



生成式 AI：文字與圖像生成的原理與實務

【特別篇】

Vibe Coding

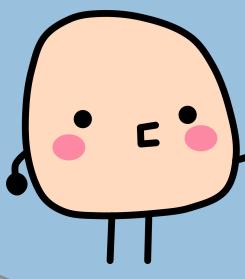


蔡炎龍
政治大學應用數學系



01.

Vibe Coding 是什麼



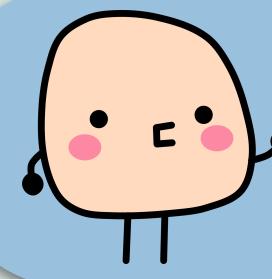
Vibe Coding 是什麼呢？

 Andrej Karpathy ✅
@karpathy

There's a new kind of coding I call "vibe coding", where you fully give in to the vibes, embrace exponentials, and forget that the code even exists. It's possible because the LLMs (e.g. Cursor Composer w Sonnet) are getting too good. Also I just talk to Composer with SuperWhisper so I barely even touch the keyboard. I ask for the dumbest things like "decrease the padding on the sidebar by half" because I'm too lazy to find it. I "Accept All" always, I don't read the diffs anymore. When I get error messages I just copy paste them in with no comment, usually that fixes it. The code grows beyond my usual comprehension, I'd have to really read through it for a while. Sometimes the LLMs can't fix a bug so I just work around it or ask for random changes until it goes away. It's not too bad for throwaway weekend projects, but still quite amusing. I'm building a project or webapp, but it's not really coding - I just see stuff, say stuff, run stuff, and copy paste stuff, and it mostly works.

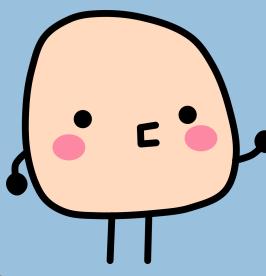
2025 年 2 月 Andrej Karpathy 在 X 的貼文，創了 Vibe Coding 這個新詞彙。





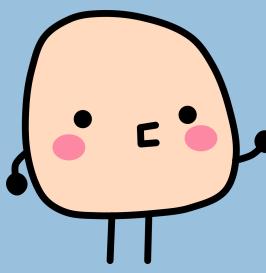
原版 Vibe Coding 全文 I

There's a new kind of coding I call "vibe coding", where you fully give in to the vibes, embrace exponentials, and **forget that the code even exists**. It's possible because the LLMs (e.g. Cursor Composer w Sonnet) are getting too good. Also I just talk to Composer with SuperWhisper so I barely even touch the keyboard. I ask for the dumbest things like "decrease the padding on the sidebar by half" because I'm too lazy to find it. I **"Accept All"** always, I **don't read the diffs** anymore.

