

Gemini for Developers

[https://codelabs.developers.google.com/
gemini-for-developers](https://codelabs.developers.google.com/gemini-for-developers)





Mete Atamel

Developer Advocate

Google Cloud

atamel.dev

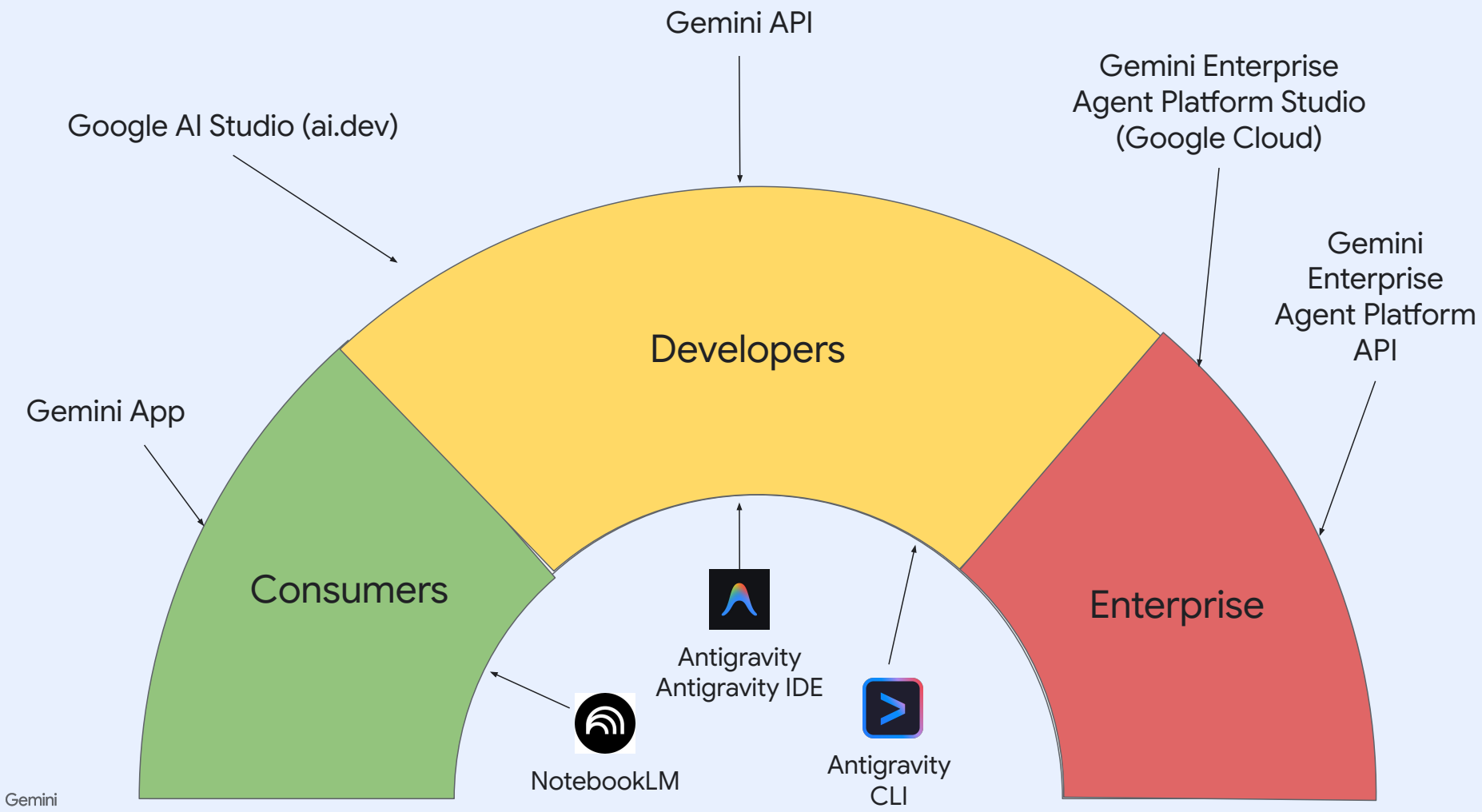
