

# 人人皆開發：

## AppSheet 無程式碼開發教學(上)

CloudMile 萬里雲





# Speaker



**Jerry Chen**

解決方案架構師

# No-Code / Low-Code 全球趨勢

根據 Gartner, Inc. 的最新預測，全球低代碼開發技術市場預計到 2023 年將達到 269 億美元，相比 2022 年增長 19.6%。

越來越多企業轉向低代碼開發技術，以應對快速變化的需求並建立靈活的商業規劃，預估在 2026 年，此需求將成為推動低代碼技術被大量應用的主因。

Gartner 預測在 2026 年傳統 IT 部門以外的開發者將佔 No-Code / Low-Code 工具使用者的 80%。

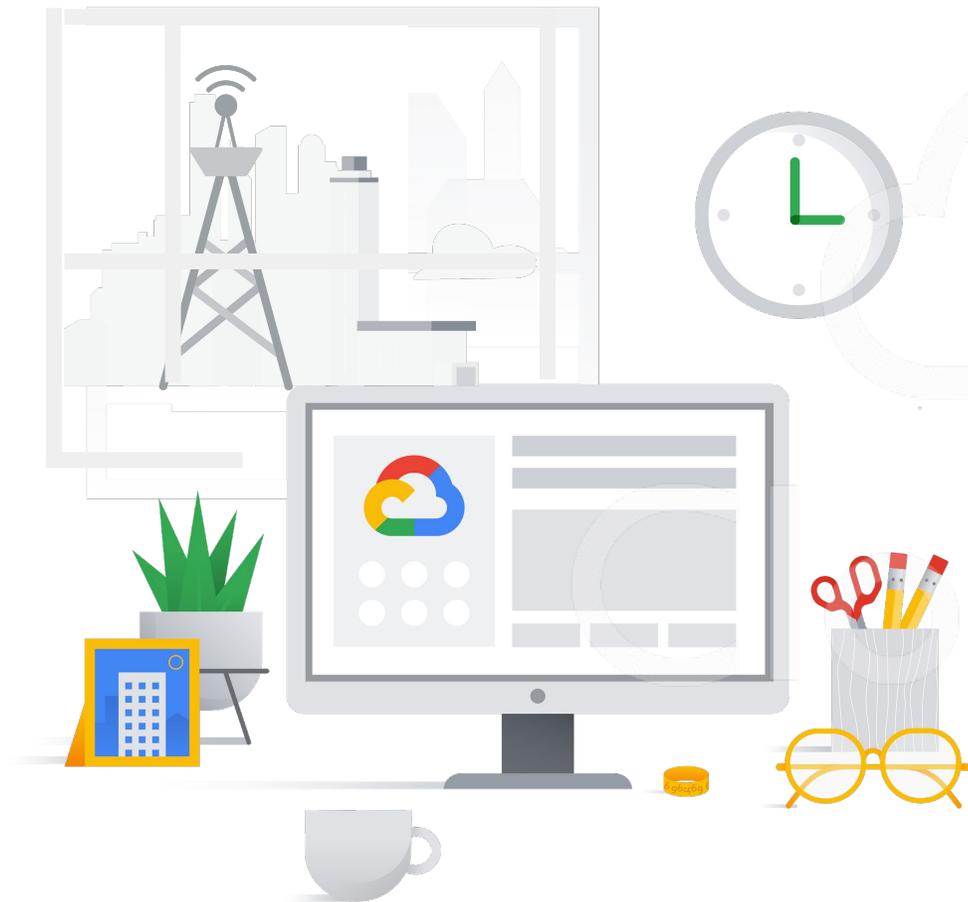
資料來源：Gartnet

<https://www.gartner.com/en/newsroom/press-releases/2022-12-13-gartner-forecasts-worldwide-low-code-development-technologies-market-to-grow-20-percent-in-2023>

<https://www.gartner.com/en/newsroom/press-releases/2021-02-15-gartner-forecasts-worldwide-low-code-development-technologies-market-to-grow-23-percent-in-2021>

# Agenda

- ✓ AppSheet 用途 / 特色
- ✓ AppSheet 應用案例
- ✓ AppSheet 介面導覽與熟悉
- ✓ APP運行和測試



# 理解



AppSheet用途 / 特色



實務應用場景



需求探索



設計構思

# 操作



介面邏輯



七大步驟



建立資料模型



簡單App製作

# 案例探討: BHI

## Workspace 和 AppSheet 節省了 10% 的 IT 支出

### ❖ 關於BHI

BHI是一家在美國26個州持有執照的總建設承包商，在建設管理方面具有廣泛的專業知識，承包土木和挖掘工程、設施和管道、儀器和電氣以及無線通信等業務。

### ❖ 營業項目

BHI的項目遍布全美國，包括弗吉尼亞和佛羅里達的太陽能項目，以及加利福尼亞、德克薩斯、北達科他等地的設施建設管理等。

### ❖ 組織成員

90%的工作人員是非辦公室人員，包括電工、技師、司機和重型設備操作員等職位。



**Region:** NORTHAM  
**Industry:** Manufacturing & Industrials  
**Function:** Inspections, Audits & QA  
**Customer Size:** 100+  
**Name:** BHI

