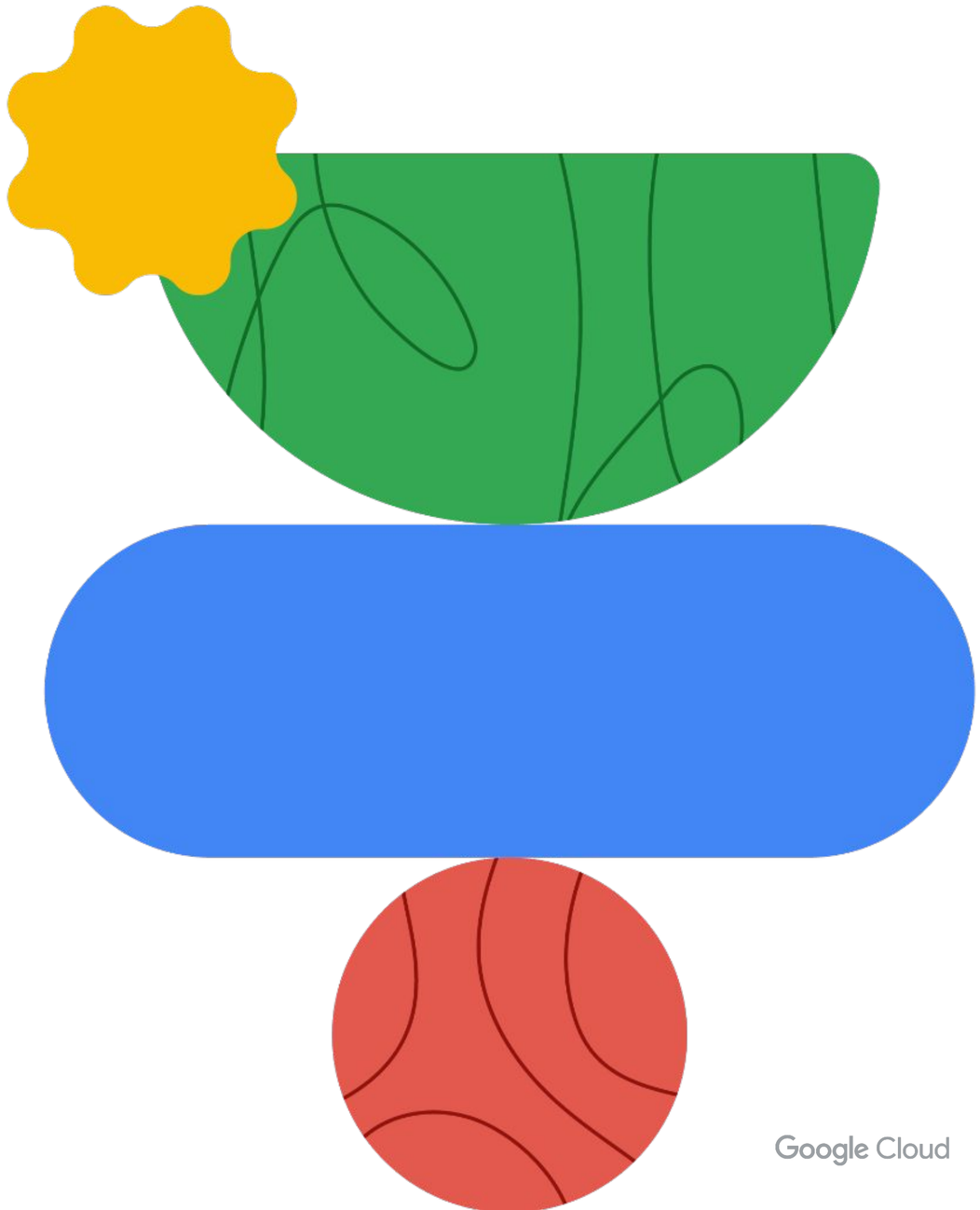
Trained on a massive dataset of images and text descriptions, they generate high-quality images from text descriptions, edit, and understand image content.

Chirp

Trained on a large dataset of audio in various languages, they are designed for speech recognition.

Use case: Imagen in action at PUMA

Prompting models



How to use foundation models for gen AI

All AI models have inputs or prompts

- Some AI models have strict requirements on the type of inputs they can handle.
- Foundation models are usually much more flexible in what you can prompt.
- Multimodal foundation models in particular can take in a much broader set of inputs.

Prompting inputs and outputs

Prompting is one of the most important skills in maximizing the value of gen AI models and tools.

Prompt (input)	Output
Question	The answer to the question
Request for an image based on a text description	The image
Request a summary of a file	The file summary
Sample code with errors	Corrected code with no errors

Welcome to the Gemini app

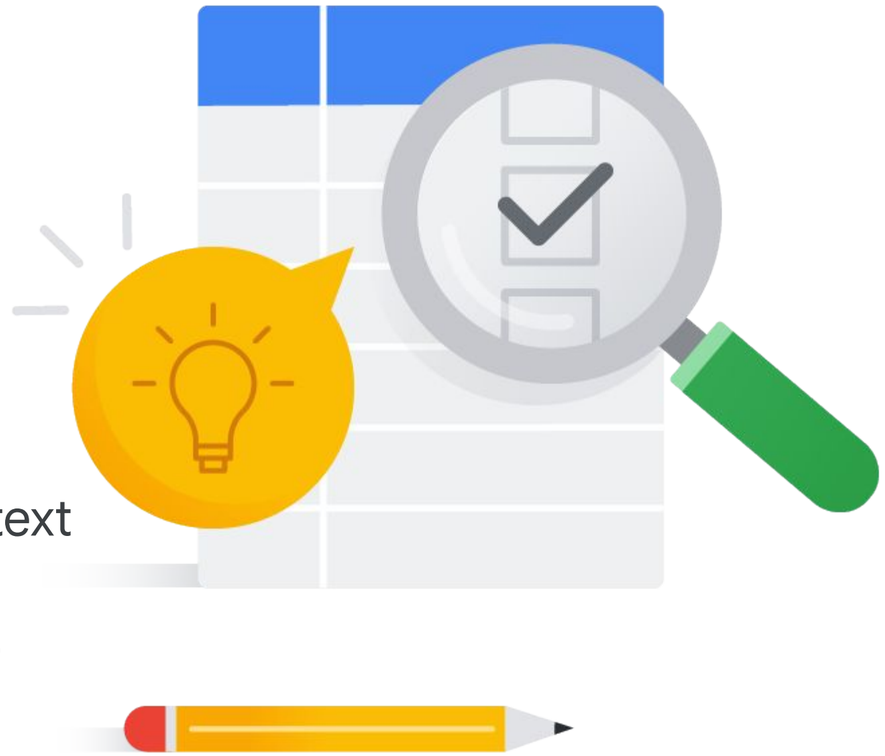
Try it: Hands-on with the Gemini app

10 min

Open the Gemini app: gemini.google.com

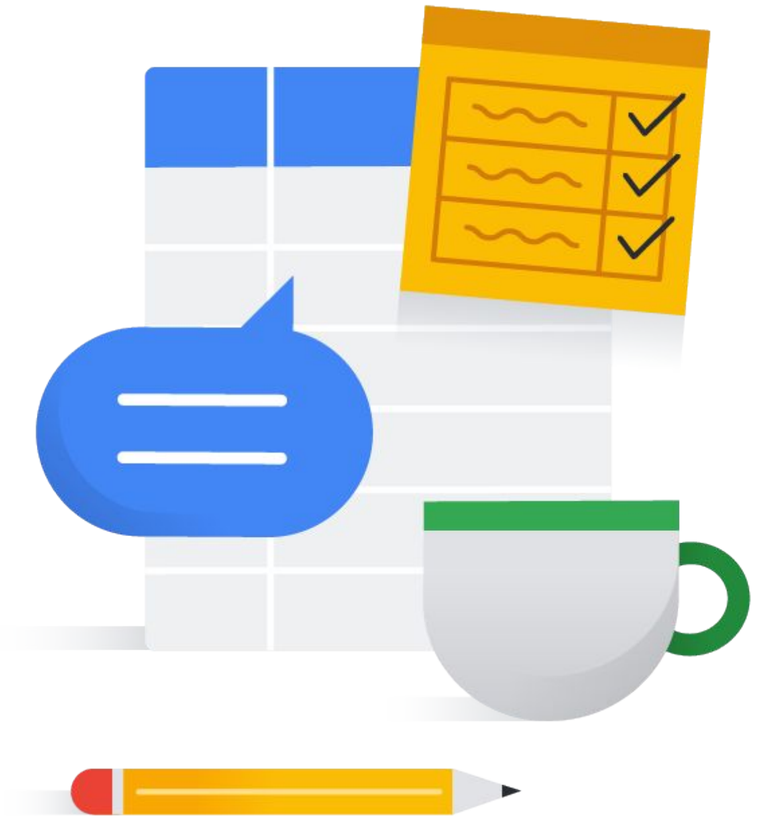
Now, try your own prompts:

1. **Write:** Ask Gemini to write text for a new product for your website.
2. **Create:** Ask Gemini to generate an image to pair with the text for your new product.
3. **Summarize:** Ask Gemini to summarize a long document or email you have to read for work (try attaching a file).
4. **Discover:** Ask Gemini to research a topic for you.



Key takeaways

- Foundation models are large-scale, general-purpose models trained on a massive amount of data.
- They can be adapted to a wide range of downstream tasks.
- They are powerful tools that can be accessed through prompting.
- Prompting is a skill that can be developed with practice and experimentation.