speakerdeck.com/meteatamel

@meteatamel

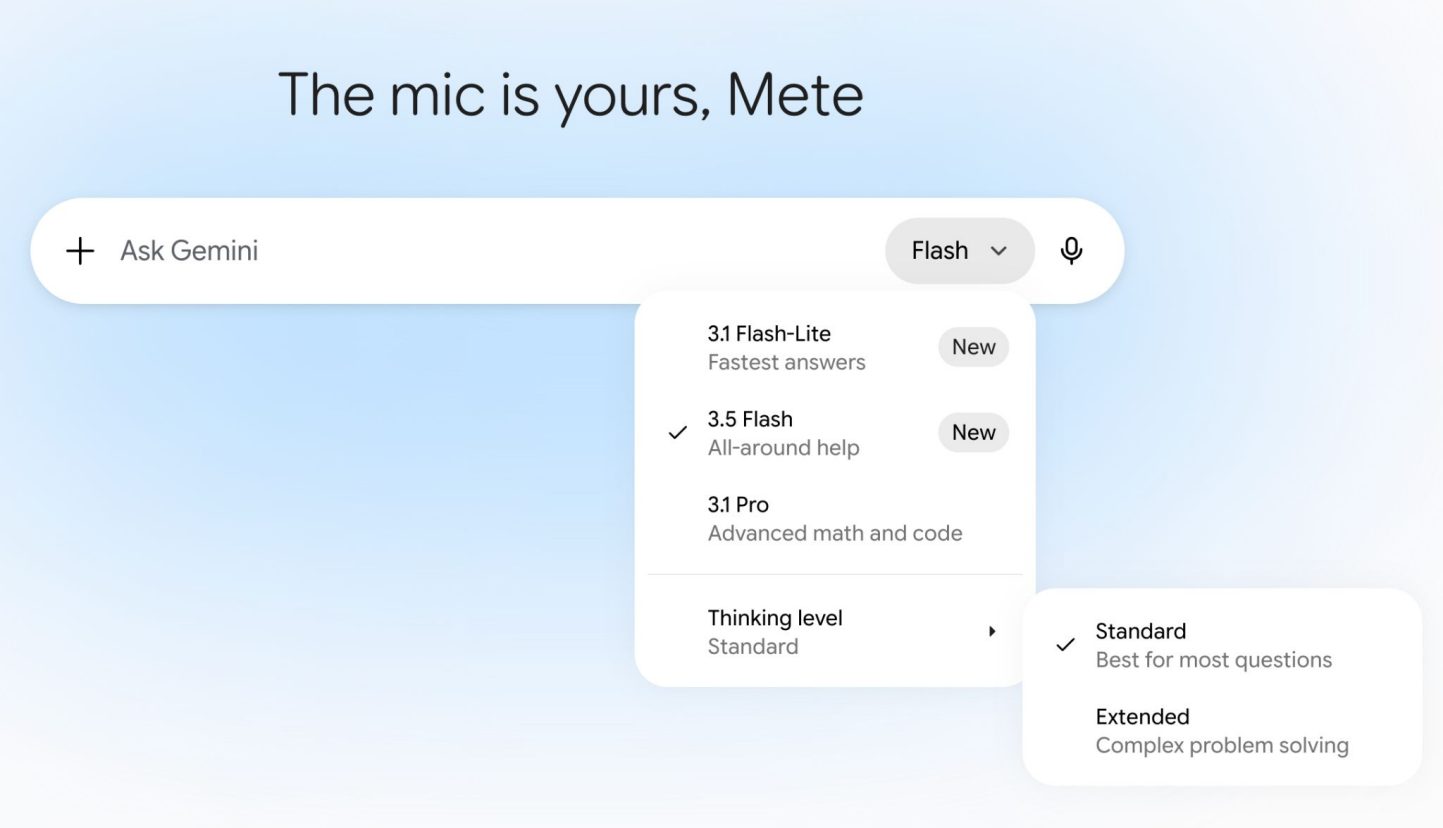


The Gemini Family

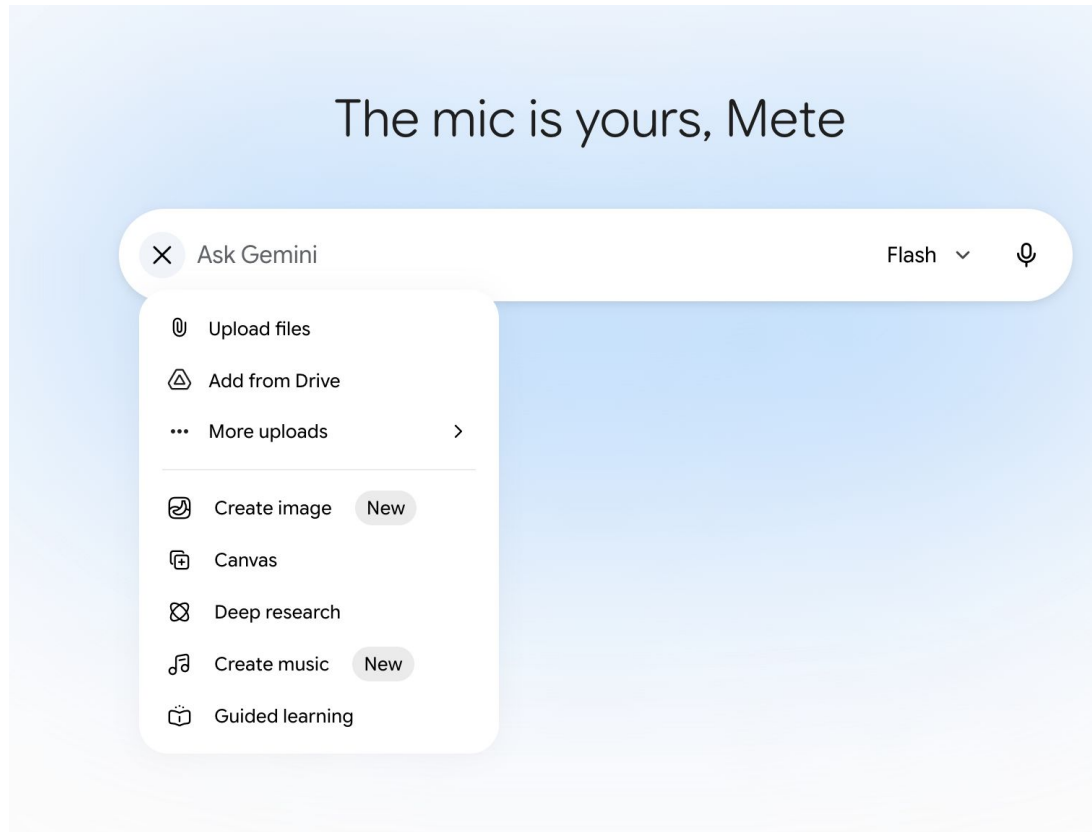
Gemini is an umbrella brand used in Google products that utilize the **Gemini** model