# AppSheet 簡介

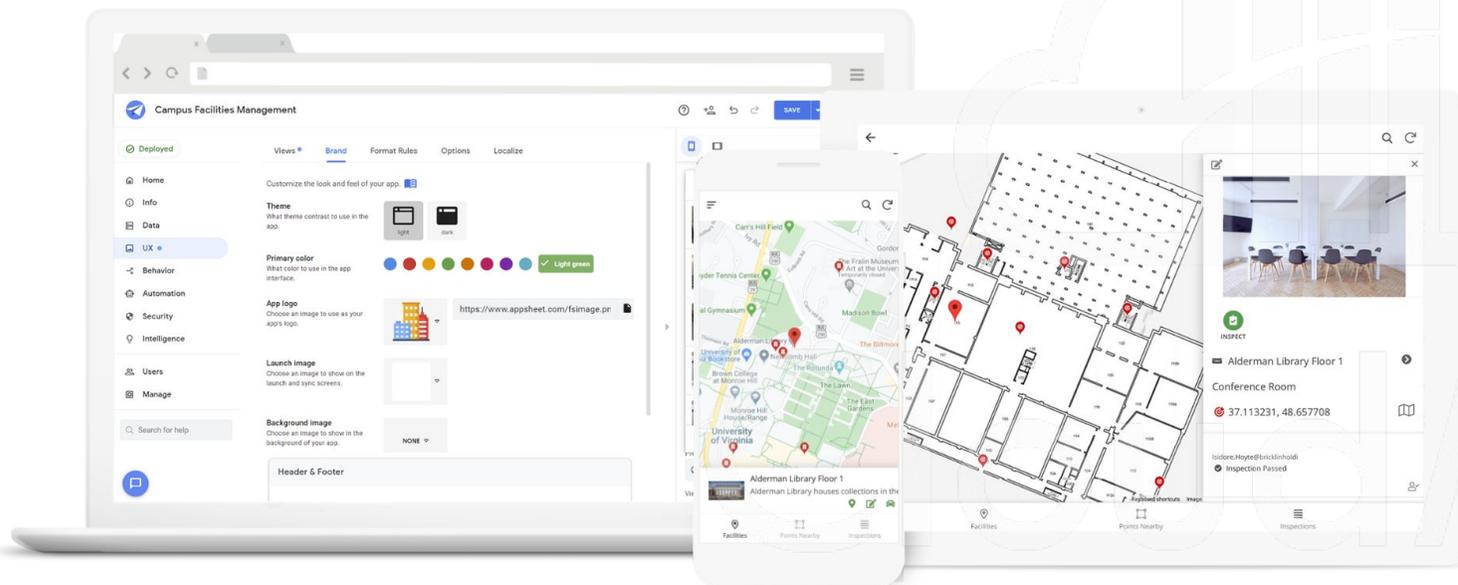


# AppSheet: 使用 No-Code / Low-Code 平台, 協助企業獲取更多的時間與人力

使用 **APP** 和 **自動化簡化** 工作, 讓員工更智能、更高效地工作。

通過 **任何人** 都可以學習的 No-Code 平台縮短實現價值的時間

構建與您已經使用的 **APP** 與 **資料**, 定義解決方案



# 傳統開發與無代碼(低代碼)應用程序開發



# 工具的開發總是被誤以為簡單



# 但事實上卻是...



針對每個部門，如：業務、行銷、  
維運，公司內部存在多個大型的  
系統



除了大型系統之外，是否有另外的工具或應用程式？如：流程管理工具、簽核工具、回報工具

這些應用程式在哪裡？

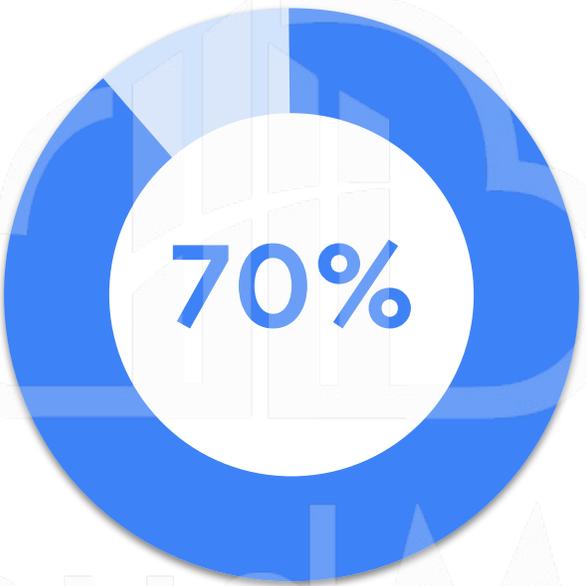


# 關於 Frontline Workers

- 沒辦法坐在辦公室工作
- 主要使用行動裝置
- 70-80% 的員工還是使用紙本表單(可能還有資安疑慮)
- 紙本的模式導致大量的文書工作和簽核, 效率低下(複雜的任務步驟, 尤其是對於新員工)