01 Introduction to gen AI for businesses

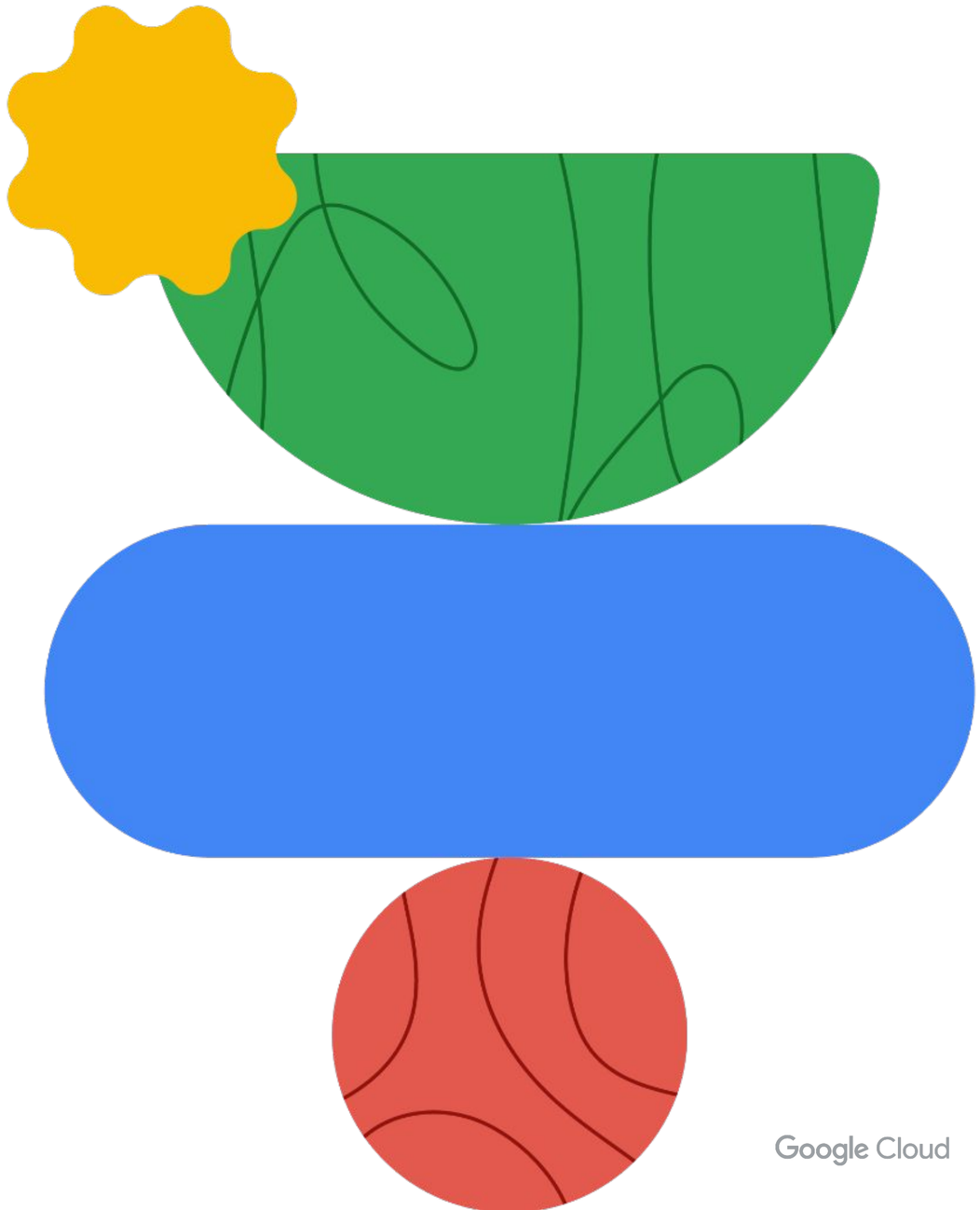
02 Introduction to gen AI foundations

03 Gen AI strategy

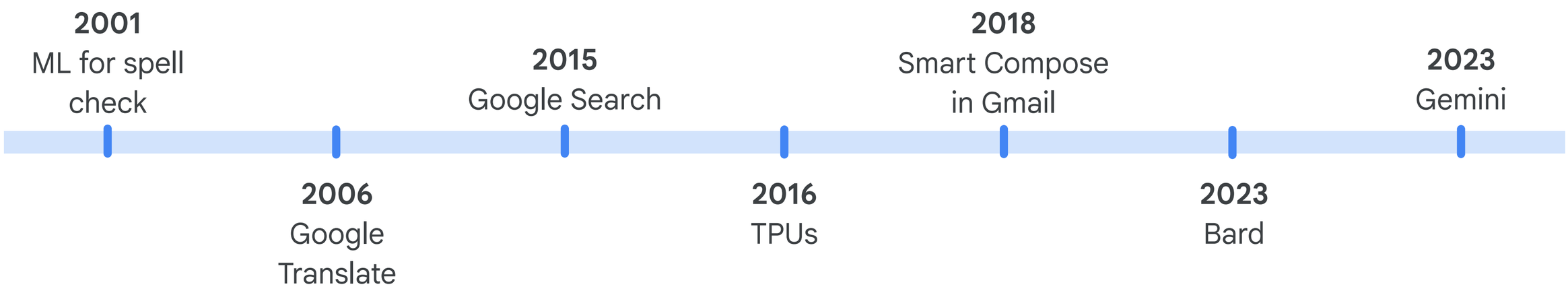
Agenda

Gen AI strategy

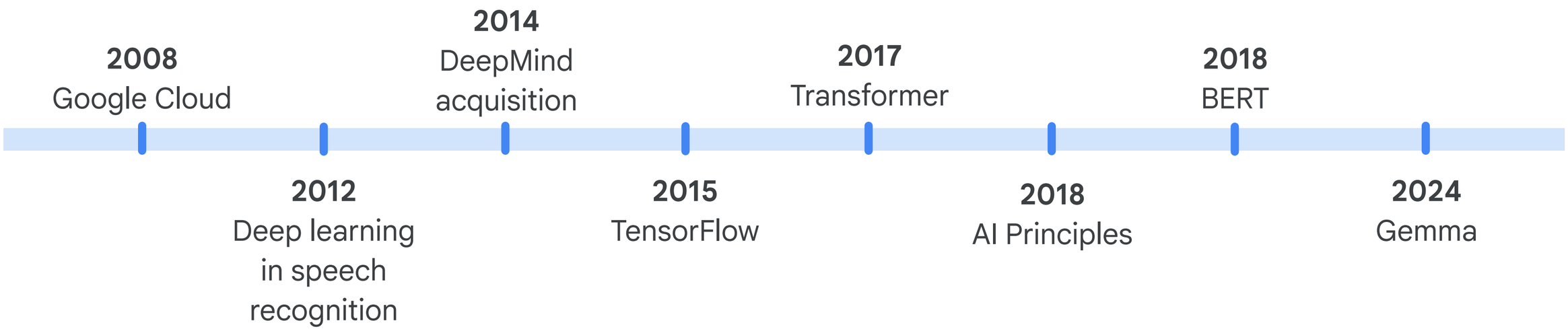
The AI-first company



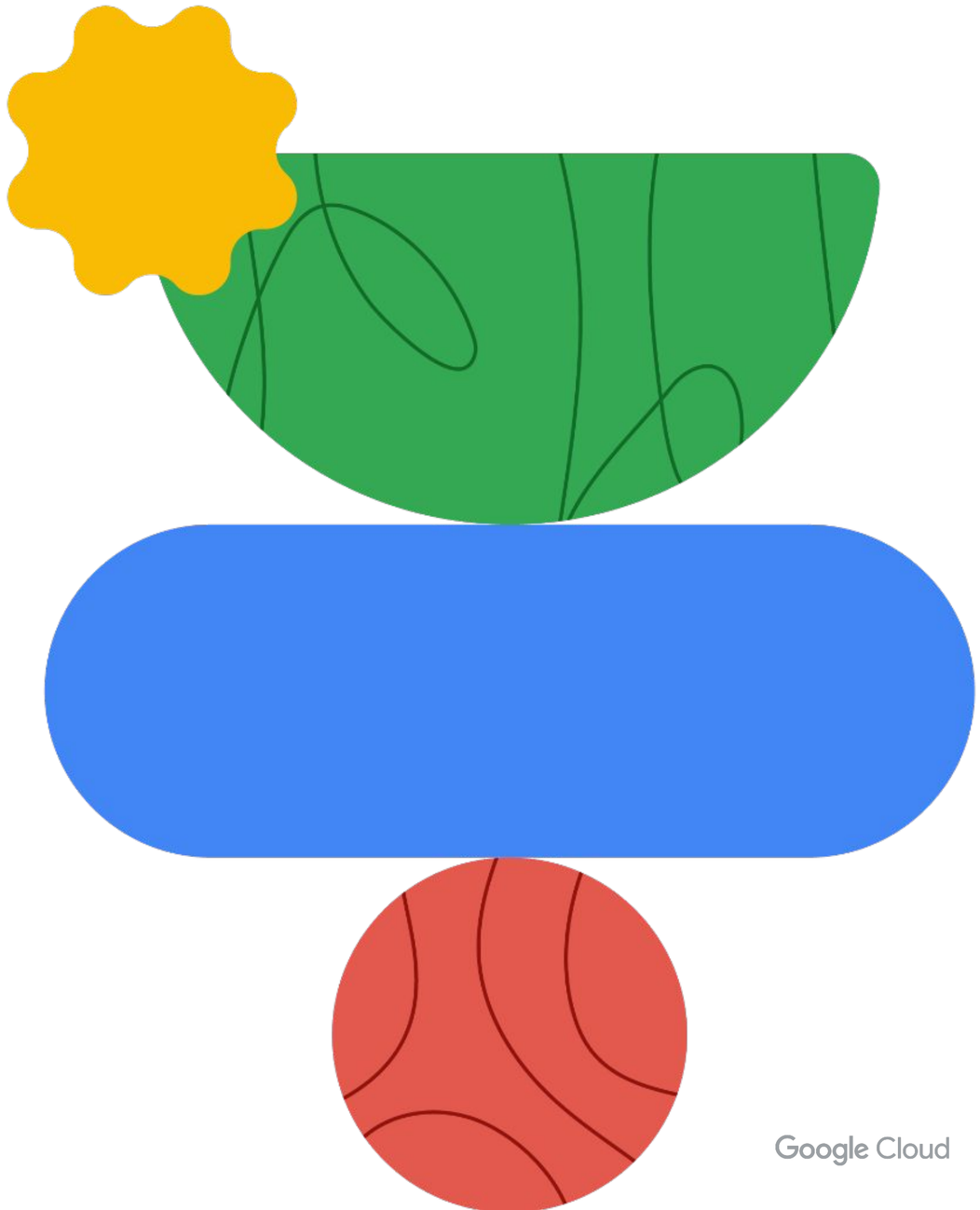
Google innovative AI products



Google research advancements



Leverage Google's gen AI ecosystem



Leverage Google's gen AI ecosystem

- Individual productivity and efficiency
- Continuous improvement
- Responsible AI
- Enterprise ready
- Open approach

- **Google Search:** Find information faster and with more accuracy.
- **Google Workspace with Gemini:** Draft emails in Gmail, generate presentations in Slides, summarize meeting notes in Docs, and automate tasks in Sheets.
- **Gemini App:** Access Gemini directly through a dedicated app.
- **Gemini for Google Cloud:** Build applications and services on Google Cloud.