Gemini App — chat with different models



Gemini App — image, music, deep research



NotebookLM — AI research partner

The screenshot displays the NotebookLM interface for an "Untitled notebook". The interface is divided into three main sections:

- Sources:** Located on the left, it features a search bar with the text "Search the web for new sources" and a "Fast Research" filter. Below this, it states "Saved sources will appear here" and provides instructions on how to add sources from the web or Google Drive.
- Chat:** The central area, titled "Chat", contains a hand icon and the heading "Let's start your notebook...". It includes a welcome message: "This is your blank canvas to understand, create, or make progress on something new. I can help you get started or you can go ahead and add your own sources." Below this, it asks "What would you like this notebook to help you do?" and offers four options: "Start a project", "Learn or understand something", "Create a podcast, video, slide deck, etc.", and "Something else...". At the bottom of the chat area is a text input field with the placeholder "Ask a question or create something" and a "0 sources" indicator.
- Studio:** Located on the right, it displays a grid of interactive tools: "Audio Overview", "Slide Deck" (marked BETA), "Video Overview", "Mind Map", "Reports", "Flashcards", "Quiz", "Infographic" (marked BETA), and "Data Table". Below the grid, it states "Studio output will be saved here." and provides instructions: "After adding sources, click to add Audio Overview, Study Guide, Mind Map, and more!". At the bottom right of the studio panel is an "Add note" button.

Google AI Studio — explore models

The screenshot displays the Google AI Studio Playground interface. On the left is a navigation sidebar with options like 'Playground', 'History', 'Build', 'Apps', 'Gallery', 'Dashboard', and 'Documentation'. The main area is titled 'Explore Google models' and features six interactive cards: 'Featured', 'Code and Chat', 'Image Generation', 'Video Generation', 'Speech and Music', and 'Real-time'. A 'Start building' button is located below these cards. At the bottom, there is a text input field with the placeholder 'Start typing a prompt to see what our models can do' and a 'Tools' button. On the right side, a 'Run settings' panel is open, showing 'Gemini 3.5 Flash' as the selected model, 'System instructions', a 'Thinking level' dropdown set to 'Medium', and various tool settings like 'Structured outputs', 'Code execution', and 'Function calling'.

Google AI Studio

Playground

History

Build

Apps

Gallery

Dashboard

Documentation

Upgrade to unlock more
Access higher limits, Pro models, and more.

Search

What's new

Get API key

Settings

atameldev@gmail.com

Playground

Explore Google models

Models Agents

- Featured**
Test out our most advanced and newest models.
- Code and Chat**
Build chatbots, agents, and code with Gemini 3.
- Image Generation**
Create and edit images with Nano Banana and Imagen.
- Video Generation**
Generate videos with Veo models, our state of the art video generation models.
- Speech and Music**
Explore our text to speech and music generation models.
- Real-time**
Real-time voice and video with Live API.

Start building →

Start typing a prompt to see what our models can do

Tools

Run

Run settings

Get code

Gemini 3.5 Flash
gemini-3.5-flash
Our most intelligent model for sustained frontier performance in agentic and coding tasks.

System instructions
Optional tone and style instructions for the model

Thinking level
Medium

Tools

Structured outputs Edit

Code execution

Function calling Edit

Grounding with Google Search

Grounding with Google Maps

URL context

Advanced settings

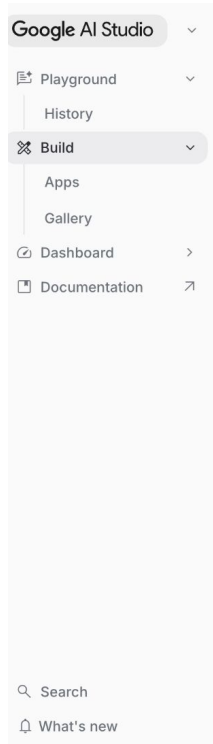
Media resolution
Default

Safety settings Edit

Google AI Studio — managed agents

The screenshot displays the Google AI Studio Playground interface. On the left is a navigation sidebar with the following items: Google AI Studio (dropdown), Playground (dropdown), History, Build (dropdown), Apps, Gallery, Dashboard (dropdown), and Documentation (dropdown). Below the sidebar is a search bar and links for 'What's new', 'Get API key', and 'Settings'. At the bottom of the sidebar is a user profile icon and the email 'atameldev@gmail.com'. The main area is titled 'Playground' and features a 'Build with Agents' section. This section has two tabs: 'Models' and 'Agents', with 'Agents' selected. It contains six agent cards: 1. 'Antigravity Preview' (yellow icon): A general-purpose autonomous agent running in a remote, Google-hosted Linux environment. 2. 'AI Talk Radio' (blue icon): Transforms a text source into a polished, simulated radio show with hosts, callers, and background music. 3. 'Customer Support' (purple icon): Scans a website to build a custom knowledge base and answer support questions using that content. 4. 'Data Analyst' (green icon): Delivers interactive business intelligence and data analysis using the Microsoft Northwind dataset. 5. 'Document Processor' (red icon): Reconciles expenses and invoices, verifies vendors, and creates interactive HTML slideshow reports. 6. 'Repo Maintainer' (orange icon): Analyzes your codebase to identify issues, answer questions, and generate bug-fixing patches. At the bottom of the main area is a large text input field with the placeholder text 'Start typing a prompt to see what our models can do'. To the left of the input field is a 'Tools' button, and to the right are buttons for download, refresh, and 'Run'.