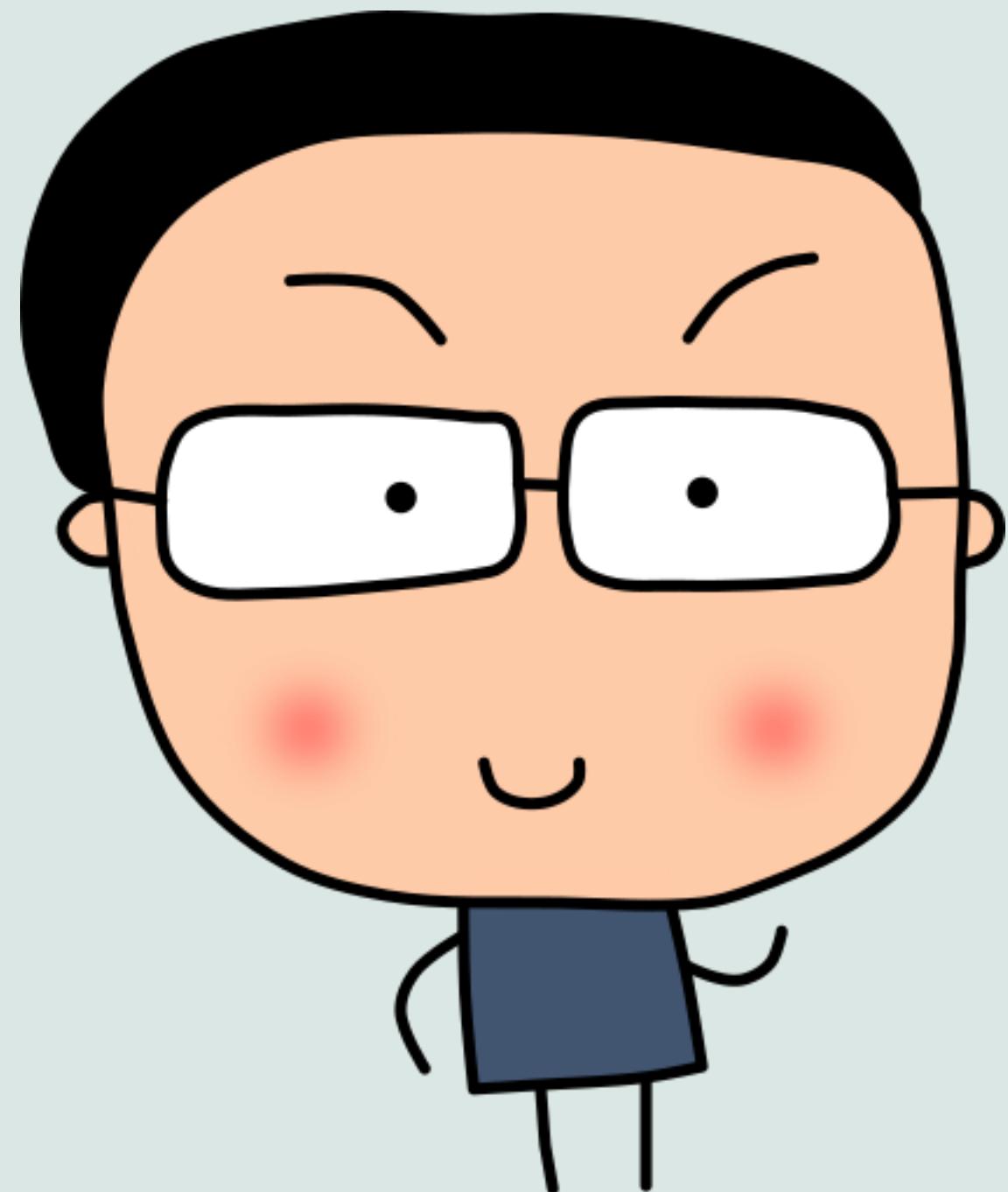


原版 Vibe Coding 全文 II

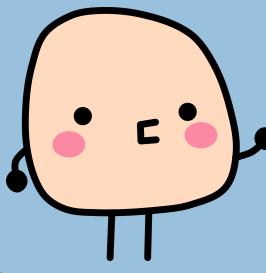
When I get error messages I just copy paste them in with no comment, usually that fixes it. The code grows beyond my usual comprehension, I'd have to really read through it for a while. Sometimes the LLMs can't fix a bug so I just work around it or ask for random changes until it goes away. It's not too bad for throwaway weekend projects, but still quite amusing. I'm building a project or webapp, but it's not really coding - I just see stuff, say stuff, run stuff, and copy paste stuff, and it mostly works.



Vibe Coding 重點

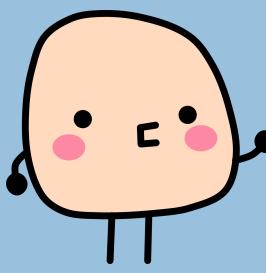


- ① 忘了有程式碼這件事
- ② 不要幫 AI 檢查程式碼
- ③ 有錯就叫 AI 改
- ④ 最高級的技巧是 Copy & Paste
- ⑤ 完全不看程式、不改程式

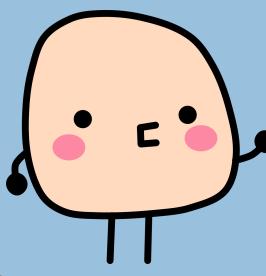


Vibe Coding 並不是「AI 輔助寫程式」

Vibe Coding \neq AI 輔助寫程式



Vibe coding (也寫作 vibecoding) 是一個最近創造的術語，指的是通過告訴 AI 程式你想要什麼，讓它為你創建產品的編碼、製作網頁或開發應用程式。在 vibe coding 中，**程式設計師不需要理解程式碼如何或為何運作，且通常必須接受存在一定數量的錯誤和故障**。該詞的動詞形式是 vibe code。