Leverage Google's gen AI ecosystem

- Individual productivity and efficiency
- Continuous improvement
- Responsible AI
- Enterprise ready
- Open approach

- **Automatic model upgrades:** Benefit from continuous improvements to Gemini models.
- **Access to new features:** Gain early access to new Gemini features and capabilities.
- **Security patches and updates:** Keep your AI systems secure and up-to-date.

Leverage Google’s gen AI ecosystem

- Individual productivity and efficiency
- Continuous improvement
- Responsible AI
- Enterprise ready
- Open approach

- **Secure AI Framework (SAIF):** A comprehensive suite of tools and best practices for building secure AI systems.
- **Mandiant:** Threat intelligence and expertise to protect your AI systems from cyber attacks.
- **AI Principles:** Google's published AI Principles guide the development and deployment of AI technologies.
- **Responsible AI toolkit:** Build AI systems that are fair, unbiased, and socially beneficial.

Leverage Google’s gen AI ecosystem

- Individual productivity and efficiency
- Continuous improvement
- Responsible AI
- Enterprise ready
- Open approach

- **Vertex AI:** A unified platform for building and deploying machine learning models, which provides enterprise-grade security, scalability, and compliance.
- **Google Cloud's security infrastructure:** World-class security infrastructure (data encryption, access control, network security).
- **Compliance certifications:** Google Cloud offers services that support compliance with a wide range of industry standards and regulations.

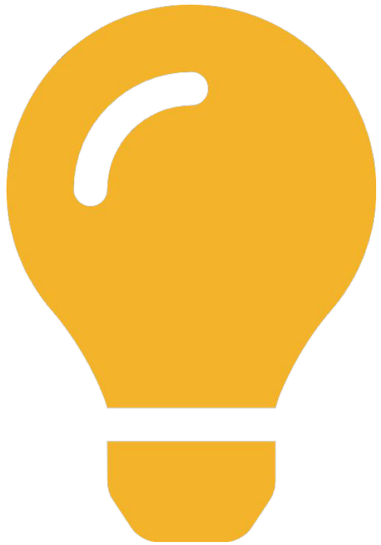
Leverage Google's gen AI ecosystem

- Individual productivity and efficiency
- Continuous improvement
- Responsible AI
- Enterprise ready
- Open approach

- **Contributions to TensorFlow, PyTorch and JAX:** Google contributes to popular open-source machine learning frameworks.
- **Open-source models and datasets:** Google releases pre-trained models and datasets to the research community.
- **Support for open standards:** Google supports open standards for AI interoperability and data exchange.

Embracing the potential of generative AI

- The most successful gen AI implementations prioritize a clear vision and focus on impactful use cases.
- Tracking results is a key element for businesses to successfully implement gen AI and achieve a competitive advantage.

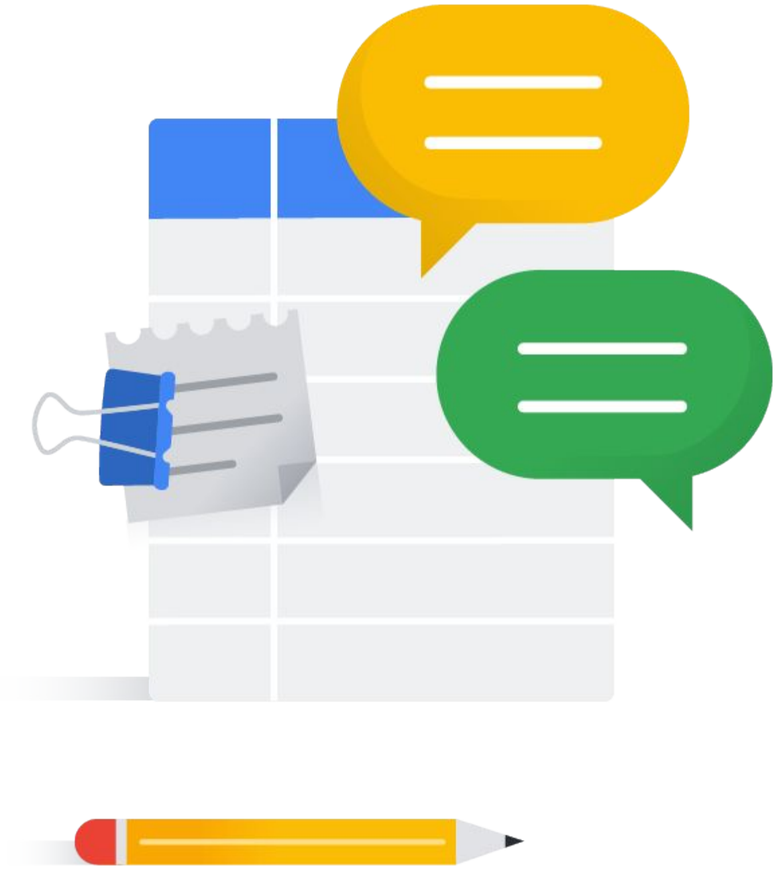


Discussion: Benefits of Google Cloud when building AI solutions

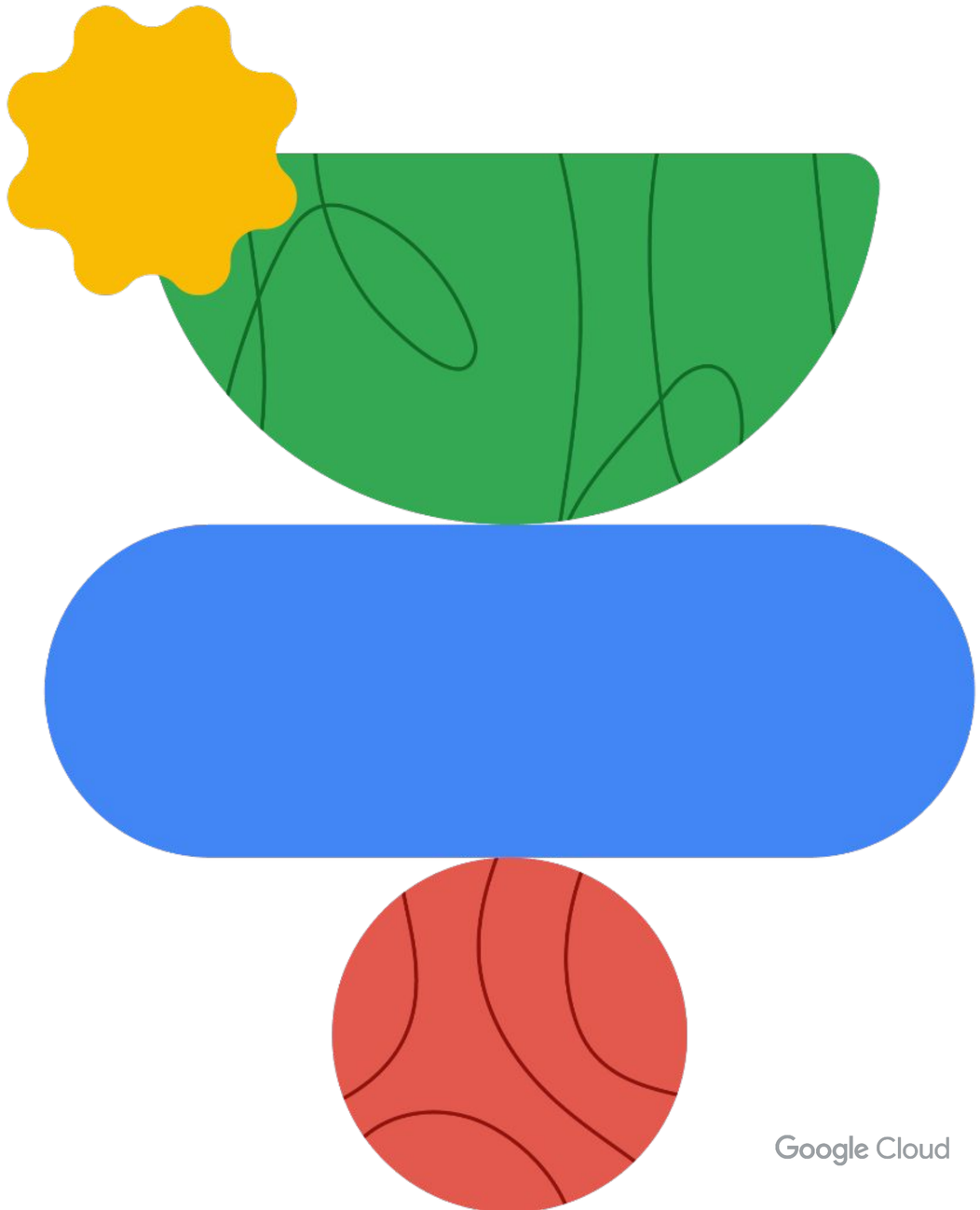
5 min | Group

Benefits of Google Cloud when building AI solutions

Why is using a platform like Google Cloud beneficial when building gen AI solutions for your organization?



Building a successful AI strategy



Multi-directional strategy: Top-down and bottom-up

01 Top-down

02 Bottom-up

Combine high-level strategic planning (top-down) with practical input from teams who will use the technology (bottom-up).

Multi-directional strategy: Top-down

01 Top-down

- Create a clear and compelling vision for AI by aligning AI solutions with your strategic business priorities.
- Identify the most important use cases and workflows.
- Then, consider how AI can support you in those priorities.

02 Bottom-up

Multi-directional strategy: Bottom-up

01 Top-down

02 Bottom-up

- Encourage teams to share their challenges and ideas for gen AI solutions.
- Encourage employees to use gen AI at a small scale. Then share their solutions for broader implementation.

