

# Prototyping with Gen AI

PaLM API, Makersuite & Flutter



# Who am I?

Founder of FlatteredWithFlutter



Engineer at ShopBack

Blogger, TechTuber and Speaker

Tech Writer @FlutterCommunity



# Agenda

Overview - MakerSuite and PaLM API



Chat and text services - PaLM API



Integrate endpoints with application - Flutter



Demo

# Setting Expectations

**This talk**

**Actual  
Concept**



```
Text(  
  'Simple Statement or URL',  
  style: TextStyle(  
    color: Colors.blue[200],  
  ),  
,  
,  
],  
/  
(  
  ons.star,  
  lor: Colors.blue[500],  
  t Text('23'),
```

@devfest

# Overview


## Makersuite & PaLM API





# A fast, easy way to start prototyping generative AI ideas


Pick a prompt type to get started working with the PaLM API. [Learn more](#)



## Text prompt

A freeform way to experiment with language models


Create



## Data prompt

A table that uses rows and columns to organize prompts

Create



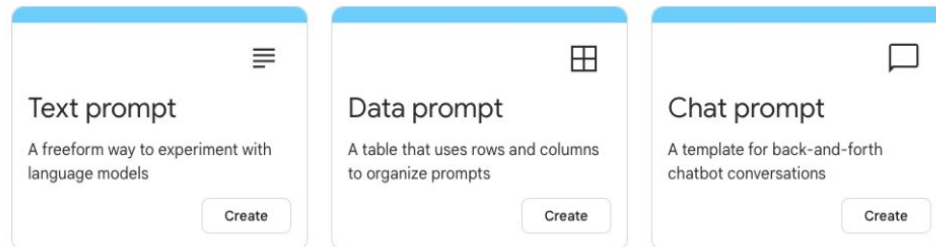
## Chat prompt

A template for back-and-forth chatbot conversations

Create

# Get Started with Makersuite (4 steps)

## 1. Pick Prompt Type



## 2. Provide examples

3 examples		
<input type="checkbox"/>	INPUT Sentence:	OUTPUT Sentiment:
<input type="checkbox"/>	I would like to walk along the beach.	Somewhat positive
<input type="checkbox"/>	I love my new record player	Positive

# Get Started with Makersuite (cntd)

## 3. Test your Prompt

✓ Test your prompt ⓘ

INPUT Sentence:		OUTPUT Sentiment:
1	What do you think about that game?	Neutral

[Enable API key](#) to develop with the PaLM API

You can call this prompt from our [PaLM API](#) by integrating the [documentation](#)

## 4. Get code

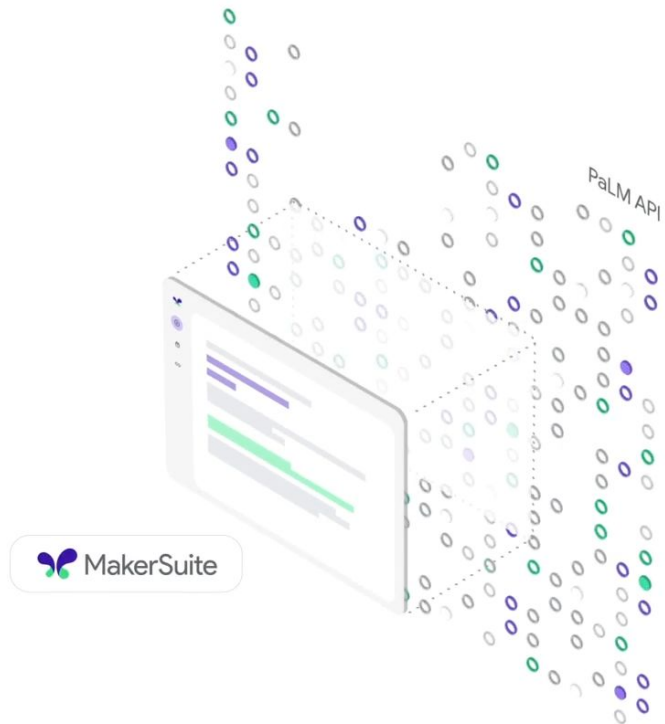
[Python](#) [JavaScript](#) [JSON](#) [cURL](#)



# PaLM API

Get access to LLMs like PaLM 2

Build gen AI apps for content generation, summarization, classification etc.



# PaLM API (cntd)

Use the REST APIs

Use PaLM REST API

- Text
- Chat
- Embeddings
- Tuning

Integrate with Google Services



# PaLM 2 Models



Gecko



Otter



Bison



Unicorn

- LightWeight
- For Mobile

- Mid sized
- 1.2 B params

- Used for gen text, answer questions etc

- Giant (1.5 T params)
- Under development

# How PaLM 2 is powering our generative AI features

## Meet Bard an early experiment by Google

### Bard

Meet Bard: your creative and helpful collaborator, here to supercharge your imagination, boost your productivity, and bring your ideas to life.