Google AI Studio — build full stack web and Android apps



Build your ideas with Gemini

Describe an app and let Gemini do the rest

Gemini Enterprise Agent Platform

- Agent Platform
 - Overview
 - Studio
 - Models
 - Agents
 - Notebooks
- Get API key
- Tutorials

⚠ Enable APIs to access full platform capabilities. [Enable APIs](#)

Gemini Enterprise Video tutorial

Welcome to Agent Platform

Vertex AI is now Agent Platform. Build enterprise-grade agents with the latest models. [How](#)

Get started with Generative AI

Access multimodal capabilities to generate text, code, and images with Gemini or your chosen model. [Enable APIs](#) [View setup docs](#)

```
Python
from google import genai
from google.genai.types import HttpOptions

client = genai.Client(http_options=HttpOptions(api_version="v1"))
response = client.models.generate_content(
    model='gemini-2.5-flash',
    contents='How does AI work?',
)
print(response.text)
```

Try Models

[Featured models](#) [Google models](#) [Partner models](#) [Open models](#) [Explore all](#)

- Gemini 3.1 Pro Preview** New
Google's top model for reasoning and agents.
- Gemini 3.5 Flash**
Frontier intelligence optimized for speed.
- Veo 3.1 for Video Generation**
Google's most advanced video model.

Agent Platform Studio

Google Cloud genai-atamel



Agent Platform / Studio

New chat

Agents

App builder

Generate media

Recents

Image Composition with Multi...

Weather Report with Reasoning

Image Composition with Multi...

Image Composition with Multi...

Weather in London and Dubai

View all

Get API key

Documentation

Settings

Untitled prompt

Preview Code

Model settings gemini-3.5-flash

System instructions

Give the model context to understand the task and provide tailored responses

Minimap

Use prompt input to start conversation.

Type a prompt to see what our models can do

Tools Agents Platform assistant 0 tokens

Auto-clear

Google Antigravity

antigravity.google

Agentic development
platform

Antigravity Platform



Antigravity
2.0



Antigravity
IDE



Antigravity
CLI



Antigravity
SDK

Gemini Models

Latest Gemini Models

Home > Documentation > AI and ML > Gemini Enterprise Agent Platform > Models

Was this helpful?  

Google models

[Send feedback](#)

Featured Gemini models

3.5 Flash

Designed to deliver strong agentic capabilities (near-Pro level) at substantial speed and value.

- Pro-level coding proficiency and parallel agentic execution
- Features a 1 million token context window
- Near-Pro intelligence at Flash-tier cost and speed

3.1 Flash-Lite

Our most cost-efficient model, optimized for low latency use cases for high-volume, cost-sensitive LLM traffic

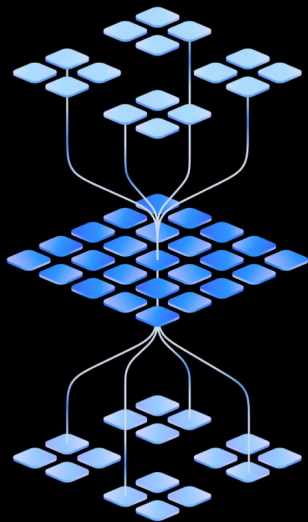
- Optimized for low latency and high-volume traffic
- Improved response quality and instruction following
- Improved audio input quality for ASR tasks

3.1 Flash Image

Turn ideas into production-ready assets

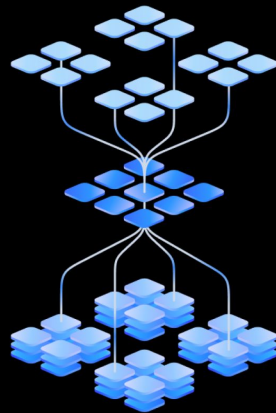
- Generate high-quality images
- Capable of turn-based conversational editing
- Capable of multi-image fusion and character consistency for advanced creative workflows

docs.cloud.google.com/vertex-ai/generative-ai/docs/models



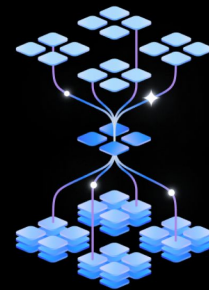
3.1 Pro

Largest model tier,
for complex tasks



3.5 Flash

Best model for
general performance
across a wide range of
tasks



3.1 Flash-Lite

Lightweight model,
optimized for
speed and cost
efficiency

What makes Gemini unique?