Strategy and roles: Executives and high-level management

Executive sponsorship and a clear vision for gen AI implementation is essential.

Ensure gen AI initiatives:

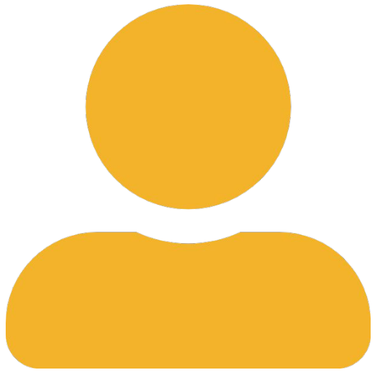
- Align with overall business goals.
- Receive adequate resources.
- Gain organization-wide support.
- Empower employees and teams to experiment.

Strategy and roles: Mid-level managers and individual contributors (ICs)

Their proximity to daily operations and end-users provides invaluable insight.

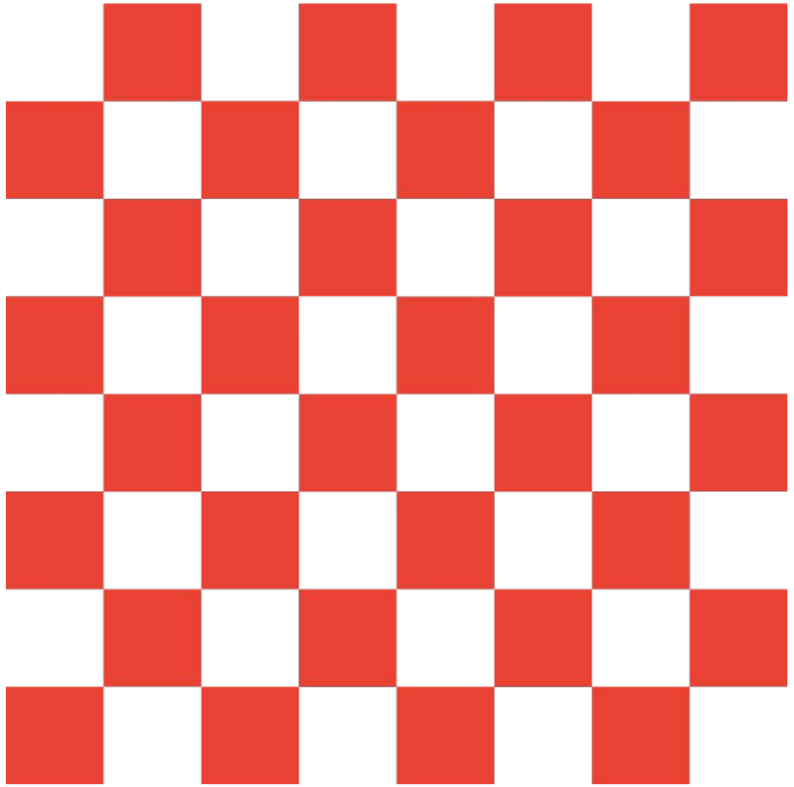
Champion gen AI adoption:

- Identify high-impact, feasible solutions that address specific challenges.
- Encourage experimentation and feedback to ensure gen AI tools are effectively integrated.



Multi-directional strategy: Factors

- Strategic focus
- Exploration
- Responsible AI
- Resourcing
- Impact
- Continuous improvement



Multi-directional strategy: Strategic focus

- Strategic focus (exec/high-levels)
- Exploration
- Responsible AI
- Resourcing
- Impact
- Continuous improvement

- Focus on a specific area where gen AI can have a significant impact; then expand.
- Prioritize use cases with the following characteristics::
  - They are feasible to implement.
  - They are actionable.
  - They are affordable.
  - They have high anticipated business value and return on investment (ROI).

Multi-directional strategy: Strategic focus

- Strategic focus (mid-levels/ICs)
- Exploration
- Responsible AI
- Resourcing
- Impact
- Continuous improvement

- Identify the most pressing pain points in daily work or those from customers.
- Prioritize understanding user needs, workflows, and expectations for interacting with AI systems.
- Explore use cases that offer a low-risk environment for initial implementation.

Multi-directional strategy: Exploration

- Strategic focus
- Exploration (exec/high-levels)
- Responsible AI
- Resourcing
- Impact
- Continuous improvement

- Empower employees to experiment with gen AI and identify potential use cases.
- Foster a collaborative environment where employees can share findings, insights, and best practices.

Multi-directional strategy: Exploration

- Strategic focus
- Exploration (mid-level/ICs)
- Responsible AI
- Resourcing
- Impact
- Continuous improvement

- Experiment with different gen AI tools and applications.
- Share findings and results with team and colleagues.

Multi-directional strategy: Responsible AI

- Strategic focus
- Exploration
- Responsible AI (exec/high-levels)
- Resourcing
- Impact
- Continuous improvement

- Establish ethical guidelines and implement safety mechanisms.
- Institute robust data governance practices.
- Implement a content moderation policy.
- Regularly monitor the performance and impact of gen AI systems.

Multi-directional strategy: Responsible AI

- Strategic focus
- Exploration
- Responsible AI (mid-level/ICs)
- Resourcing
- Impact
- Continuous improvement

- Adhere to company AI standards, align with organizational values, and mitigate risks.
- Think proactively about potential pitfalls and unintended consequences.
- Conduct thorough testing and evaluation to address biases, safety concerns, or ethical issues.

Multi-directional strategy: Resourcing

- Strategic focus
- Exploration
- Responsible AI
- Resourcing (exec/high-levels)
- Impact
- Continuous improvement

- Create a robust data strategy to ensure relevant access.
- Leverage existing tools and platforms.
- Invest in developing the necessary AI talent.

Multi-directional strategy: Resourcing

- Strategic focus
- Exploration
- Responsible AI
- Resourcing (mid-level/ICs)
- Impact
- Continuous improvement

- Leverage resources readily available within the team or department.
- Make a case for additional resources if required by showing the potential value and ROI of gen AI initiatives.

Multi-directional strategy: Impact

- Strategic focus
- Exploration
- Responsible AI
- Resourcing
- Impact (exec/high-levels)
- Continuous improvement

- Set clear goals and define KPIs to measure the impact of gen AI.
- Regularly communicate the progress and impact of gen AI initiatives to stakeholders.

Multi-directional strategy: Impact

- Strategic focus
- Exploration
- Responsible AI
- Resourcing
- Impact (mid-level/ICs)
- Continuous improvement

- Demonstrate the tangible impact of gen AI experiments to gain support and drive further adoption.
- Articulate how gen AI initiatives contribute to the overall business goals and objectives.
- Define and track KPIs that measure the effectiveness of gen AI solutions.

Multi-directional strategy: Continuous improvement

- Strategic focus
- Exploration
- Responsible AI
- Resourcing
- Impact
- Continuous improvement (exec/high-levels)

- Embrace an iterative development approach.
- Establish a regular evaluation cadence to assess the quality, accuracy, and effectiveness.
- Implement mechanisms for gathering feedback.

Multi-directional strategy: Continuous improvement

- Strategic focus
- Exploration
- Responsible AI
- Resourcing
- Impact
- Continuous improvement (mid-level/ICs)

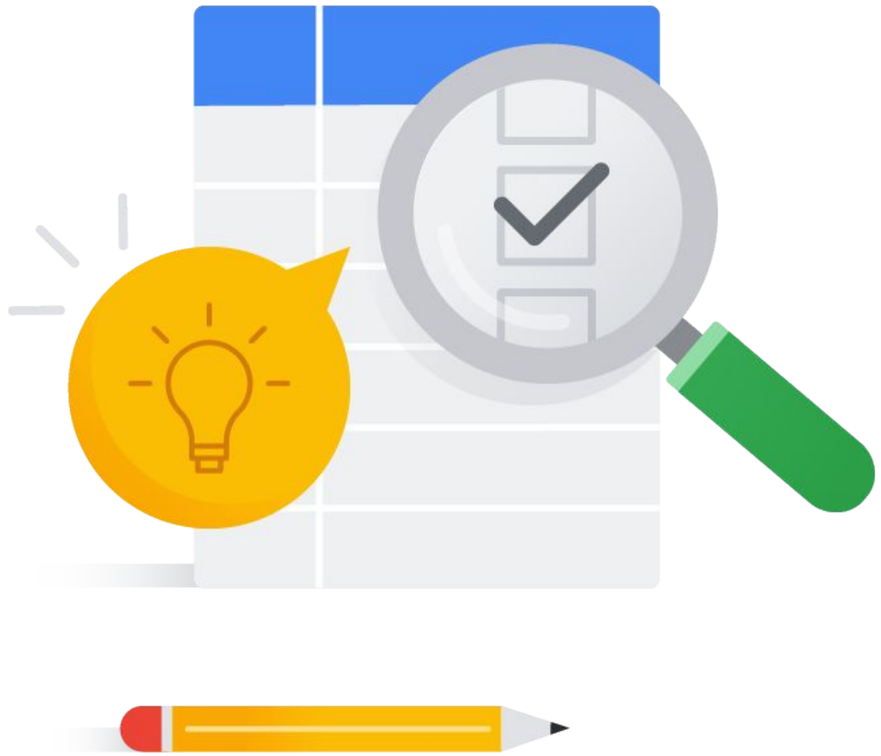
- Perform continuous testing, measurement, and refinement based on user feedback and real-world performance data.
- Update gen AI solutions regularly.
- Continue your own gen AI education.