[Learn more](#) 



### PaLM API

Build generative AI applications using Google's next generation LLM.

[Learn more](#) 



### MakerSuite

A fast, easy way to start prototyping generative AI ideas and access the PaLM API.

[Learn more](#) 

```
Text(  
  'Simple Statement or URL',  
  style: TextStyle(  
    color: Colors.blue[200],  
  ),  
,  
,  
],  
/  
(  
  ons.star,  
  lor: Colors.blue[500],  
  t Text('23'),
```

@devfest

# Services - PaLM API

## Text & Chat Service



# Using Text VS Chat Service

## Text Service

- Single-turn interactions and tasks
- Use Cases: summaries or translations

## Chat Service

- Ongoing conversations, or multi-turn interactions
- Use Cases: Contextual conversations

# Prerequisite

Install npm dependencies

@google-ai/generativelanguage  
Google-auth-library

@google-ai/generativelanguage **TS**


1.1.0 • Public • Published 2 months ago

google-auth-library **TS**

9.2.0 • Public • Published 21 days ago

Get API Key from MakerSuite

Note: The Gemini API is currently in public preview. Production applications are not supported.

 Create API key in new project

or

Create API key in existing project

# Text Service (PaLM API)

Create **text-prompt.js** file

JS chat-prompt.js

JS index.js

package.json

README.MD

JS text-prompt.js

Use **TextServiceClient** for sending prompts

```
const client = new TextServiceClient({  
  authClient: new GoogleAuth().fromAPIKey(process.env.API_KEY),  
});
```



# Text Service *(cntd)*

## **generateText:**

Generate text completions

**model:** text-bison-001

**promptString:** text prompt to  
generate completion

**max\_output\_tokens:**  
number of tokens model  
generates

```
const generateText = async (promptString) => {  
  const result = await client.generateText({  
    model: "models/text-bison-001",  
    max_output_tokens: 1024,  
    prompt: {  
      text: promptString,  
    },  
  });  
  
  return result;  
};
```

PROBLEMS

DEBUG CONSOLE

OUTPUT

TERMINAL

+ v ... ^ x

○ aseem.wangoo@ITSBSG457-MAC google-gen-ai % npm run server

> zsh

> zsh

# Chat Service (PaLM API)

Create **chat-prompt.js** file

**JS** chat-prompt.js

**JS** index.js

**npm** package.json

**M↓** README.MD

**JS** text-prompt.js

Use **DiscussServiceClient** for sending prompts

```
const client = new DiscussServiceClient({  
  authClient: new GoogleAuth().fromAPIKey(process.env.API_KEY),  
});
```

# Chat Service *(cntd)*

## **generateMessage:**

For conversational chat

**model:** chat-bison-001

```
const chatConversationText = async (messages) => {  
  const result = await client.generateMessage({  
    model: MODEL_NAME,  
    prompt: {  
      messages,  
    },  
  });  
  
  return result;  
};
```

## Chat Service *(cntd)*

Add messages to context

```
const prompt = req.body.prompt;
chatContext.push({ content: prompt });

const response = await chatApi.callConvoApi(chatContext);
```

Add response to context

```
if (respContent !== undefined) {
  chatContext.push({ content: respContent });
}
```



# Integrate with Flutter





# Flutter

beautiful, fast, productive and  
open UI toolkit for any screen

[flutter.dev](https://flutter.dev)