Natively
Multimodal



Multimodal
Live API



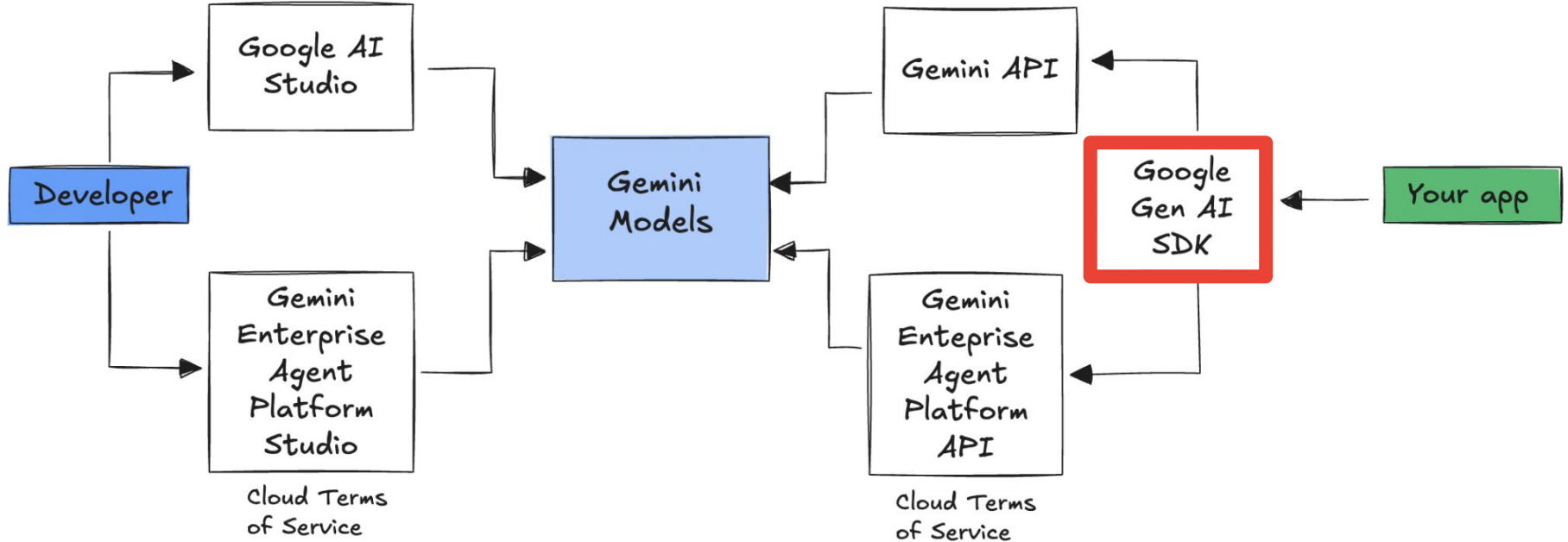
Advanced
coding



Long context

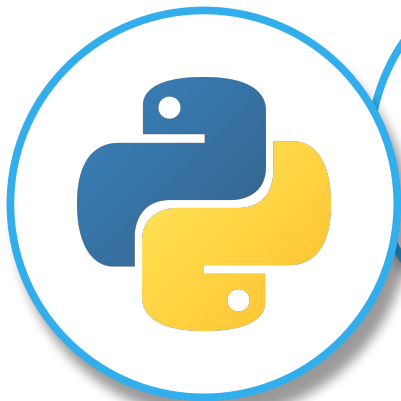
Google Gen AI SDK

Google Gen AI SDK*

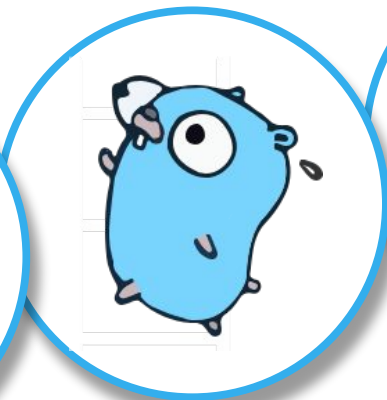


*SDK is unified but features are not always available in both

Google Gen AI SDK



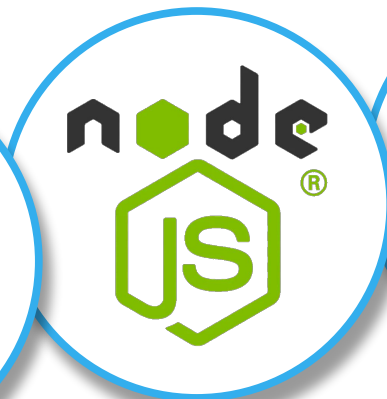
Python



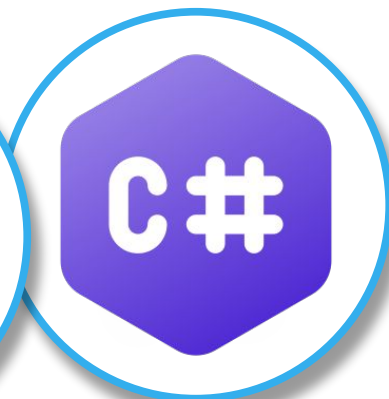
Go



Java



Node.js



C#

Gemini API

```
client = genai.Client(  
    api_key=your-gemini-api-key)
```

```
response = client.models.generate_content(  
    model="gemini-3.5-flash",  
    contents="Why is the sky blue?")
```

Agent Platform API

```
client = genai.Client(  
    vertexai=True,  
    project=your-google-cloud-project,  
    location="us-central1")
```

```
response = client.models.generate_content(  
    model="gemini-3.5-flash",  
    contents="Why is the sky blue?")
```



Interactions API

The Interactions API is a unified interface for interacting with Gemini models and agents

It simplifies state management, tool orchestration, and long-running tasks

Basic interaction

```
interaction = client.interactions.create(  
    model="gemini-3.5-flash",  
    input="Tell me a short joke."  
)  
  
print(interaction.outputs[-1].text)
```

Stateful conversation

```
interaction1 = client.interactions.create(  
    model="gemini-3.5-flash",  
    input="Hi, my name is Phil."  
)  
print(f"Model: {interaction1.outputs[-1].text}")  
  
interaction2 = client.interactions.create(  
    model="gemini-3.5-flash",  
    input="What is my name?",  
    previous_interaction_id=interaction1.id  
)  
print(f"Model: {interaction2.outputs[-1].text}")
```