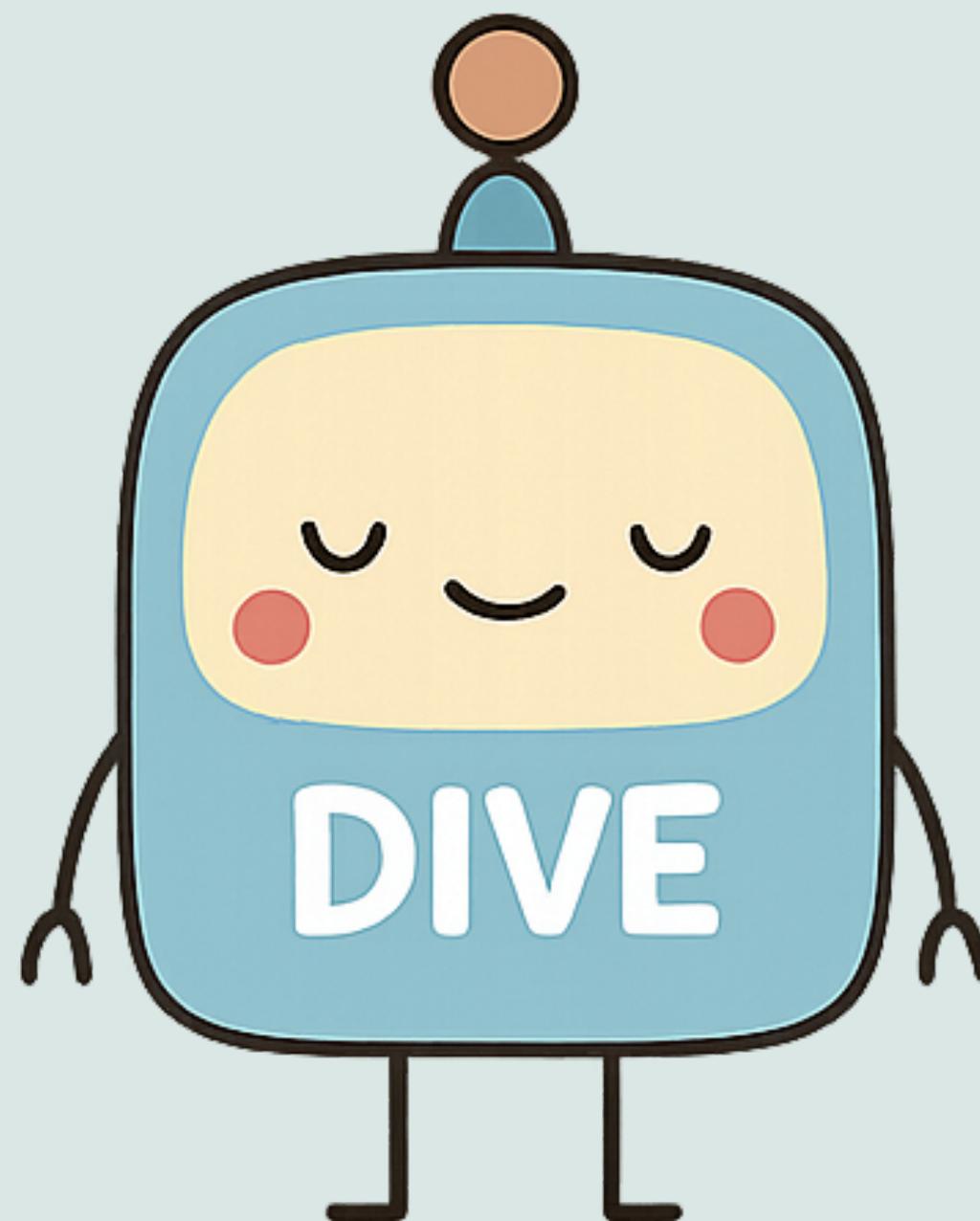
Vibe Coding 應該怎麼翻呢？

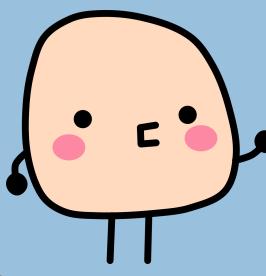
隨興程式設計法

擺爛程式程式設計法

要廢式程式設計

直覺流程式設計

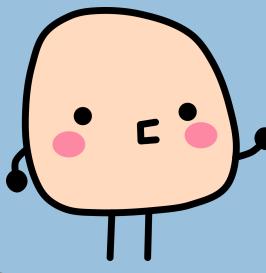




Vibe Coding 適合什麼呢？

- 週末好玩的小專案 (Karpathy)
- 給自己使用，出錯不會怎樣的小工具
- 試做的原型，和程式設計師討論

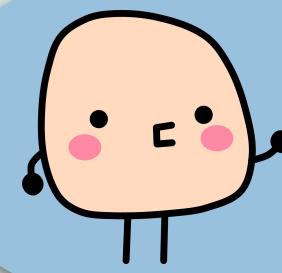




Vibe Coding 什麼不適合呢？



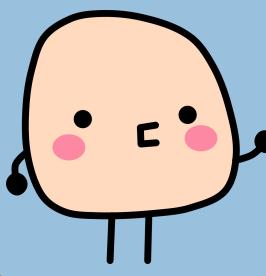
- 要正式上線的程式 (所以不是有 Vibe Coding 老闆就可以 fire 掉工程師)
- 不檢查可能會出亂子的程式



Andrej Karpathy – AGI is Still a Decade Away



<https://www.youtube.com/@DwarkeshPatel>



Karpathy: 寫程式分三類

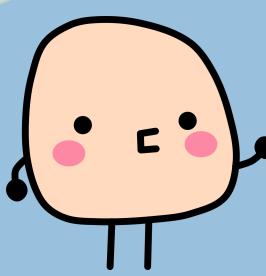
- ① 純手工、零 LLM 介入
- ② 程師設計師仍然是你所寫內容的架構師，
LLM 會協助補完
- ③ Vibe Coding: 告訴電腦「嗨，請實作這個
或那個」，按下 Enter，然後讓模型去做



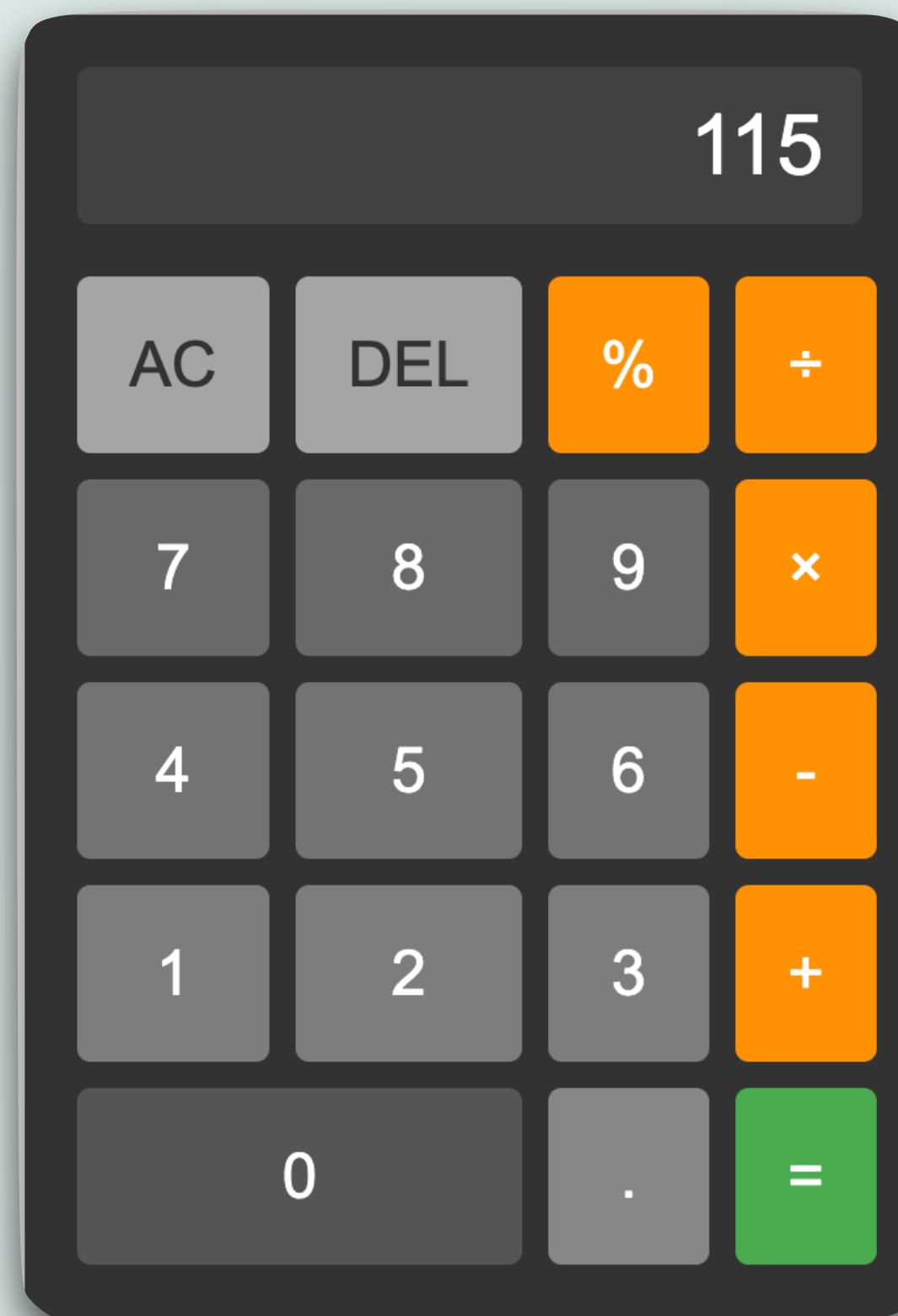


02.