他們需要更多小工具  
來完成繁雜的日常作業  
或業務



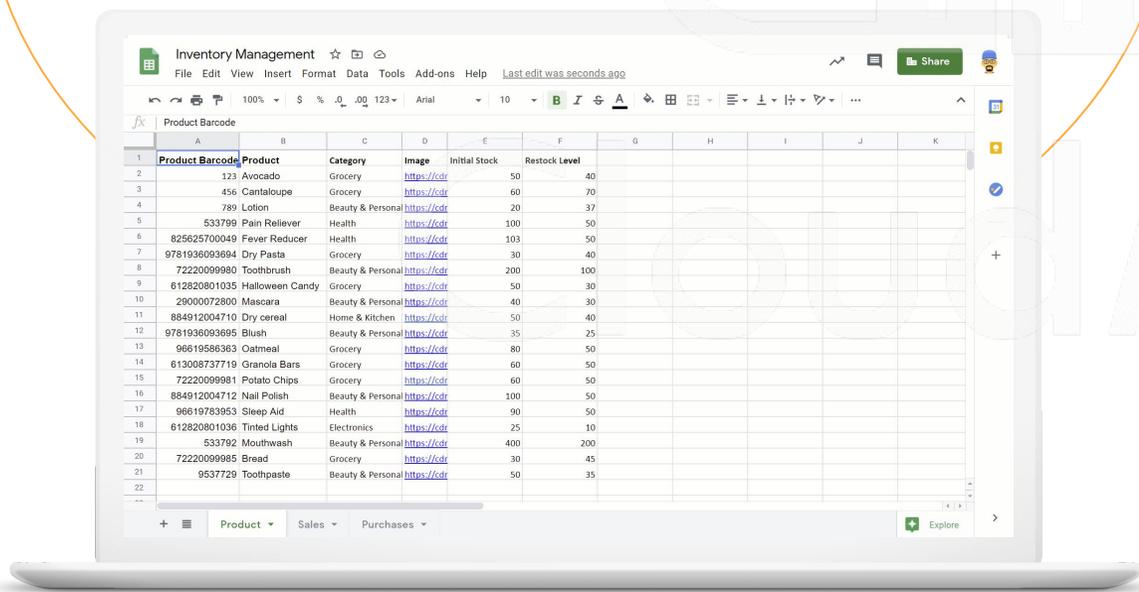
70%

的前線員工表示，更多  
新技術的導入能幫助  
他們把工作做得更好

CloudMile

# 在最短時間內完成開發

Use the power of no-code to move faster from idea to solution

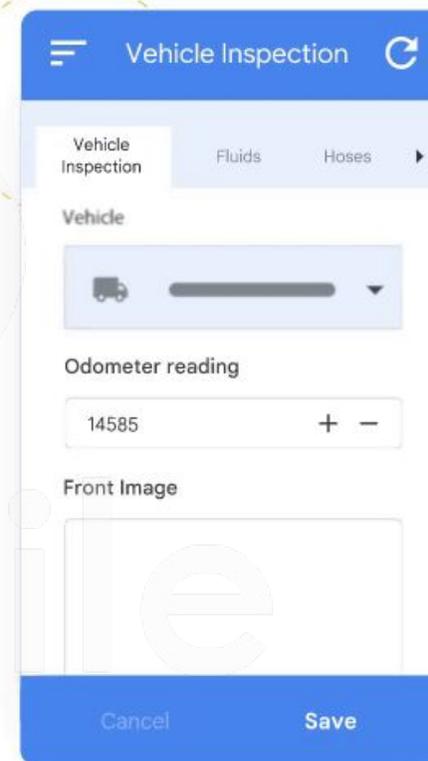


- ✓ 有想法立即付諸行動
- ✓ 簡化工作
- ✓ 縮短時間
- ✓ 客製化需求

# 智能的無程式碼平台

*A smarter way to work, built by you*

- ✕ 無需撰寫程式碼 任何團隊成員都可以創建 App
- 🔗 提供絕佳用戶體驗與客製化功能
- 📄 作為第一線的平台，收集表單、二維碼、定位、簽名等資
- 🔒 基於角色的安全性、身份驗證和來管理員工帳號