Agents

```
interaction = client.interactions.create(  
    input="Research the history of the Google TPUs.",  
    agent="deep-research-pro-preview-12-2025",  
    background=True  
)
```

```
while True:  
    if interaction.status == "completed":  
        print("\nFinal Report:\n",  
            interaction.outputs[-1].text)  
        break
```

Gemini Features



Long Context



Thinking Mode



Tools & Agents



Image &
Text-to-Speech
Generation



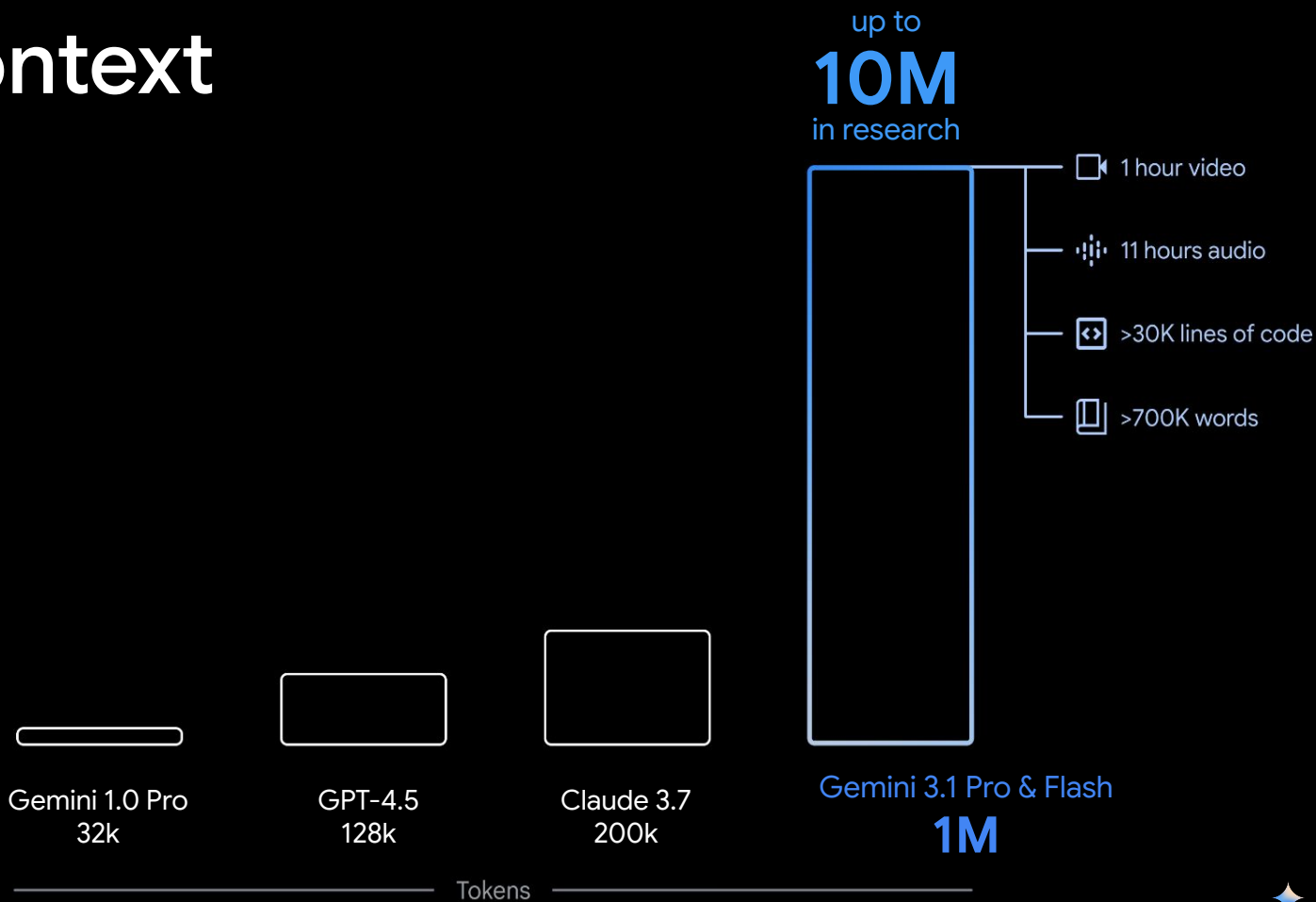
Spatial
Understanding



Live API

Long Context

Long context



Thinking Mode

Thinking mode in Gemini

The Gemini 3 and 2.5 models use an internal thinking process that significantly improves their reasoning for complex tasks

Thinking mode in Gemini

Thinking **levels** (Gemini 3) and **budgets** (Gemini 2.5) to control thinking behaviour

Enable `include_thoughts=True` to see model's raw thoughts

Thinking configuration

```
response = client.models.generate_content(  
    model="gemini-3.5-flash",  
    contents="How does AI work?",  
    config=types.GenerateContentConfig(  
        thinking_config=types.ThinkingConfig(  
            thinking_level="low",  
            include_thoughts=True  
        )  
    ),  
)
```

Tools & Agents



Google Search Tool

Ground model responses in **Google Search results**

For more accurate, up-to-date, and relevant responses



Google Search Tool

```
google_search_tool = Tool(google_search=GoogleSearch())

response = client.models.generate_content(
    model="gemini-3.5-flash",
    contents="How's the weather like today in London?",
    config=GenerateContentConfig(tools=[google_search_tool])
)
```