Try it: Prioritization exercise

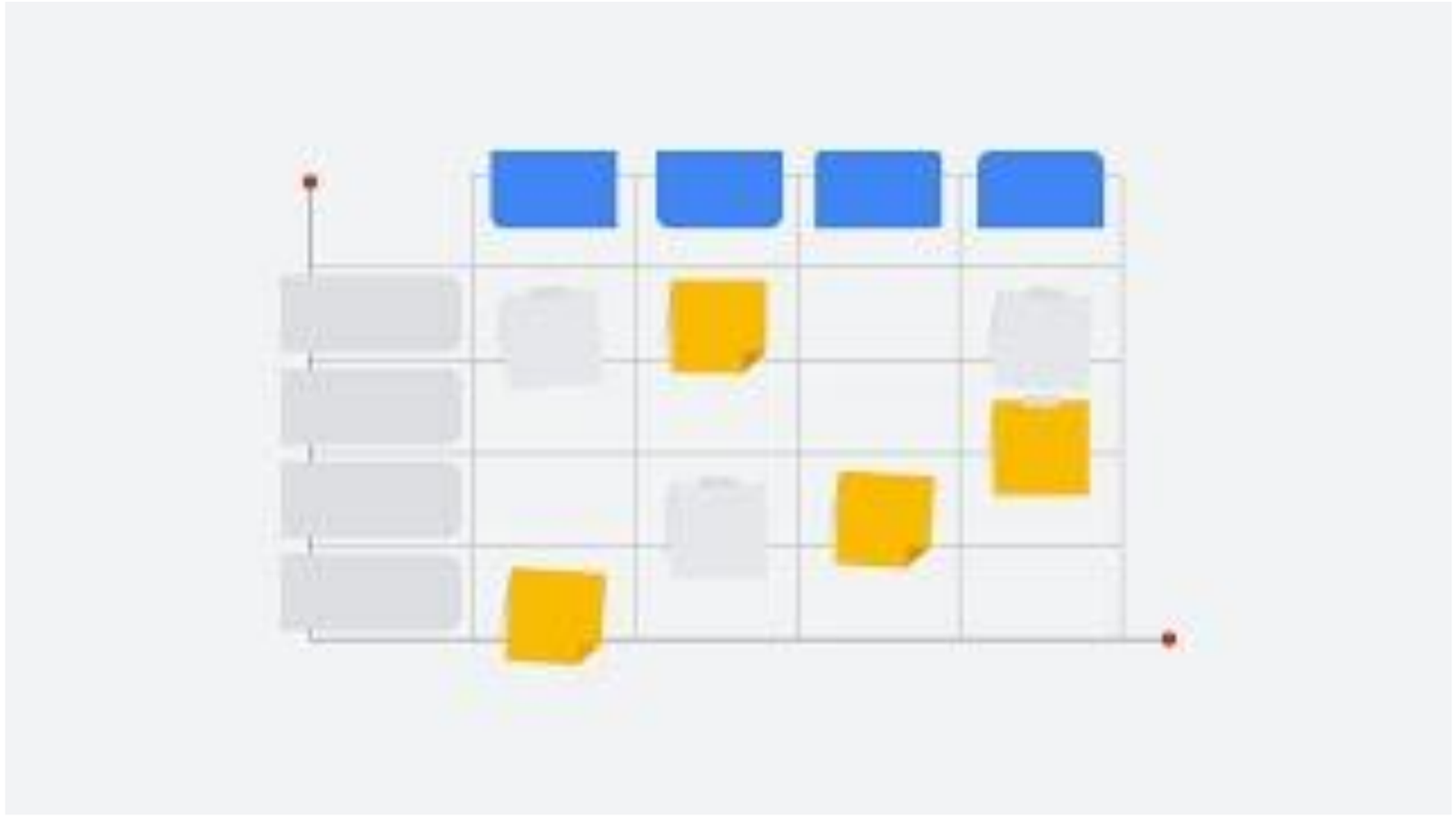
15 min

A faux floral business wants to identify use cases for generative AI in their business.

1. Watch the video introducing the creative matrix (2.5m).
2. Look at the sample matrix after the video. A few ideas have already been generated (2.5m).
3. Think of 3-5 “sticky notes” ideas of your own. Ask the Gemini app for support with generating ideas. Make sure you validate all the ideas (10m).



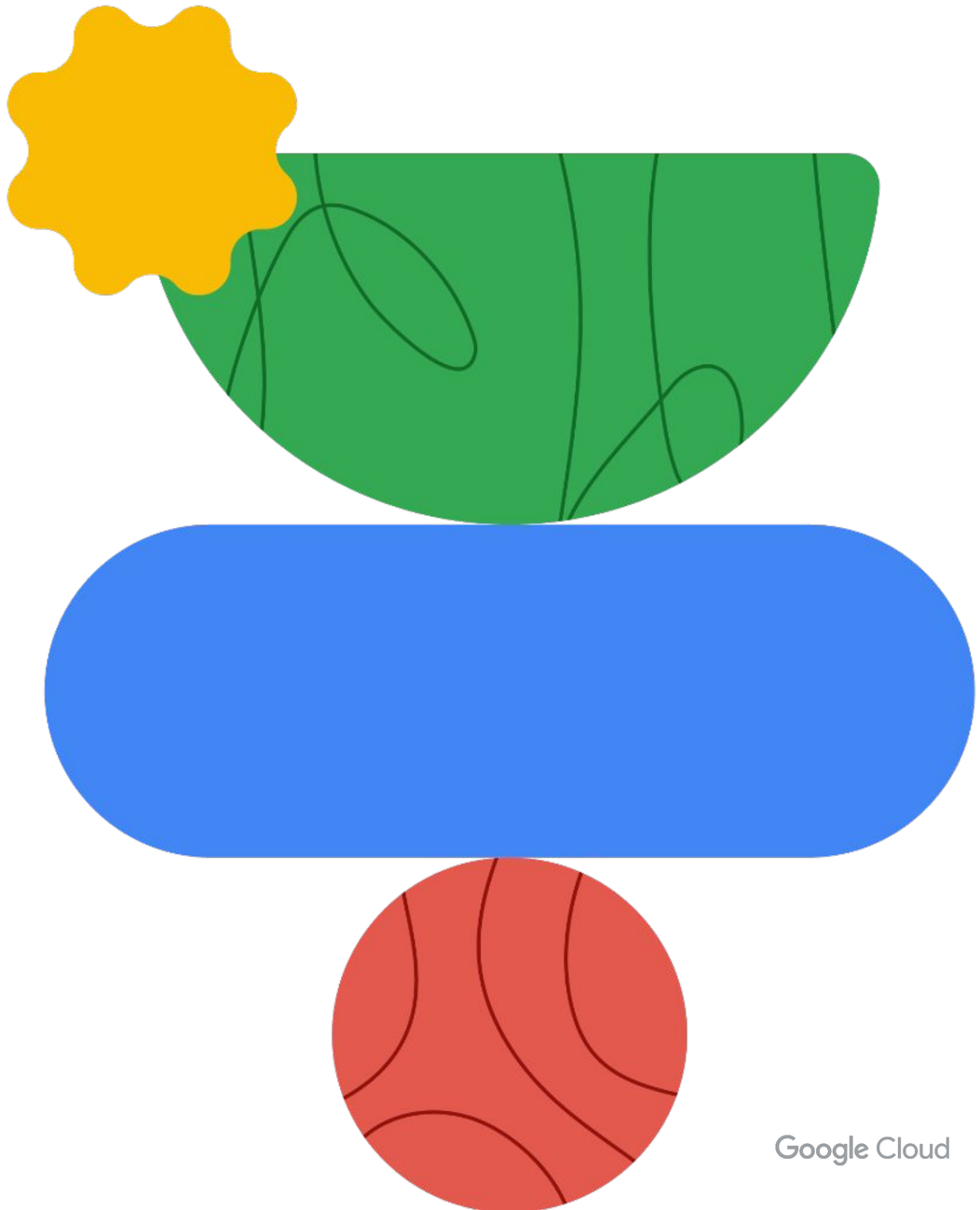
Use case: Faux floral creative matrix



Creative matrix: Faux floral

	Enhance customer experience	Increase efficiency	Drive innovation	Enhance employee productivity
Google Workspace for Gemini AI-powered workspace tools				Use Gemini in Gmail to assist sales teams with writing personalized emails to clients.
Vertex AI Conversation Conversational AI	Build an AI-powered customer chatbot to provide instant support and answer questions about floral care.			
Vertex AI Search: AI-powered search			Create a search tool where customers can upload images to find similar floral arrangements.	
Vertex AI Studio: AI model development and customization	Fine-tune a model to analyze customer data and predict future demand for products.		Develop custom models to create virtual try-on experiences for visualizing floral arrangements in different spaces.	

Augmentation versus automation



Augment your strategic thinking

Critical thinking and problem solving	Creativity and innovation	Relationship building and collaboration	Strategic planning and vision

Augment your strategic thinking: Gen AI

Critical thinking and problem solving	Creativity and innovation	Relationship building and collaboration	Strategic planning and vision

Gen AI can provide data and insights, but...

Augment your strategic thinking: Gen AI and humans

Critical thinking and problem solving | Creativity and innovation | Relationship building and collaboration | Strategic planning and vision

Gen AI can provide data and insights, but...

...humans are still needed to interpret those insights and make informed decisions.

Augment your strategic thinking: Gen AI

Critical thinking and problem solving | **Creativity and innovation** | Relationship building and collaboration | Strategic planning and vision

Gen AI can assist in generating ideas and exploring possibilities, but...

Augment your strategic thinking: Gen AI and humans

Critical thinking and problem solving | **Creativity and innovation** | Relationship building and collaboration | Strategic planning and vision

Gen AI can assist in generating ideas and exploring possibilities, but...

...human ingenuity is still essential for pushing boundaries and developing truly innovative solutions.

Augment your strategic thinking: Gen AI

Critical thinking and problem solving | Creativity and innovation | **Relationship building and collaboration** | Strategic planning and vision

Gen AI can facilitate communication and information sharing, but...

Augment your strategic thinking: Gen AI and humans

Critical thinking and problem solving | Creativity and innovation | **Relationship building and collaboration** | Strategic planning and vision

Gen AI can facilitate communication and information sharing, but...

...strong interpersonal skills are still crucial for building trust, fostering collaboration, and navigating complex human dynamics.

Augment your strategic thinking: Gen AI

Critical thinking and problem solving | Creativity and innovation | Relationship building and collaboration | **Strategic planning and vision**

Gen AI can help with forecasting and trend analysis, but...

Augment your strategic thinking: Gen AI and humans

Critical thinking and problem solving	Creativity and innovation	Relationship building and collaboration	**Strategic planning and vision**

Gen AI can help with forecasting and trend analysis, but...

...human leadership is essential for setting a long-term vision, defining goals, and charting a course for the future.