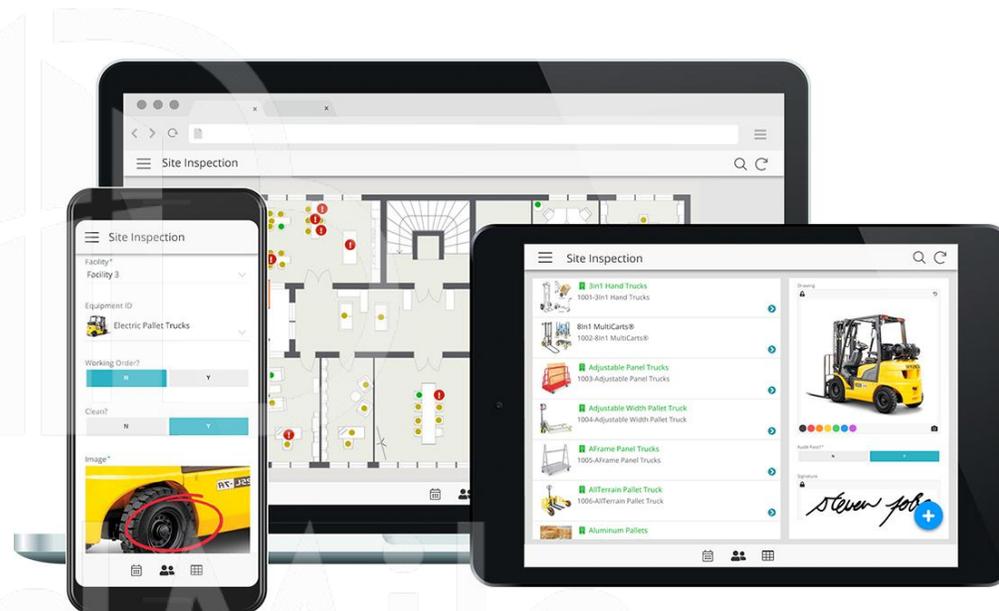


The screenshot shows a mobile application interface for 'Vehicle Inspection'. The title bar is blue with a white hamburger menu icon on the left and a white refresh icon on the right. Below the title bar, there are three tabs: 'Vehicle Inspection' (selected), 'Fluids', and 'Hoses'. The 'Vehicle' section contains a dropdown menu with a truck icon and a downward arrow. Below this is an 'Odometer reading' section with a text input field containing '14585' and '+' and '-' buttons. The 'Front Image' section has a large empty rectangular area. At the bottom, there is a blue bar with 'Cancel' and 'Save' buttons. A dashed yellow circle highlights the refresh icon, and a red arrow points from the right side of the app towards the right edge of the image.

# 快速部署

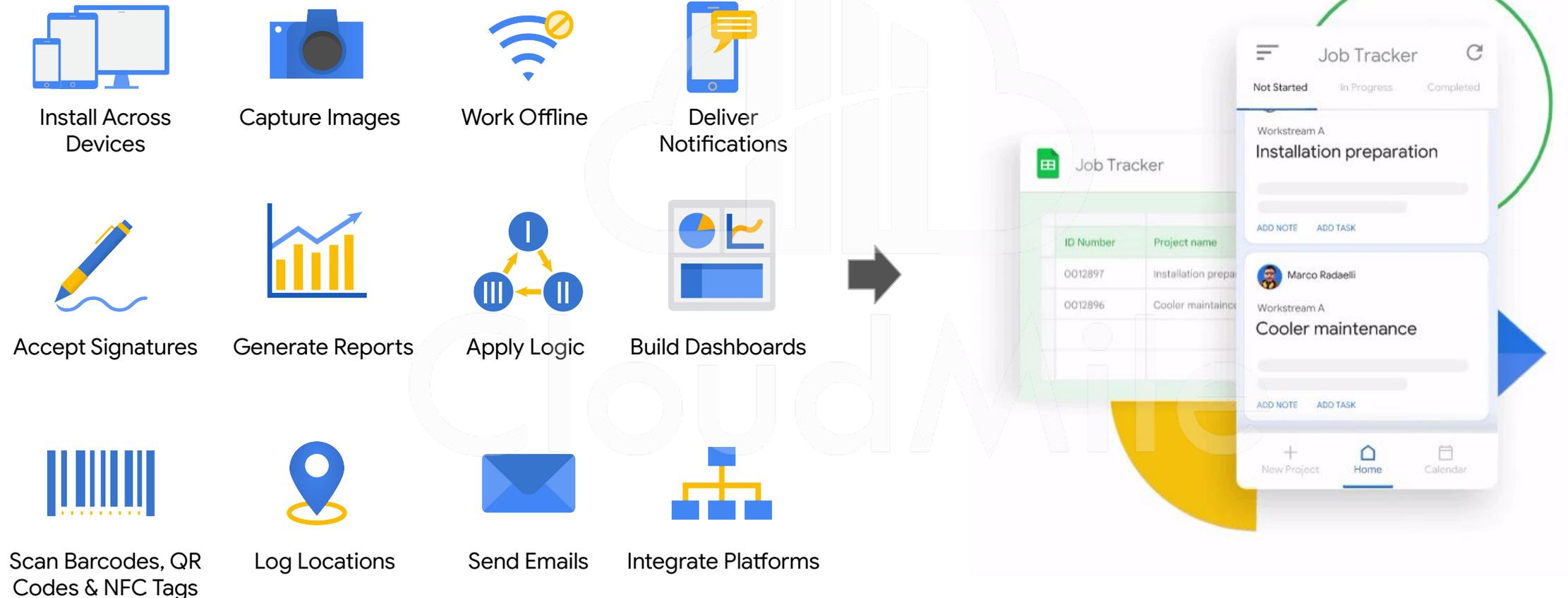
*One-click deploy to multiple platforms*