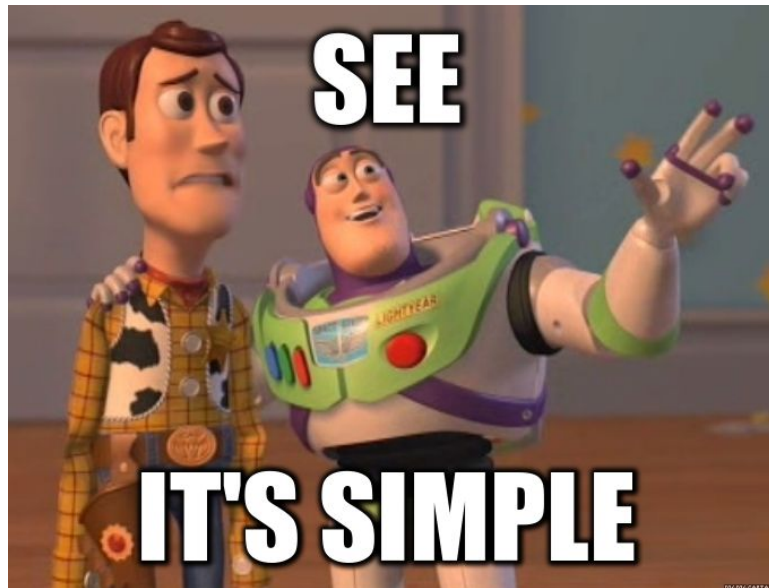
# Dart

client-optimized language for  
fast apps on any platform

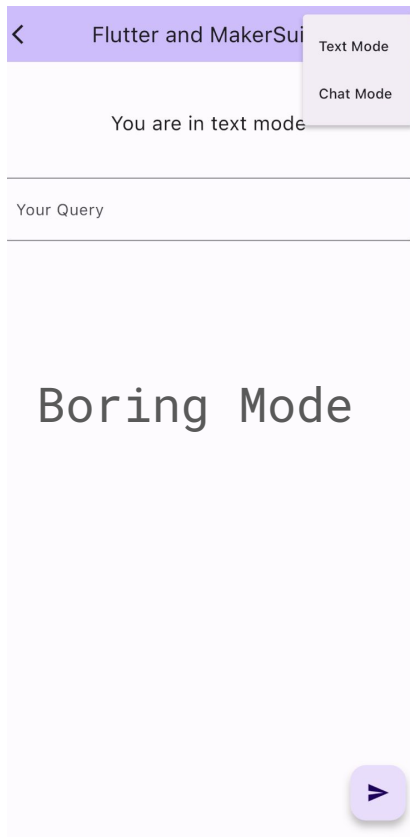
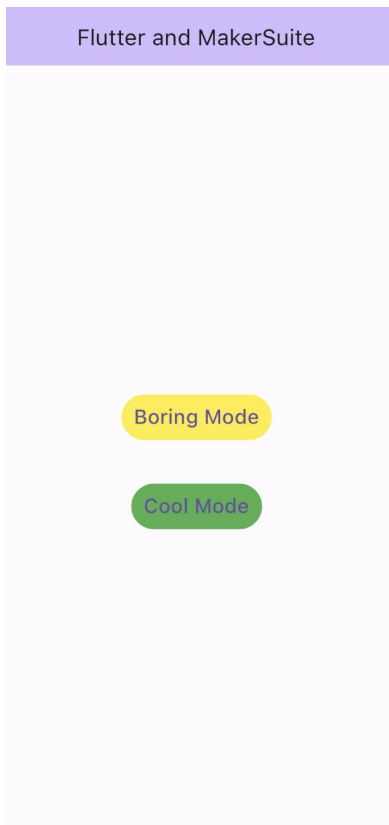


# Integrate in Flutter (3 steps)

1. Create Flutter Project
2. Send queries/prompts from Dart (Flutter) to PaLM API endpoints
3. Show response on UI



# 1. Create Flutter Project



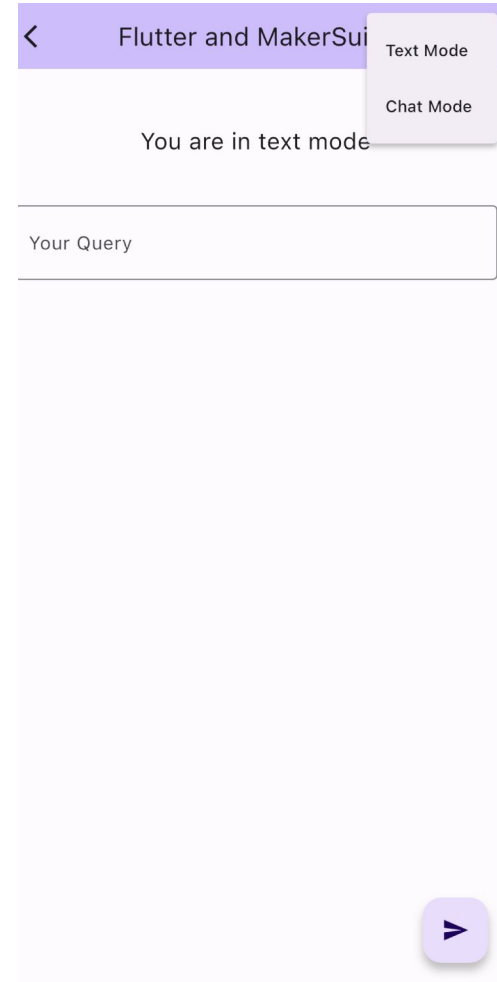
## 2. Send Prompts

Supports

**Text Mode:** Single interactions

**Chat Mode:** Contextual conversations

User types query and sends



### 3. Show response

You are in text mode

Your Query

**Query:**  
Hello how are you

**Response:**  
I am doing well. Thank you for asking!

Text Service

You are in chat mode

Hello how are you

**Google Bard**

I am doing well, thank you for asking! I am excited to be able to help people with their tasks and to learn more about the world. How are you doing today?

Chat Service

Two yellow, pill-shaped Minions from the Despicable Me franchise are shown from the waist up. They are both wearing blue denim overalls with a black 'G' logo on the chest and black goggles with silver frames. The Minion on the left is waving with its right hand, while the Minion on the right is waving with its left hand. They are both smiling broadly, showing their teeth. The background is a dark, industrial-looking setting with metallic surfaces.

**DEMO TIME**

Thank you !! 🙏