Google Maps Tool



Ground model responses with **Google Maps**, which has access to information on over 250 million places

Google Maps Tool



```
google_maps_tool = Tool(google_maps=GoogleMaps())

response = client.models.generate_content(
    model="gemini-3.5-flash",
    contents="What are the best restaurants near here?",
    config=GenerateContentConfig(tools=[google_maps_tool]),
    # Optional: Provide location context (this is in Los Angeles)
    tool_config=ToolConfig(retrieval_config=types.RetrievalConfig(
        lat_lng=types.LatLng(
            latitude=34.050481, longitude=-118.248526))),
)
```

Code Execution Tool

Model generates and runs Python code with a list of supported libraries (pandas, numpy, PyPDF2, etc.)

Useful for applications that benefit from code-based reasoning (e.g. solving equations)

Code Execution Tool

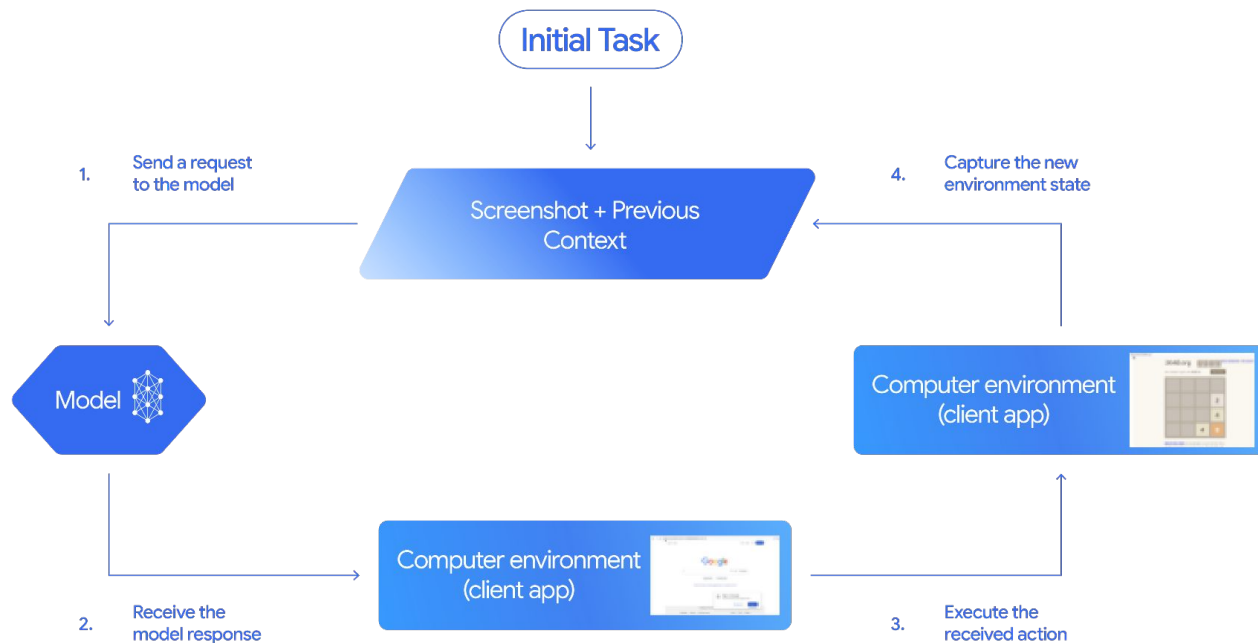
```
code_execution_tool = Tool(code_execution=ToolCodeExecution())

response = client.models.generate_content(
    model="gemini-3.5-flash",
    contents="What is the sum of the first 50 prime numbers?",
    config=GenerateContentConfig(
        tools=[code_execution_tool],
        temperature=0))
```