透過 AppSheet 建立的動態應用程式，  
可以在各種行動裝置或瀏覽器上使用，  
支援多平台各種 size 裝置



# 建構及擴充應用程式

*Transform and optimize your business operations with no-code business apps*





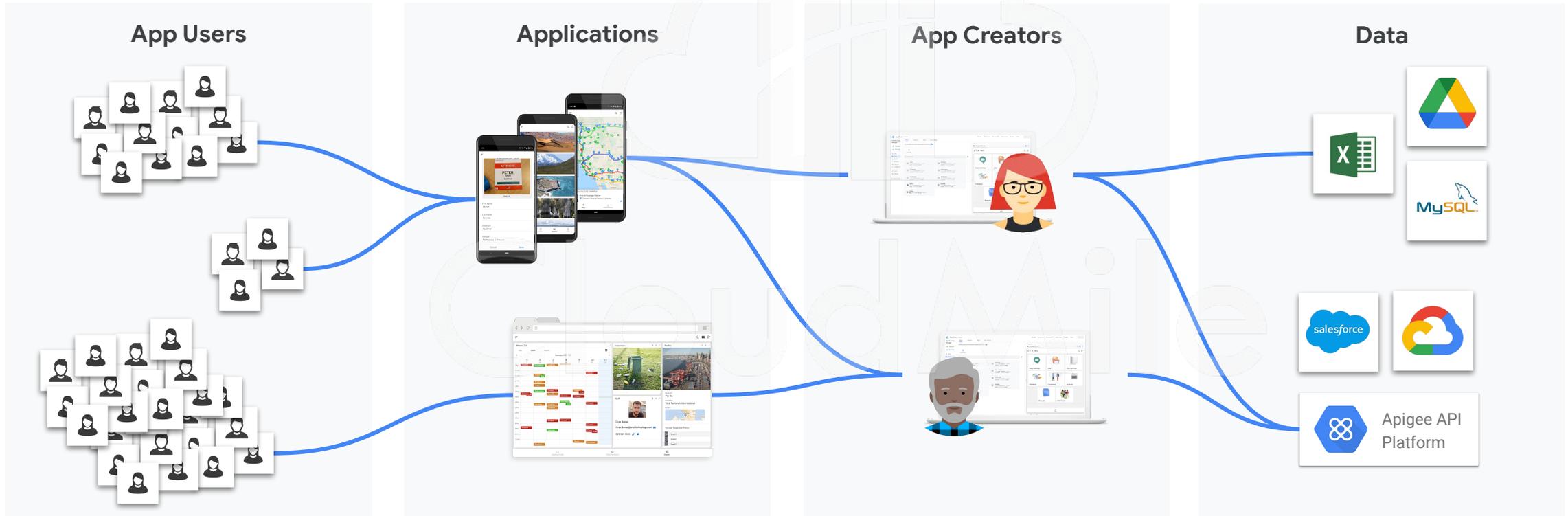
前線員工/公司同仁



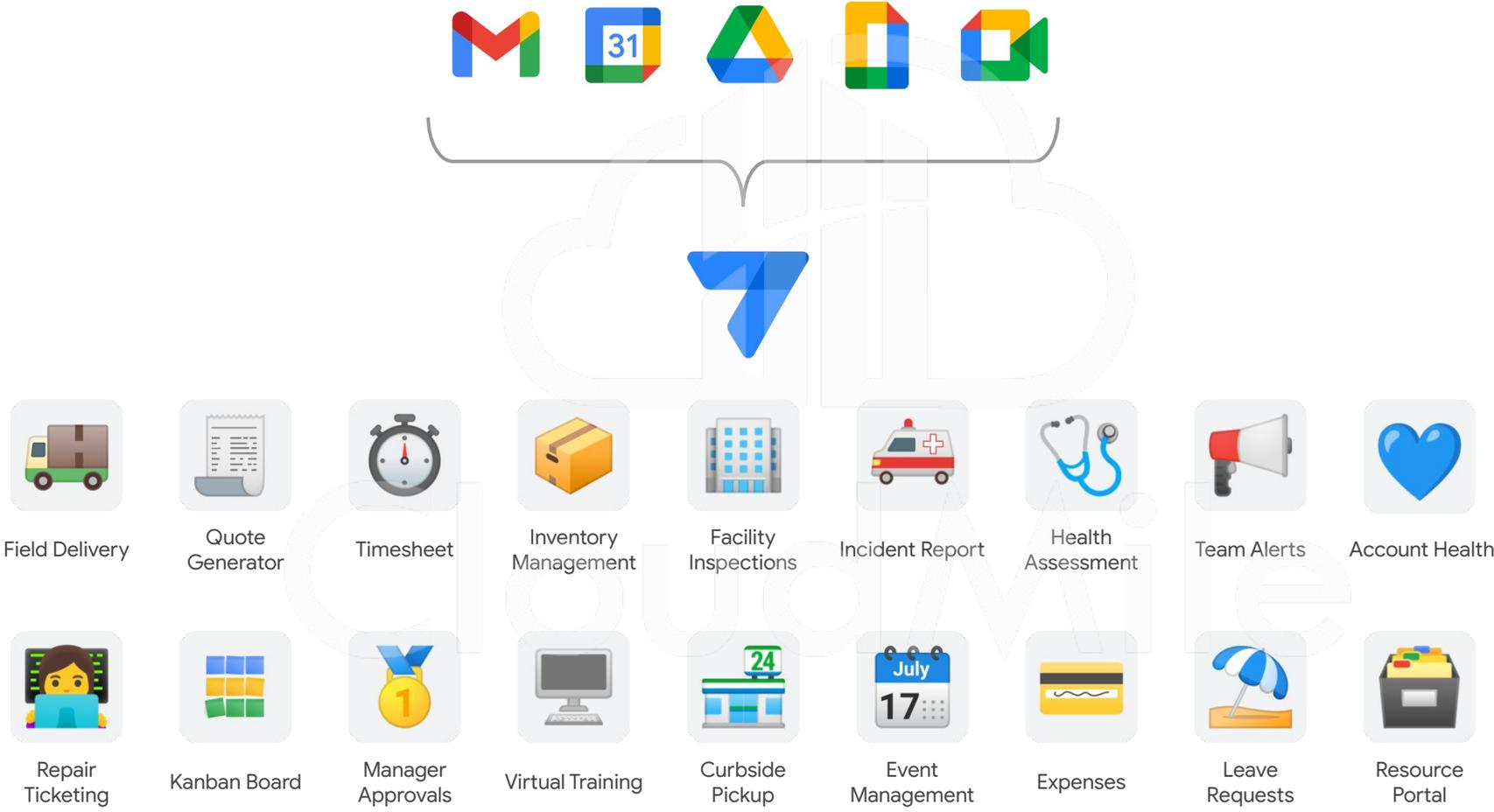
BU單位/老闆



資訊人員



# AppSheet 延展 Google Workspace 的其他可能



# 將 AppSheet 與 Google Workspace 做緊密的連結



## Drive

Access shared folders  
for app data and  
content



## Sheets

Create, read, update,  
and delete Sheets data  
directly from app



## Forms

Expand Forms  
functionality with data  
intake features



## Docs

Create custom  
templates for  
notifications and files



## Calendar

Integrate and update  
events from existing  
calendars



## Meet

Launch Meet directly  
from AppSheet

# 可以使用 AppSheet 的情境

- ✓ 圖形化的報表展現 (資料收集、視覺呈現)