Automate tasks: Gen AI

Repetitive and rule-based	Time-consuming and resource-intensive
Data entry, information retrieval, content formatting, basic code generation	Research, data analysis, content summarization, initial draft creation

Automate tasks: Human-in-the-loop

Data selection and preparation

Ensure that gen AI models are trained on high-quality, relevant data that is representative of the intended use cases.

Prompt design and refinement

Craft prompts that elicit accurate and useful responses from gen AI models.

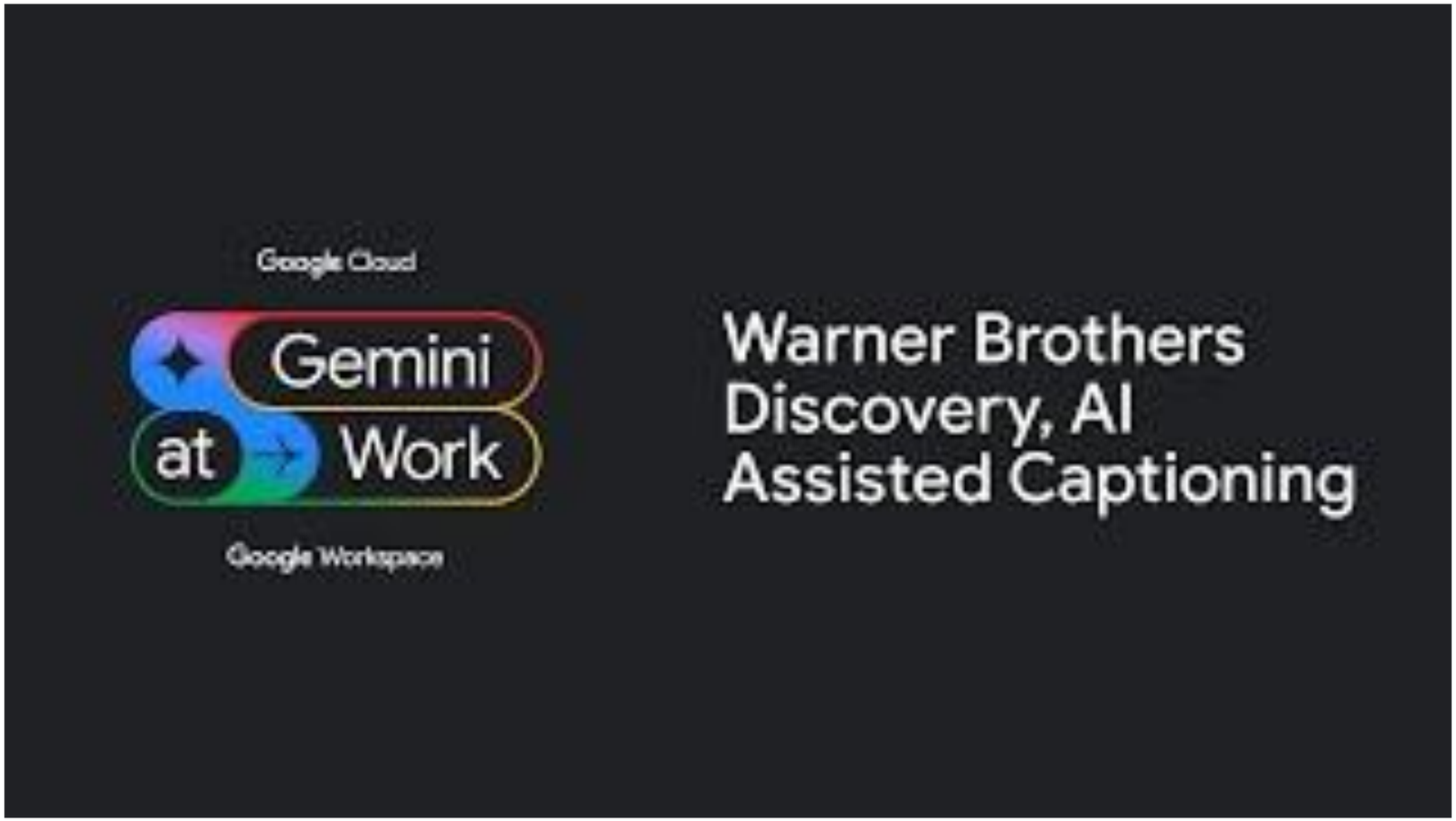
Output evaluation and refinement

Review and edit gen AI-generated content to ensure accuracy, relevance, and alignment with brand guidelines.

Continuous monitoring and feedback

Provide feedback on gen AI performance and identifying areas for improvement.

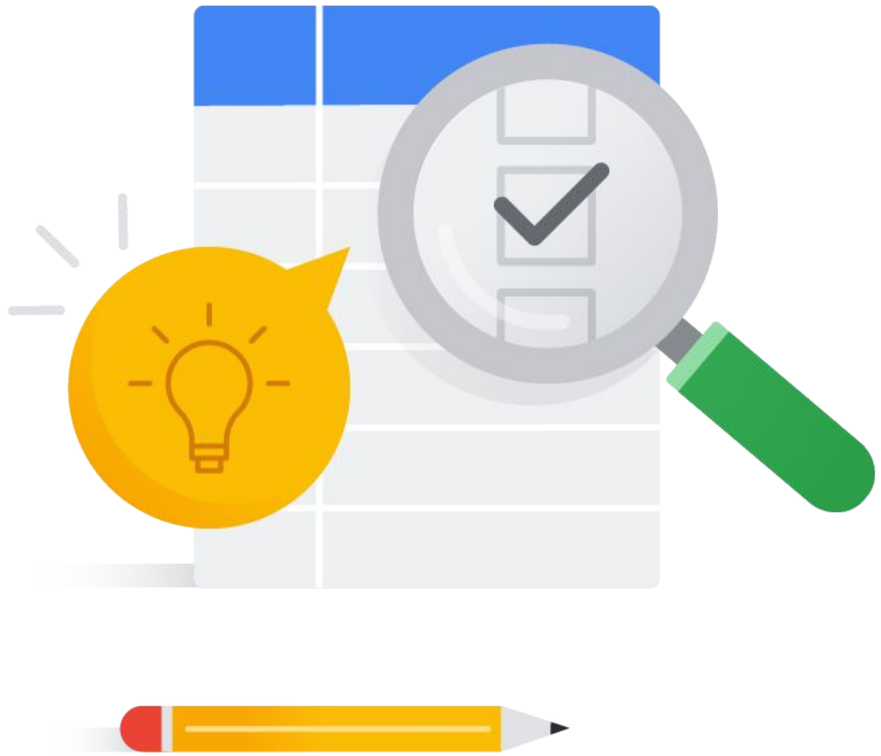
Use case: AI-assisted captioning at Warner Brothers



Activity: Augmentation or automation?

5 min

1. Read the scenario.
2. Identify if it is an example of augmentation or automation. Provide a reason for your choice.
3. Put your answer in the chat.



Scenario 1

Augmentation or automation?

Your sales team spends a lot of time answering basic questions about product pricing and availability. You decide to implement a gen AI chatbot to handle these initial inquiries.

Scenario 1: Feedback

Automation

Your sales team spends a lot of time answering basic questions about product pricing and availability. You decide to implement a gen AI chatbot to handle these initial inquiries.

Reason

Answering frequently asked questions is a repetitive task that can be easily handled by a gen AI chatbot. This frees up the sales team to focus on more complex customer interactions and closing deals.

Scenario 2

Augmentation or automation?

You're a financial analyst who uses gen AI to analyze large datasets and generate reports summarizing market trends. You then use this information to advise clients on investment strategies.

Scenario 2: Feedback

Augmentation

You're a financial analyst who uses gen AI to analyze large datasets and generate reports summarizing market trends. You then use this information to advise clients on investment strategies.

Reason

While gen AI is automating the data analysis and report generation, your role as a financial analyst is enhanced. You're using the AI-generated insights to inform your strategic thinking and provide valuable advice to clients. This aligns with the text's emphasis on using gen AI to enhance critical thinking and problem-solving.

Scenario 3

Augmentation or automation?

An online retailer uses gen AI to generate product descriptions for its vast catalog of items. They provide the AI with key product attributes (size, material, features, etc.) and the AI creates unique and informative descriptions for each item.

Scenario 3: Feedback

Automation

An online retailer uses gen AI to generate product descriptions for its vast catalog of items. They provide the AI with key product attributes (size, material, features, etc.) and the AI creates unique and informative descriptions for each item.

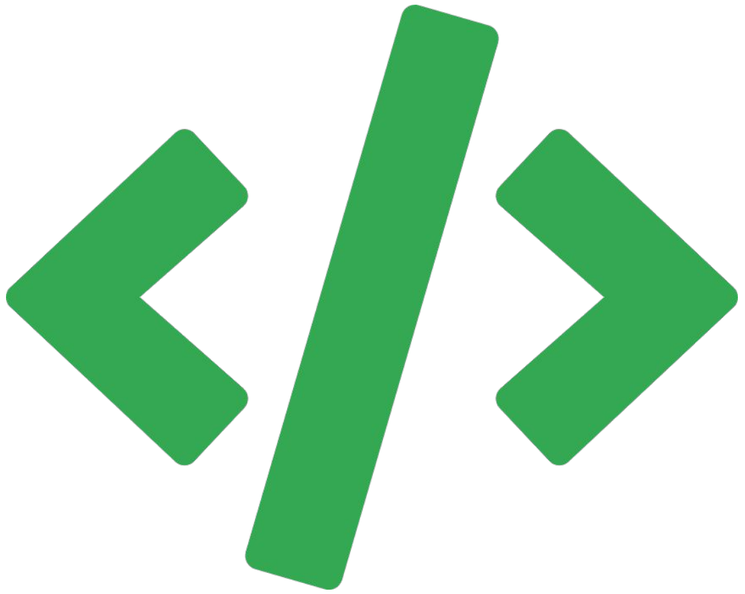
Reason

Gen AI automates the labor-intensive task of writing product descriptions for a large catalog, increasing efficiency and reducing the need for human writers to create basic product information. This allows the retailer to allocate resources to other important areas like marketing and customer service.

Scenario 4

Augmentation or automation?