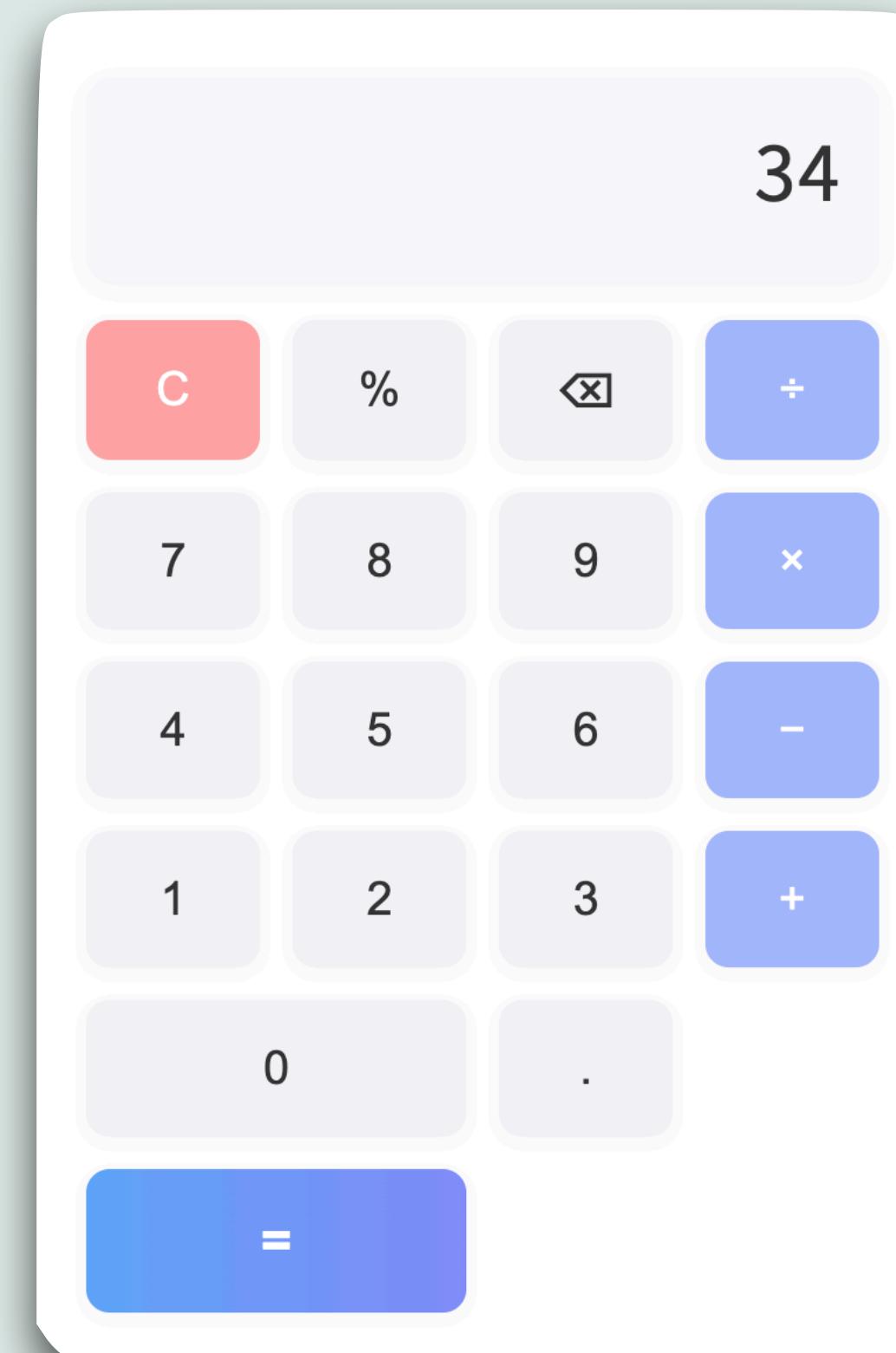
用什麼 Vibe Coding 呢？



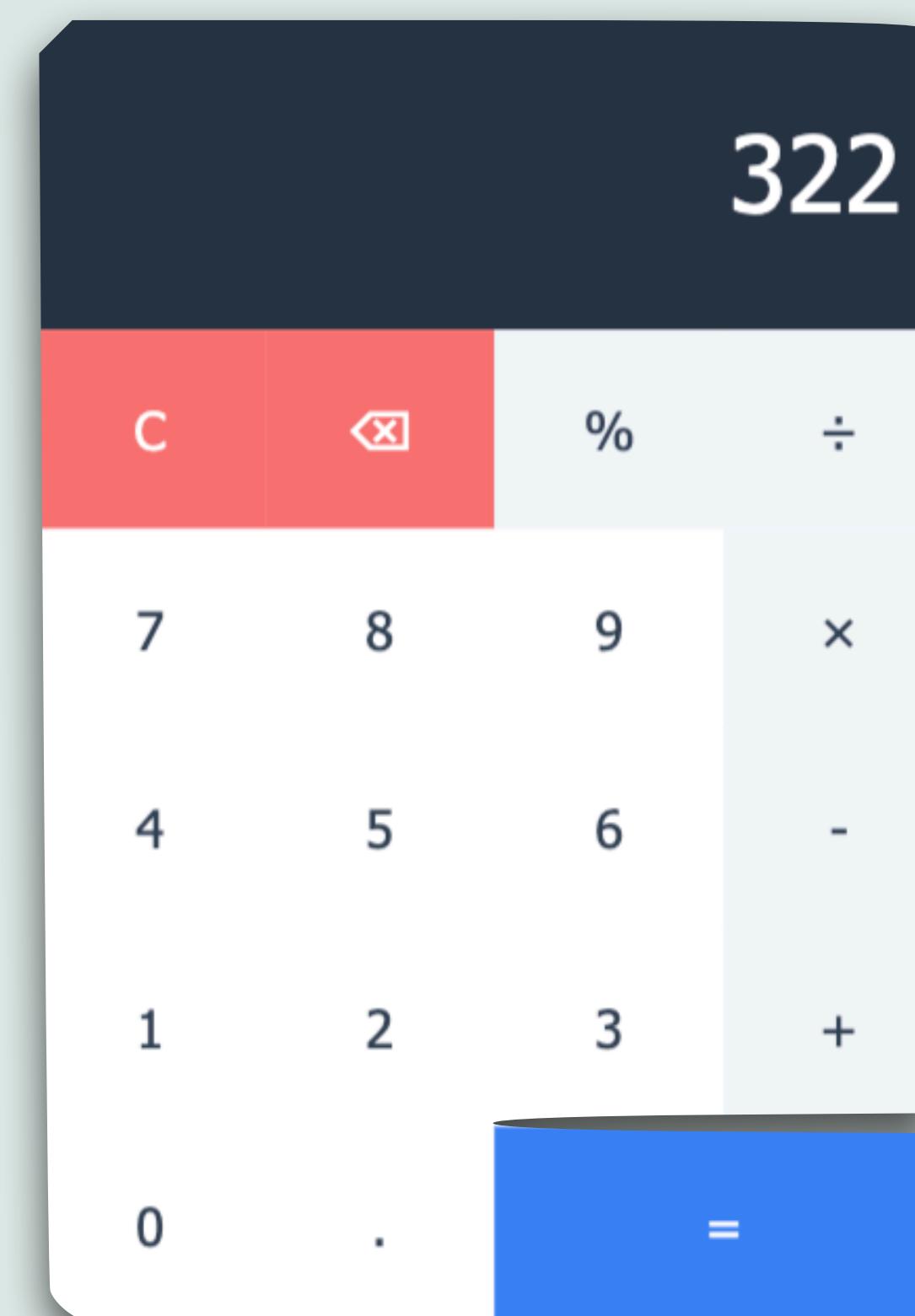
一般來說大家會推薦「專用」編輯器



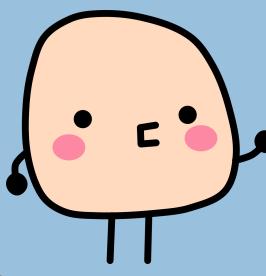
Windsurf



Cursor



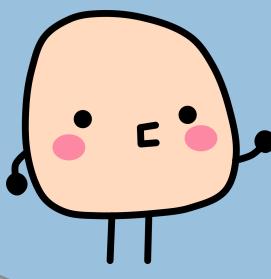
Canva



當然還有上次助教介紹的 Lovable

The screenshot shows the Lovable AI interface. At the top, there is a navigation bar with the Lovable logo, Community, Pricing, Enterprise, Log in, and Get started buttons. The main heading reads "Build something ❤️ Lovable" with the subtext "Create apps and websites by chatting with AI". Below this is a large input field containing the placeholder text "Ask Lovable to create a landing page for my...". Underneath the input field are several buttons: a plus sign button, an "Attach" button, a "Public" button, a microphone icon, and an upward arrow icon.

<https://lovable.dev/>

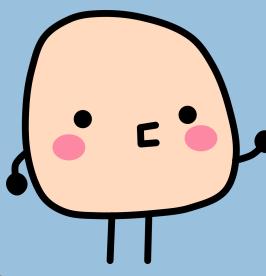


我們會用 Gemini, 因為...