- ✓ 彌補公司系統沒有涵蓋到的工作需求 (Frontline Workers 前線員工小工具)
- ✓ 開發者擁有基本概念 (Basic DB Concepts)
- ✓ 想要客製化公司系統 (結合 Google Workspace 的服務)

## 不建議使用 AppSheet 的情境

- ✓ 需要撰寫大量的程式碼 (AppSheet 不允許使用個人程式碼)
- ✓ 具有大量邏輯的應用程式 (應用程式有深入分析的場景)
- ✓ 複雜的 Use case 設計 (儘量以簡單的功能為主)
- ✓ 針對行動裝置設計的服務 (AppSheet 不是 Native 的應用程式)

# AppSheet特色

## 快速應用開發

1天至1週

低代碼開發平台，**非技術人員**也能快速創建專屬的應用程式，無需編寫繁瑣的程式碼。

滿足不同行銷需求，包括活動報名、產品展示、客戶調查等，加快行銷活動的執行速度。

## 整合多個數據源

Dropbox、SQL、Sheet...

可連接和**整合多個數據來源**，例如**資料庫、試算表、線上服務**等。

輕鬆地將不同來源的數據整合到應用程式中，實現全面的數據管理和分析，並更好地管理公司及客戶。

## 提升行動力

現場、前線、外勤

可在不同裝置使用，無論是在會議中、活動現場還是外勤工作中，皆可方便地使用 AppSheet 應用程式執行任務，並即時收集和更新數據。

# 02

## AppSheet 運作模式



# Google Workspace with Cloud Identity

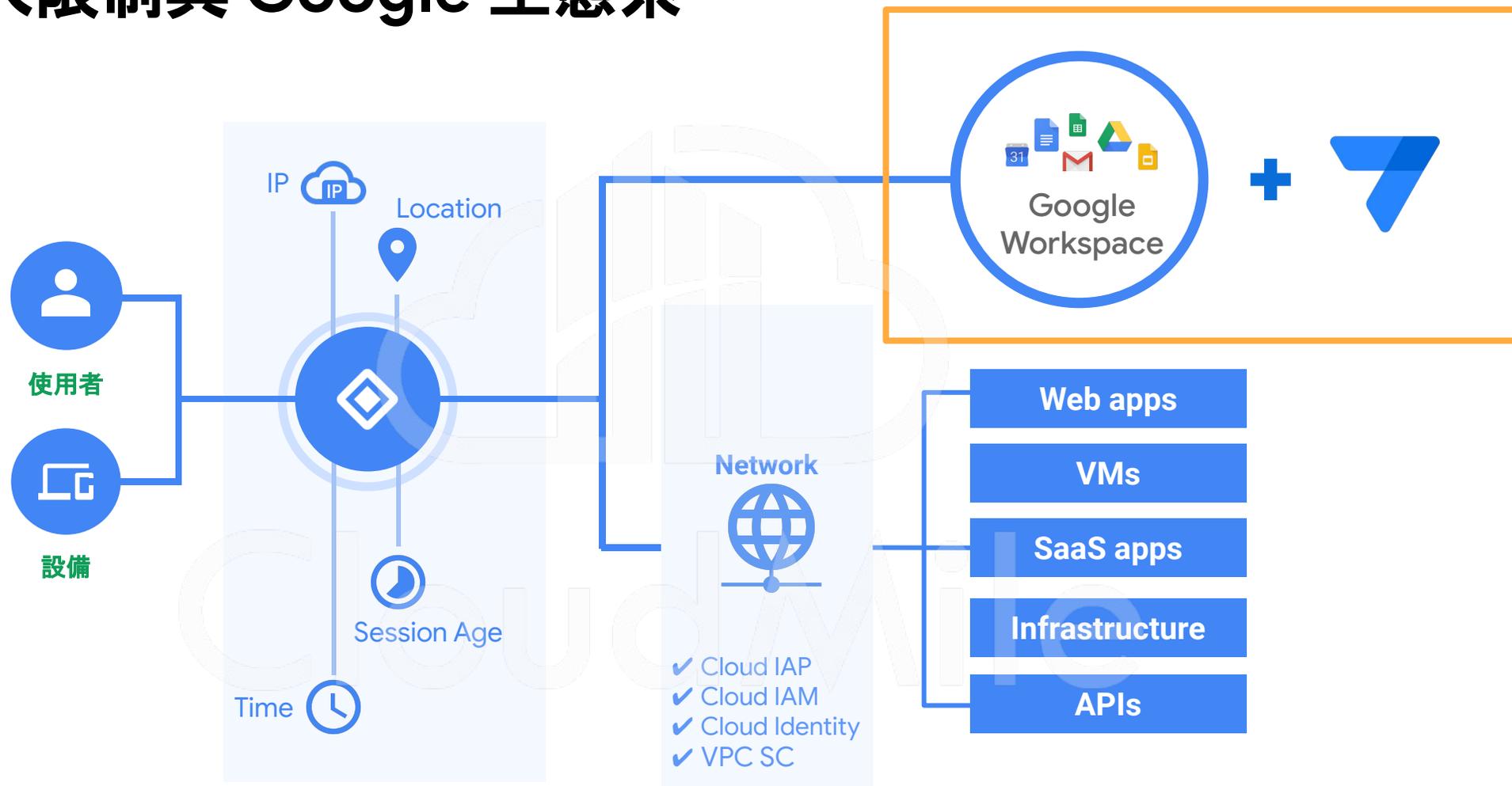
Enabling BeyondCorp for organizations everywhere