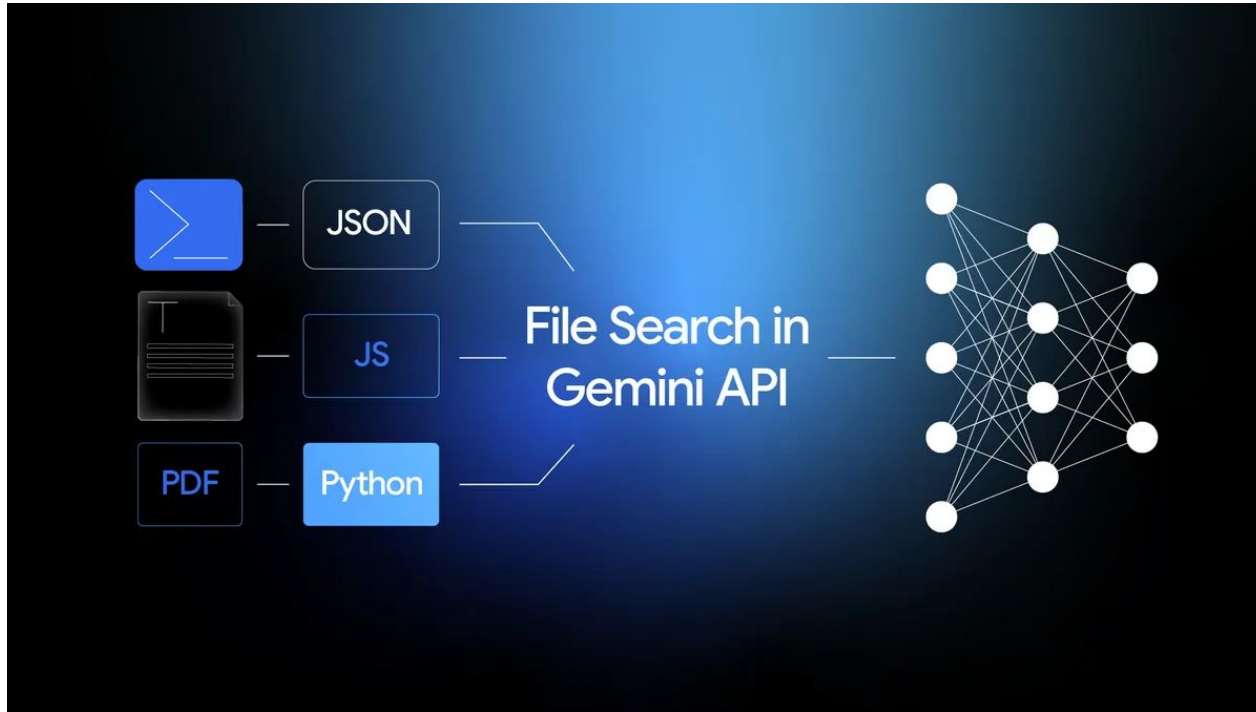
Computer Use Tool

The Gemini Computer Use model (preview) enables you to build browser control agents to automate tasks

Computer Use Tool



File Search Tool* – effortless RAG



*Currently only supported on Google AI API (Google AI Studio)

File Search Tool

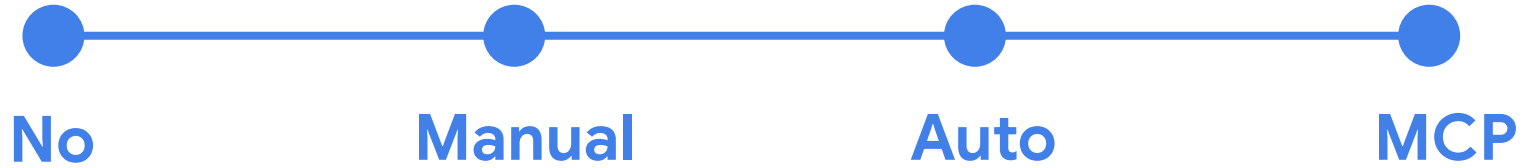
```
file_search_store = client.file_search_stores.create(  
    config={'display_name': 'your-fileSearchStore-name'})
```

```
client.file_search_stores.upload_to_file_search_store(  
    file='sample.txt',  
    file_search_store_name=file_search_store.name,  
    config={  
        'display_name' : 'display-file-name',})
```

File Search Tool

```
response = client.models.generate_content(  
    model="gemini-3.5-flash",  
    contents=""Can you tell me about [insert question]""",  
    config=types.GenerateContentConfig(  
        tools=[  
            types.Tool(  
                file_search=types.FileSearch(  
                    file_search_store_names=[file_search_store.name]  
                )  
            )  
        ]  
    )  
)
```

Custom Tools with Function Calling



Function Calling

```
def get_current_weather(location: str) -> str:  
    """Example method. Returns the current weather.
```

Args:

```
    location: The city and state, e.g. San Francisco, CA  
    """
```

```
weather_map: dict[str, str] = {  
    "Boston, MA": "snowing",  
    "San Francisco, CA": "foggy",  
    "Seattle, WA": "raining",  
    "Austin, TX": "hot",  
    "London, UK": "rainy and dark",  
}  
return weather_map.get(location, "unknown")
```

Automatic Function Calling

```
response = client.models.generate_content(  
    model="gemini-3.5-flash",  
    contents="What is the weather like in Austin?",  
    config=GenerateContentConfig(  
        tools=[get_current_weather],  
        temperature=0))
```

Gemini Deep Research Agent

Autonomously plans, executes, and synthesizes multi-step research tasks

It navigates complex information landscapes using web search or your own data to produce detailed, cited reports

Gemini Deep Research Agent


```
interaction = client.interactions.create(  
    input="Research the history of the Google TPUs.",  
    agent="deep-research-pro-preview-12-2025",  
    background=True  
)
```


```
while True:  
    if interaction.status == "completed":  
        print("\nFinal Report:\n",  
            interaction.outputs[-1].text)  
        break
```

Image & Text-to-Speech Generation

Image & Text-to-Speech Generation

Image generation models:

 `gemini-3-pro-image`

 `gemini-3.1-flash-image`

Text-to-speech models:

`gemini-3.1-flash-tts-preview`

`gemini-2.5-flash-tts`

`gemini-2.5-pro-tts`

Spatial Understanding

Spatial Understanding

Improved accuracy on 2D and 3D spatial understanding

Live API

Gemini Live API

Enables low-latency, two-way interactions

→ Input: text, audio, and video

← Output: audio and text

`gemini-live-2.5-flash-native-audio`

`gemini-3.1-flash-live-preview`

Gemini Live API—key capabilities

Multimodal – model can see, hear, speak

Low-latency – for realtime interaction

Memory – model remembers the session

Tools – Function calling, code execution, and Google search

Thank you

[codelabs.developers.google.com/
gemini-for-developers](https://codelabs.developers.google.com/gemini-for-developers)

Mete Atamel

Developer Advocate

Google Cloud

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speakerdeck.com/meteatamel

@meteatamel