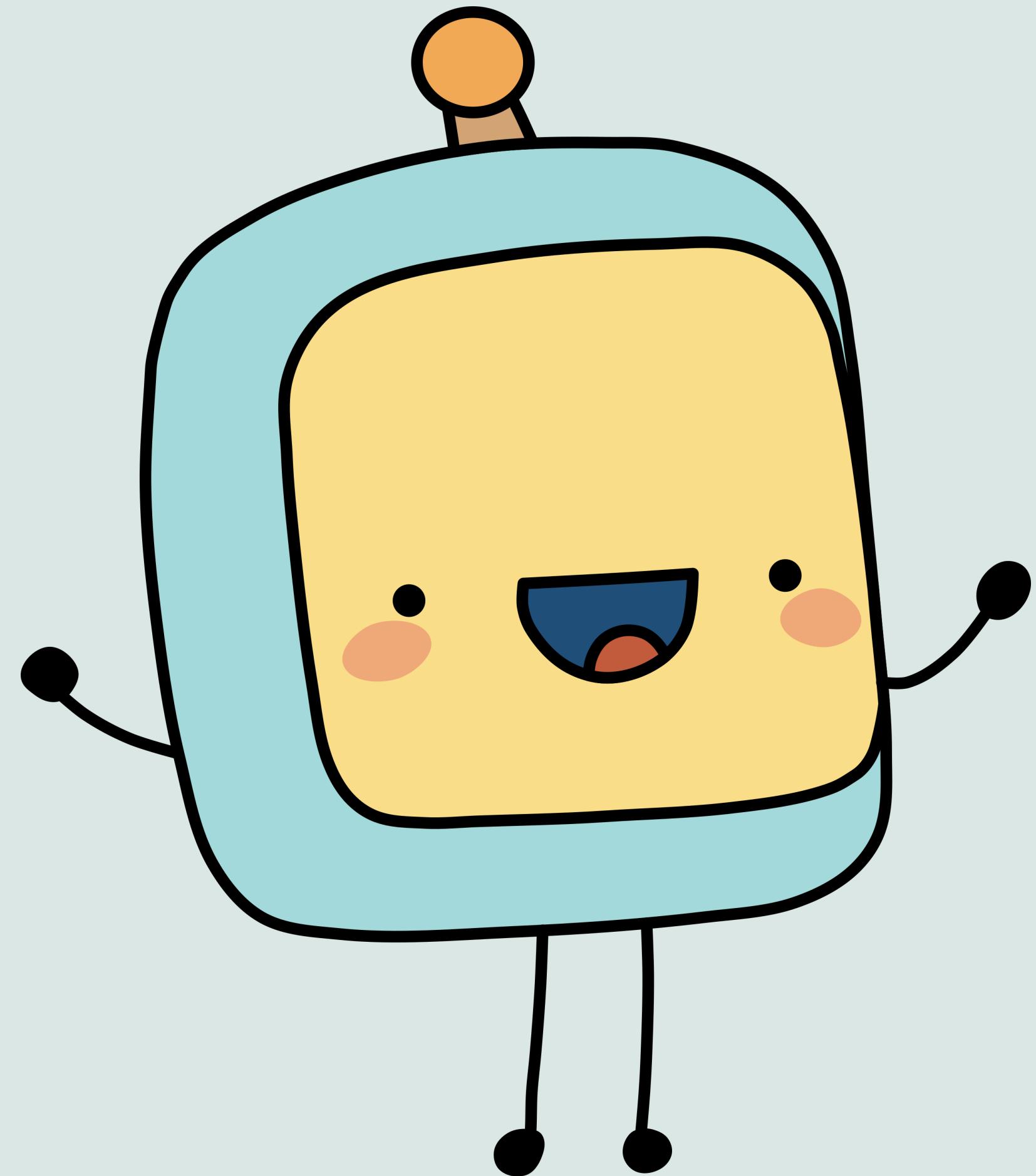


The image shows a promotional banner for Google Gemini. At the top left is the Gemini logo (a colorful diamond shape followed by the word "Gemini"). At the top right is a three-line menu icon. The main title is "Google Gemini : 學生可免費使用 Pro 方案", where "免費" and "Pro 方案" are in blue. Below the title is a paragraph of text: "免費使用 1 年。盡情對話、上傳圖片及生成測驗，使用 2.5 Pro 模型、Deep Research 和語音摘要功能還可享有更高權限，外加 2 TB 儲存空間。學生獨享，優惠期限：2025年12月9日。" At the bottom are two buttons: a blue rounded rectangle with white text that says "取得優惠" and a smaller white button with blue text that says "適用相關條款".

取得優惠 適用相關條款



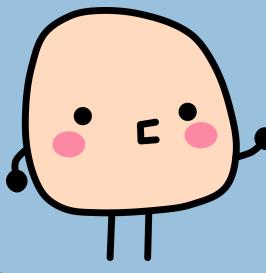
從三個角度帶大家 Vibe Coding!



- ① 寫一個在 Colab 上跑的 Python 程式
- ② 寫一個可以在瀏覽器上跑的程式
- ③ 用 Apps Script 配合 Google 服務寫一個應用



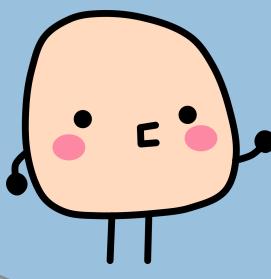
03. 在 Colab 寫個 Python 程式



範例: RGB 顏色選色



寫一個在 Colab 上執行的 Python 程式: 讓使用者可以拉三個數值滑桿, 調整 RGB 的強度, 用一個色塊顯示相對的顏色, 並且顯示顏色的 HEX: #xxxxxx, 讓使用者可以直接 copy 使用。



冒險01

RGB 顏色選擇器

Red (紅): 219

Green (綠): 194

Blue (藍): 103



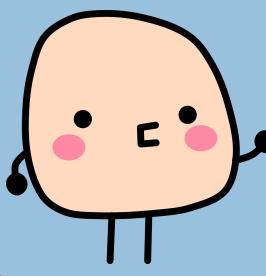
HEX: #DBC267

RGB: (219, 194, 103)



04.