A software development team uses gen AI to generate code for standard functions and components within their applications. They then review and integrate this code into their larger projects.



Scenario 4: Feedback

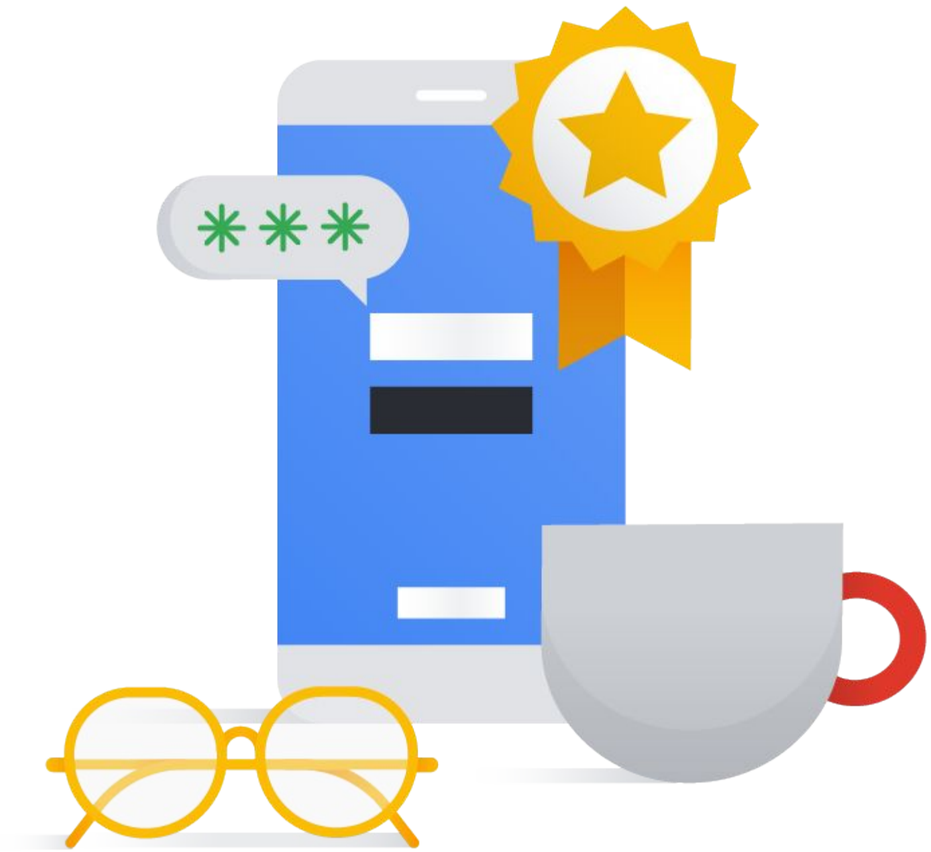
Augmentation

A software development team uses gen AI to generate code for standard functions and components within their applications. They then review and integrate this code into their larger projects.

Reason

The gen AI automates code generation, but it's augmenting the developers' capabilities by increasing their efficiency and allowing them to focus on more complex tasks. Human oversight remains essential for reviewing and integrating the AI-generated code, ensuring quality and alignment with project goals.

Now let's do a short quiz to check your knowledge.



Quiz | Question 01

Question

What is a key advantage of using Google Cloud's gen AI ecosystem for businesses?

A. It forces each and every business to become an AI-first company.

B. It eliminates the need for companies to cultivate internal gen AI knowledge and experimentation across their organizations.

C. It allows businesses to leverage Google's AI advancements without starting from scratch.

D. It assures businesses that they will achieve immediate and widespread success in all of their generative AI endeavors.

Quiz | Question 01

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Quiz | Question 02

Question

Which of the following are benefits of using Google Cloud for gen AI development? Select three.

A. Access to pre-trained models like Gemini.

B. Automatic model upgrades and security patches.

C. Ready-made gen AI solutions for all applications and domains.

D. Enterprise-grade security and compliance features.

E. A guarantee of complete accuracy in all generated content.

Quiz | Question 02

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Quiz | Question 03

Question

What is the recommended approach for businesses to effectively implement gen AI?

A. Focus on a top-down strategy driven by executives.

B. Focus on a bottom-up approach with no overarching plan.

C. Adopt the latest gen AI trends.

D. Combine a top-down strategic vision with bottom-up input from teams.

Quiz | Question 03

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Quiz | Question 04

Question

Why is it important for mid-level managers and individual contributors to be involved in gen AI adoption?

A. They have limited understanding of daily operations and user needs.

B. Their proximity to workflows allows them to identify impactful gen AI solutions.

C. They should avoid any involvement in gen AI experimentation.

D. Their focus should be solely on technical implementation details.

Quiz | Question 04

Answer

Why is it important for mid-level managers and individual contributors to be involved in gen AI adoption?

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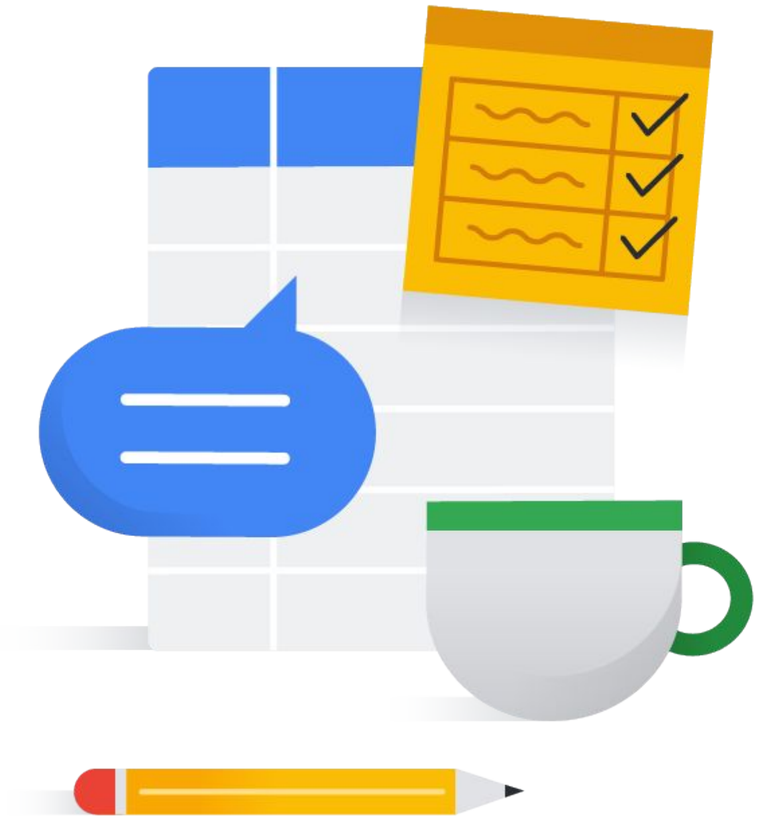
C. They should avoid any involvement in gen AI experimentation.

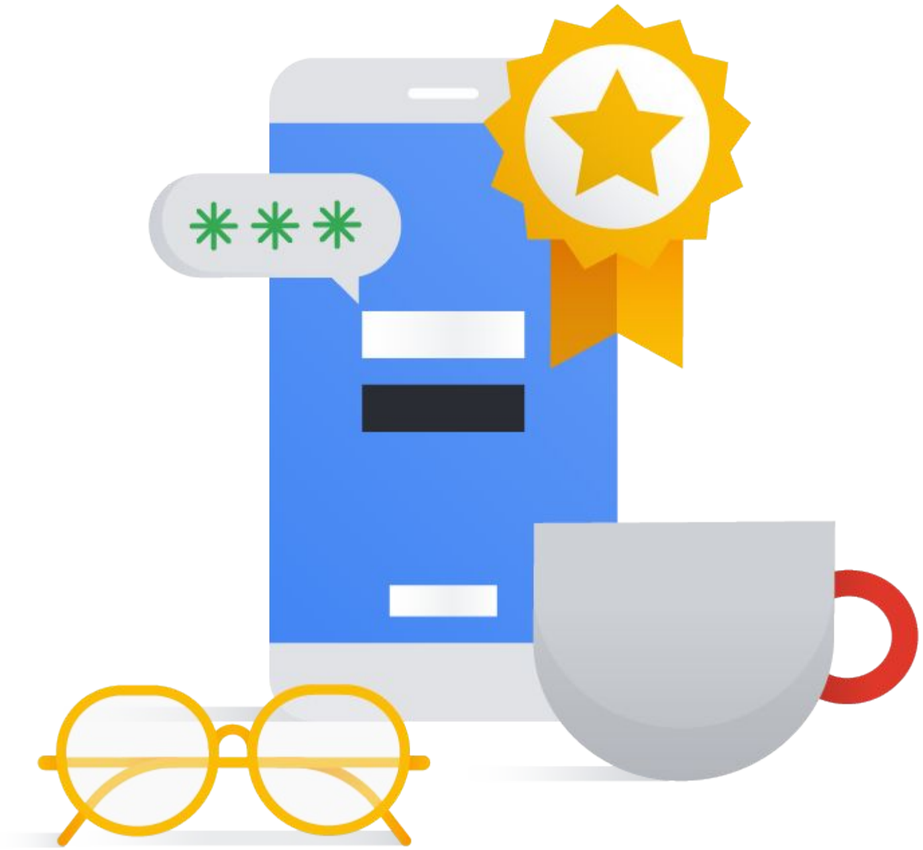
D. Their focus should be solely on technical implementation details.

Key takeaways

- Google Cloud enables businesses to use generative AI without managing infrastructure management and AI advancements.
- Successful implementation requires a multi-directional approach comprising leadership vision and team empowerment.
- Human interaction is always involved in generative AI solutions, enhancing user experience and interactions.



Now let's wrap up with a quiz to check your knowledge on Module 01.



Quiz | Question 01

Answer

Which statement about generative AI is correct?

A. Its primary function is to analyze existing data and provide predictive insights based on historical trends.

B. It is designed to create new and original content, such as text, images, audio, or code, that did not previously exist.

C. It exclusively relies on pre-programmed rules and decision trees to produce outputs.

D. Its main purpose is to automate repetitive, manual tasks without creating any new information or content.

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Quiz | Question 02

Question

What is the primary difference between foundation models and traditional AI models?