Google Workspace 提供各種規模的團隊使用、溝通、創作，是一個適用於所有工作方式的生產力工具與協作工具，能以獨立產品的方式與其他 Google 服務搭配使用提供身分認證，例如 GCP、AppSheet

其核心的身份管理服務就跟 Microsoft AD 一樣，不管是使用者(User)、群組(Group)、電腦(Device)、組織單元(OU)...等，都可以讓管理員透過單一位置 (管理控制台)，做集中式目錄管理與權限設計



# 安全的登入限制與 Google 生態系



# AppSheet 開發



Start Here

BEST PRACTICE

### [ 01 ] Discovery: 找尋應用, 列出需求

- 需求單位與開發單位共同構建關鍵的使用情境。



### [ 04 ] PoC / Production

- 定義需求情境與範疇
- 定義成功標準



### [ 02.a ] 評估與驗證

- 評估業務端的可行性與AppSheet 技術上可行性
- 驗證收集的使用情境
- 定義關鍵情境, 藉此評估設計上是否可行。



### [ 02.b ] 建立與訂製要 Demo 的範疇

- 可使用現有的模板快速製作 Demo 畫面
- 可考慮 Google Workspace 相關整合與進階的資料應用

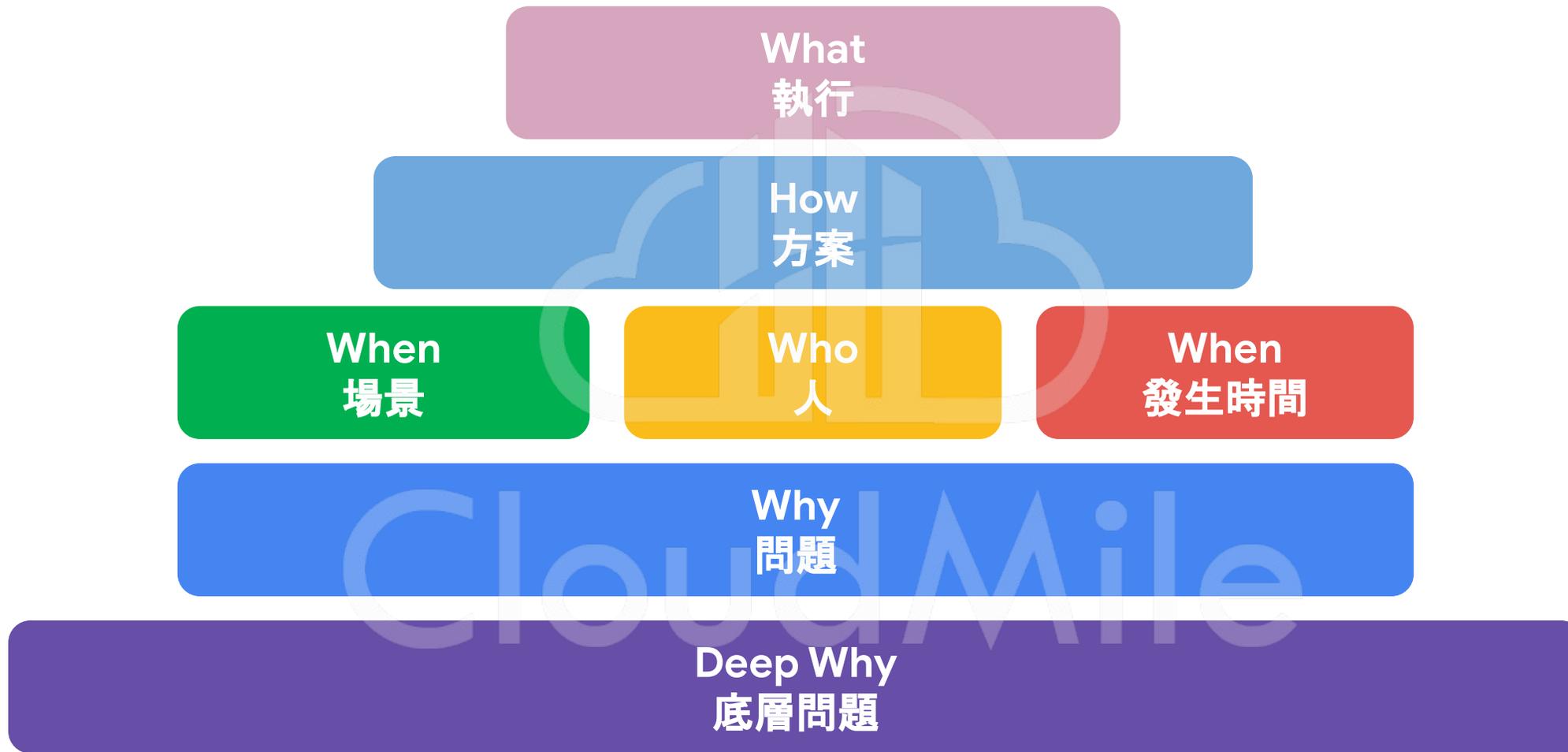


### [ 03 ] 實際演示 Demo 作品

- 實際演示 AppSheet 如何做出關鍵使用情境
- 介紹該平台給平民開發人員
- 說明安全性與維護方式
- 持續往 Production 推進

Google

# 需求探討



# 需求探討

## 文檔資料

- 定期檢查
- 問卷回饋
- 規劃討論
- 項目追蹤
- 掃描辨識
- 分類記錄
- 服務
- 簽署
- 申請批准
- 活動管理