寫個網頁 App



網頁程式



HTML

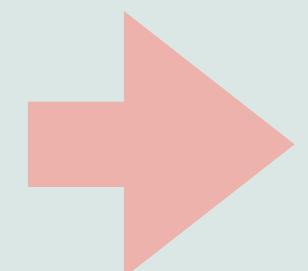
網頁的基本內容

CSS

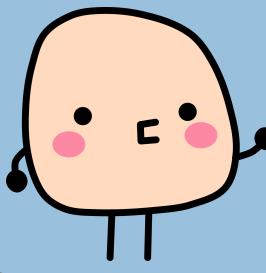
網頁的排版

JavaScript

可在網頁執行的語言



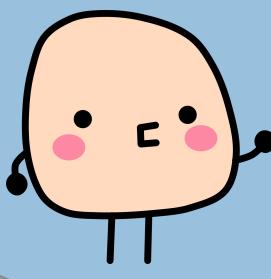
可以寫成一個單一的 HTML 檔



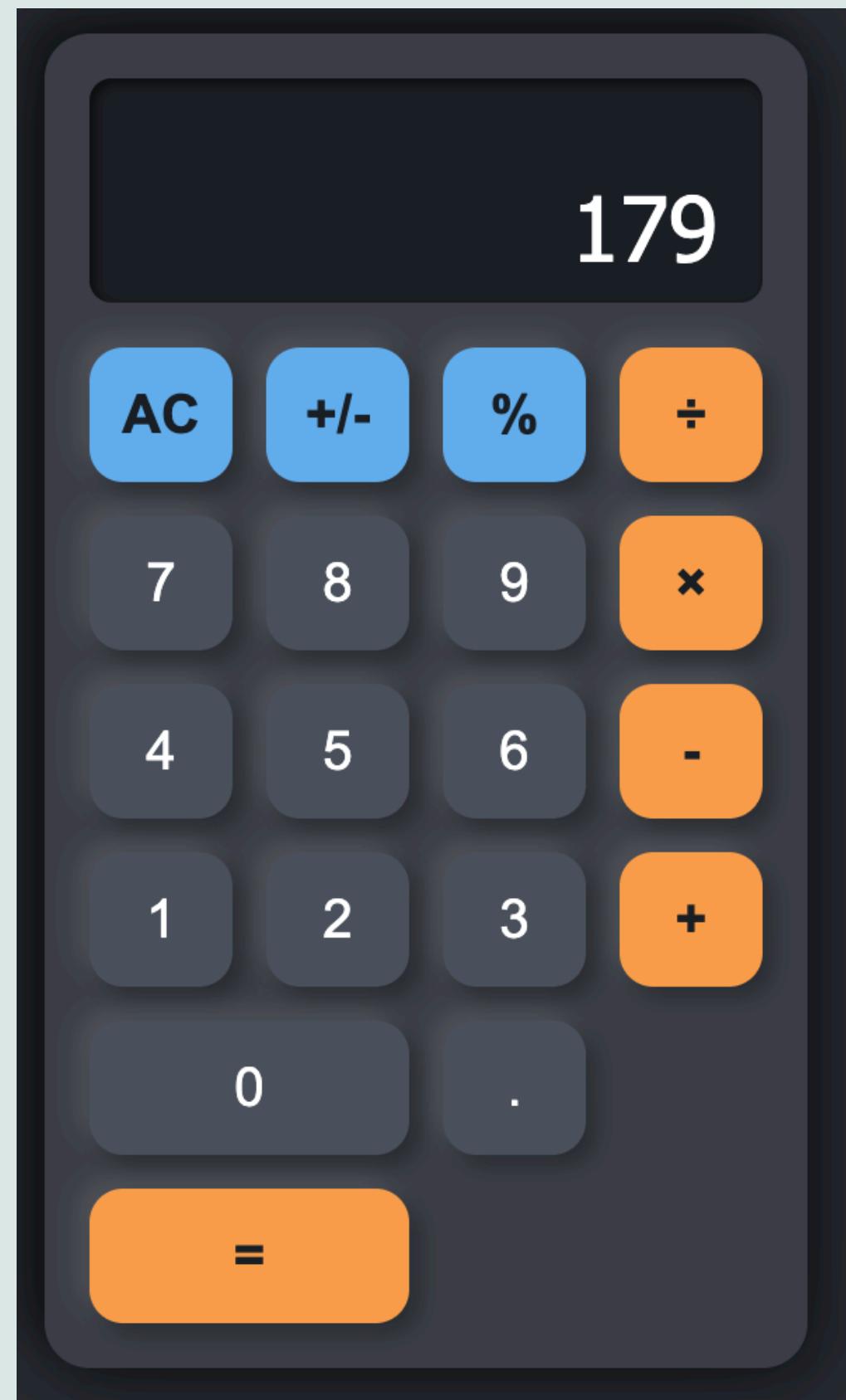
範例: RGB 顏色選色



使用 HTML + CSS + JavaScript, 寫一個單一的 HTML 檔: 做一個簡單、但看起來質感很高的計算機。



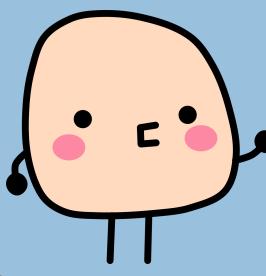
可以使用看看有沒有問題





05.

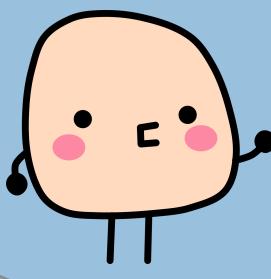
Apps Script



什麼是 Apps Script?