A. Foundation models are only trained on text data, while traditional models use images and code.

B. Foundation models are trained on specific data for a single task, while traditional models are trained on diverse data for various tasks.

C. Foundation models are trained on massive amounts of diverse data for various tasks, while traditional models are trained on specific data for a single task.

D. Foundation models cannot be adapted to new tasks, while traditional models can.

Quiz | Question 02

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Quiz | Question 03

Question

How does generative AI primarily augment human capabilities in critical thinking and problem-solving?

A. By independently making informed decisions and solving complex problems without human intervention.

B. By generating final solutions that require no further human review or input.

C. By replacing the need for human critical thinking in strategic tasks.

D. By providing data and insights that humans then interpret to make informed decisions.

Quiz | Question 03

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Module objectives

01 Describe how gen AI transforms business functions and industries.

02 Explore how gen AI creates value through foundation models and prompts.

03 Identify Google Cloud's unique strengths in gen AI.

04 Explain Google Cloud's steps to implement successful gen AI solutions.

Additional resources

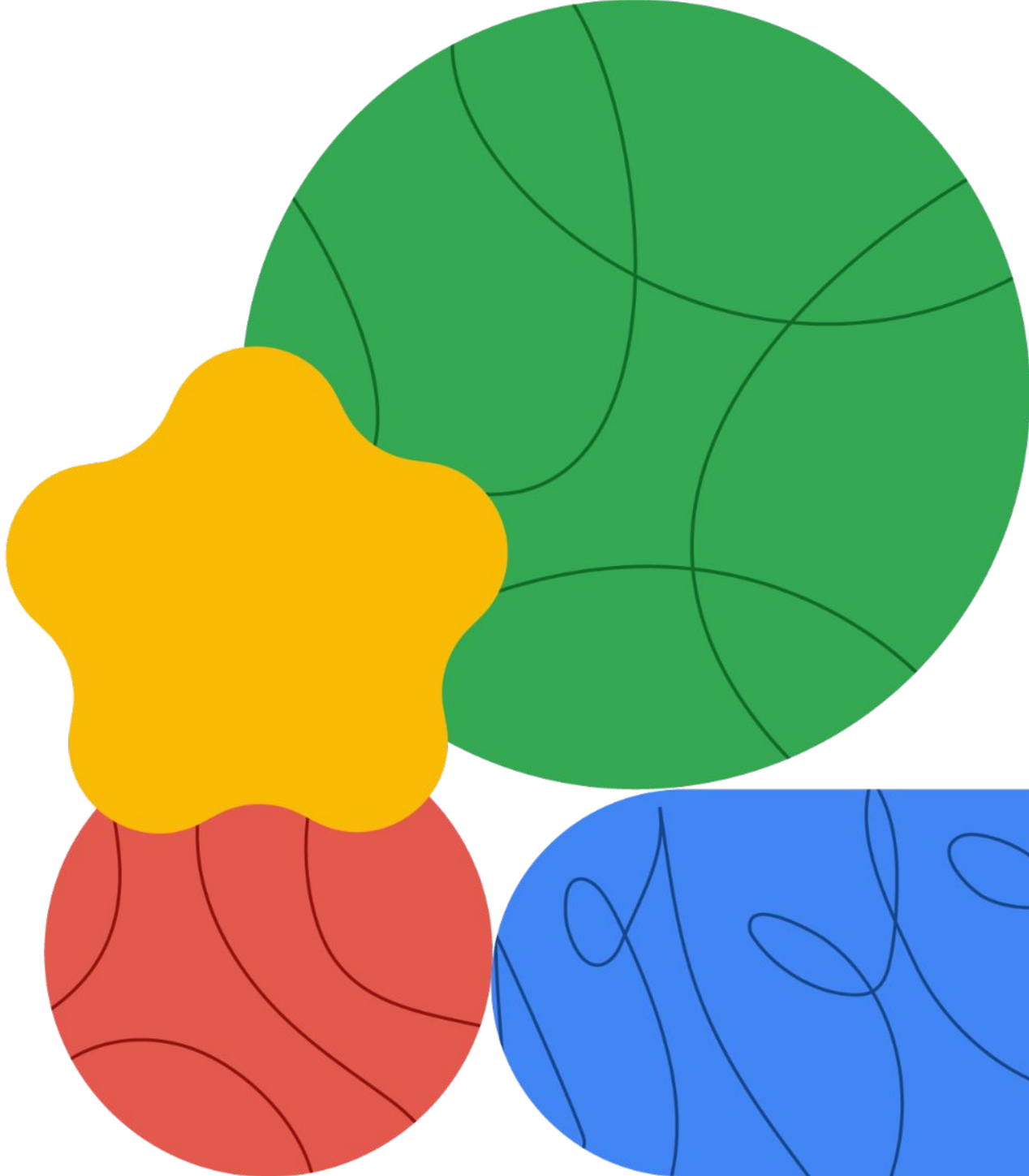
Lesson 01

- Four primary ways to use gen AI
- Vertex AI
- Model Garden

Module 01 complete!

Google Cloud

Appendix 01: Lesson 02 quiz questions



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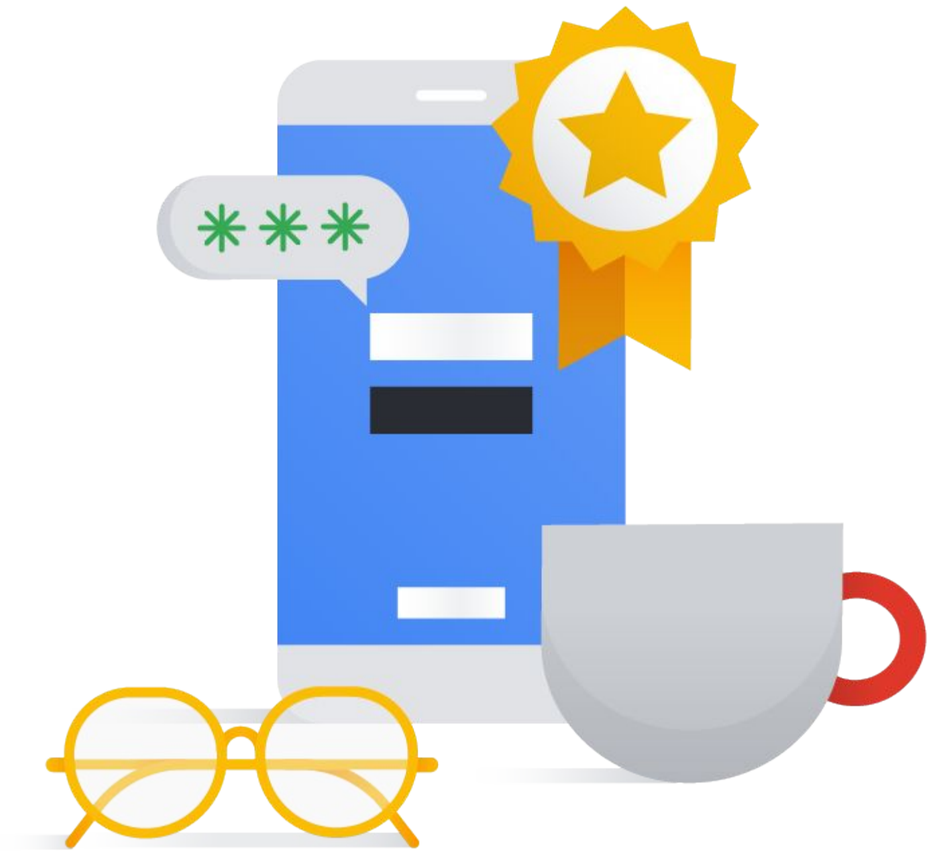

Quiz | Question 01

Question

Which of the following items are a foundation model? Select three.

A. A deep learning model that can generate realistic images from text descriptions

B. A decision tree model used to predict customer churn

C. A linear regression model used to predict house prices

D. A model trained on a vast dataset of images and videos, capable of understanding and generating visual content, as well as answering questions about it

E. A model trained on a massive dataset of code, capable of translating languages and writing different kinds of creative content

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Quiz | Question 02

Question

Which of the following statements accurately describes the relationship between foundation models and large language models (LLMs)? Select two.

A. All foundation models are LLMs.

B. Foundation models and LLMs are unrelated concepts.

C. LLMs are a specialized type of foundation model.

D. All LLMs are foundation models.

E. Foundation models are only used for research purposes, while LLMs are used for practical applications.

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Quiz | Question 03

Question

Which of the following defines a foundation model?

A. Small, very specialized AI models trained on narrow datasets in order to perform specific tasks

B. Traditional machine learning algorithms that rely on explicitly defined rules

C. Large AI models trained on a vast quantity of data, capable of adapting to a variety of tasks

D. Hardware infrastructure used to train and deploy AI models

Quiz | Question 03

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Quiz | Question 04

Question

How do foundation models and prompt engineering work together to create value in generative AI?

A. Foundation models provide the computing power for generative AI, while prompt engineering directs that power to complete specific tasks.

B. Foundation models offer a vast knowledge base, and prompt engineering guides the model to use this knowledge in responses.

C. Prompt engineering trains foundation models on specific tasks, allowing them to generate highly specialized content and insights.

D. Foundation models ensure the ethical use of generative AI, while prompt engineering focuses on improving the quality and creativity of outputs.

Quiz | Question 04

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D. Foundation models ensure the ethical use of generative AI, while prompt engineering focuses on improving the quality and creativity of outputs.

Quiz | Question 05

Question

Which of the following are key features of foundation models? Select three.

A. Trained on diverse data

B. Specialized to specific tasks

C. Adaptable to new domains and tasks

D. Flexible to support various use cases

Quiz | Question 05

Answer

Which of the following are key features of foundation models? Select three.

A. Trained on diverse data 

B. Specialized to specific tasks

C. Adaptable to new domains and tasks 

D. Flexible to support various use cases 

Quiz | Question 06

Question

What is the purpose of a prompt in the context of foundation models?

A. To evaluate the model's performance

B. To provide input to the model and trigger an output

C. To fine-tune the model for a specific task

D. To train the model on new data

Quiz | Question 06

Question

What is the purpose of a prompt in the context of foundation models?

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