Google Apps Script (GAS) 是一個基於 **JavaScript** 的雲端腳本語言，它讓您能夠在 **Google 生態系統** 中建立輕量級的應用程式和自動化流程，可以做比說：

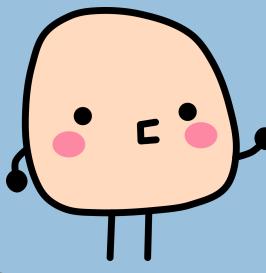
- 試算表功能擴展：可以新增自訂選單、按鈕或自訂函式。
- 自動化流程：例如每天定時發送郵件、當表單提交時自動在日曆上建立事件。
- 網路應用程式：可以用來建立簡單的網頁介面，作為數據輸入或顯示的工具。



直接的連結



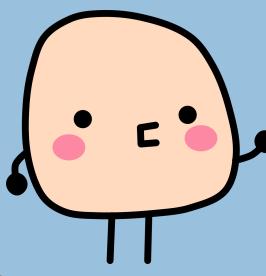
<https://script.google.com/>



範例：計算字數的 web app



我想用 Google Apps Script 打造一個有型、深色模式的網頁工具：它只有一個大大的輸入框，當我點擊按鈕時，可以立刻計算我輸入了多少個詞彙。



打造出來的成品

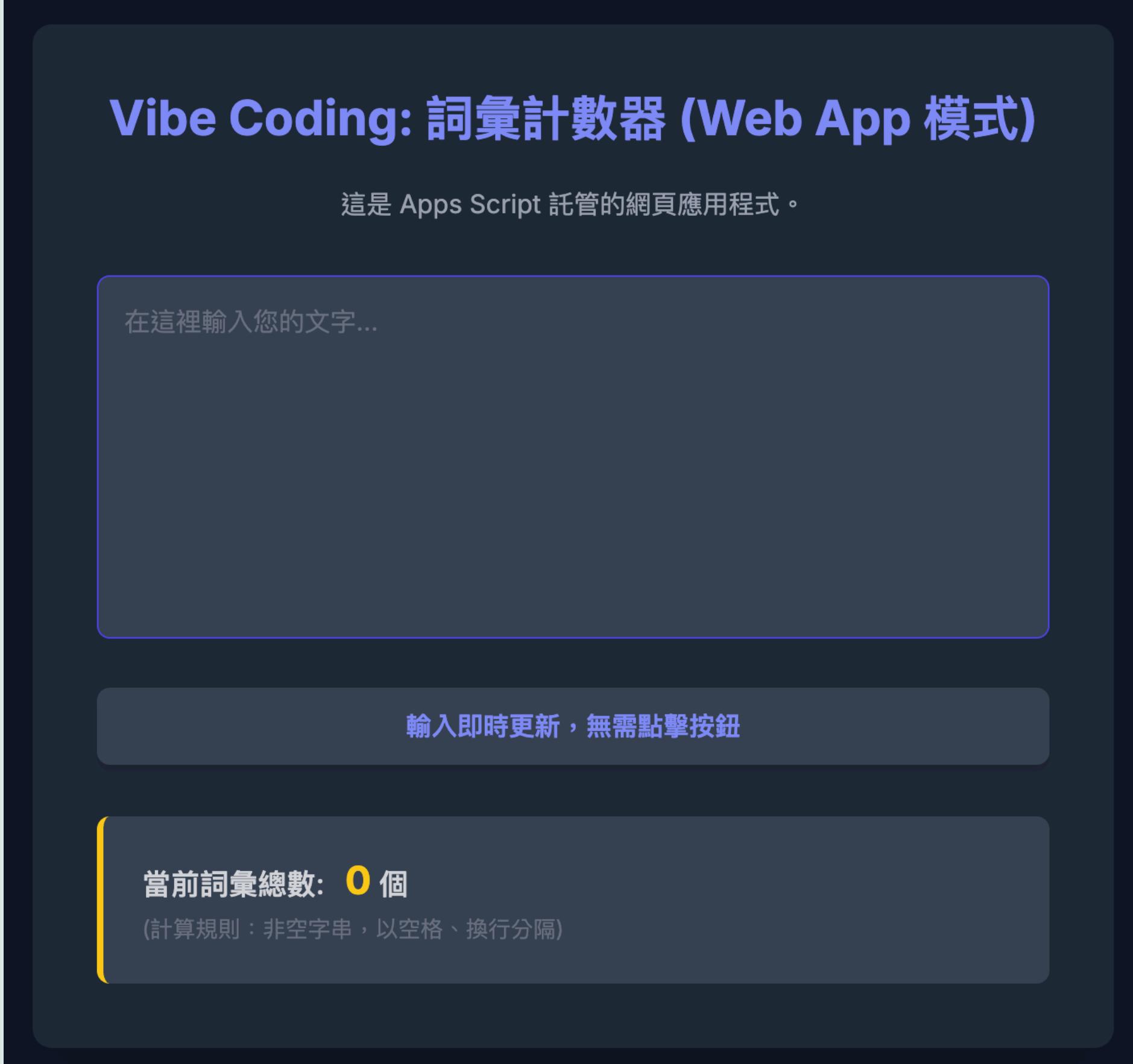
Vibe Coding: 詞彙計數器 (Web App 模式)

這是 Apps Script 託管的網頁應用程式。

在這裡輸入您的文字...

輸入即時更新，無需點擊按鈕

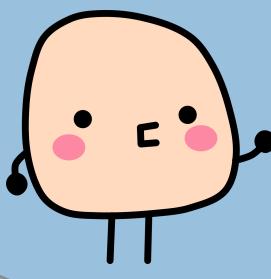
當前詞彙總數: **0** 個
(計算規則：非空字串，以空格、換行分隔)



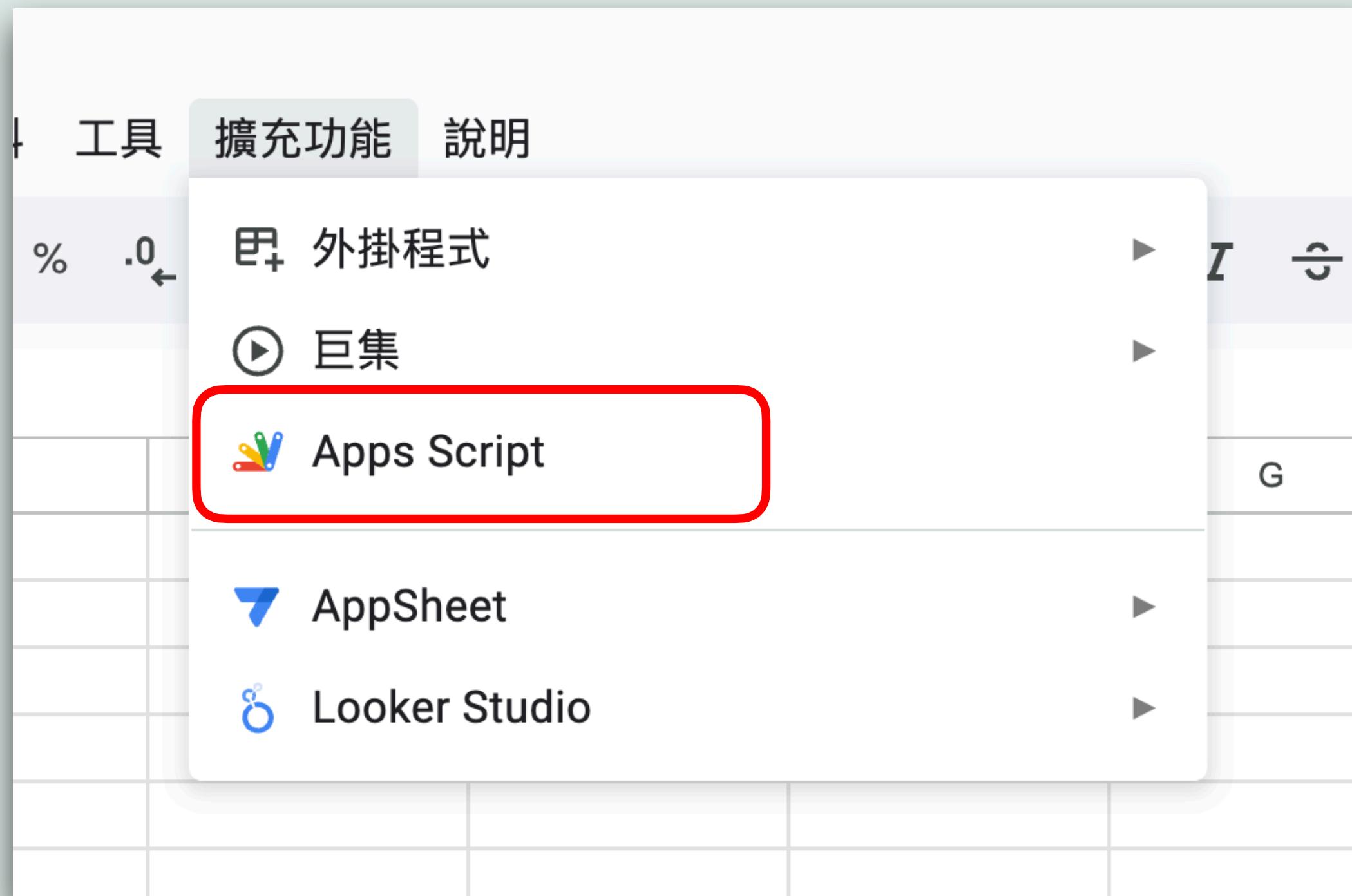
部署

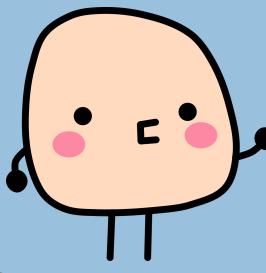
>

網路應用程式



配合 Google Spreadsheet

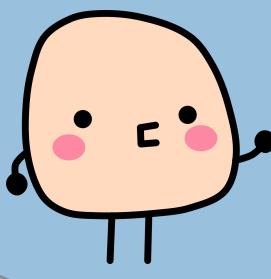




範例: 在儲存格加入日期



在 Spreadsheet 目前的儲存格，希望在選單中按加入日期，就會在那個儲存格加入今天的日期。



Q & A