- 時間地點記錄

## 使用者

- 新進人員
- 內勤人員
- 外勤人員
- 專業人員
- 對外服務
- 管理者
- 查驗人員
- 配送人員
- 供應商 / 承包商

## 場景

- 辦公室
- 門店
- 現場
- 工廠
- 倉庫
- 業務財務
- 物流配送
- 客戶互動
- 前台 / 後台
- 上游 / 中游 / 下游

## 解決問題

- 品質穩定
- 資源分配
- 快速調度
- 時間效率
- 準確率提高
- 信賴關係
- 有效管理
- 提醒通知
- 創新創造

# 場景需求

## 現場使用

- 庫存追蹤
- 司機調度
- 物流派送
- 確認簽名
- 現場服務
- 現場資源管理
- 資產管理
- 廠商管理
- 條碼掃描

## 品控維護

- 安全檢查/品質保證
- 設施和維護
- 設備檢查
- 時間排程

## 辦公室

- 申請單與批准
- 專案管理和協作
- 預算規劃和追蹤
- CRM 附加功能
- 打卡請假

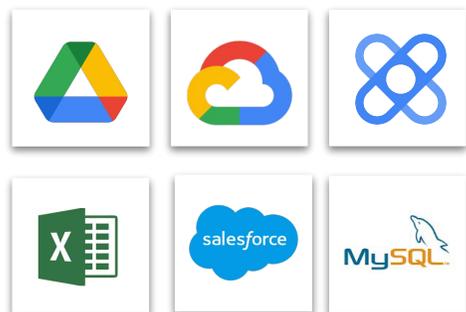
## 連結互動

- 提案和報價產出
- 專案排程管理
- 客戶管理
- 通知提醒
- 教育訓練
- FAQ

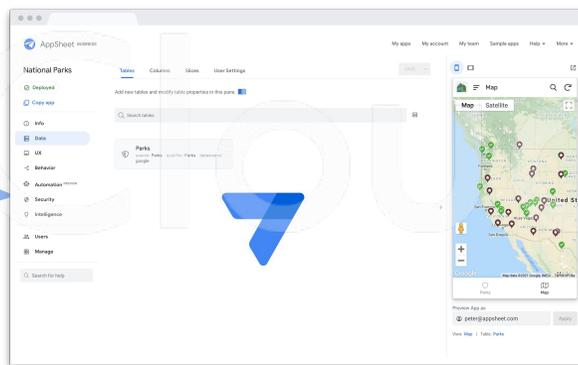
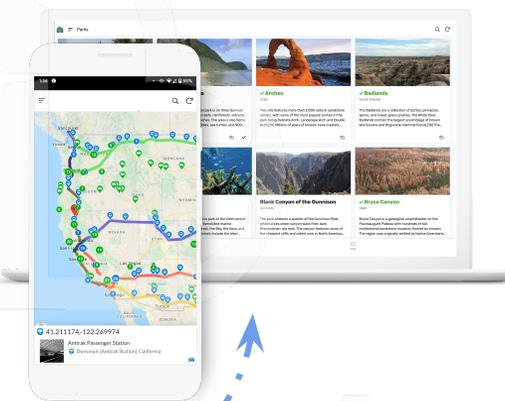
# 開發 AppSheet 的流程



## 1. 串接資料來源



## 3. APP 佈署



## 2. 客製化需求與表單管理

# AppSheet APP 給予權限

The image shows the 'Share app' dialog box in the AppSheet interface. The dialog is titled 'Share app' and contains the following elements:

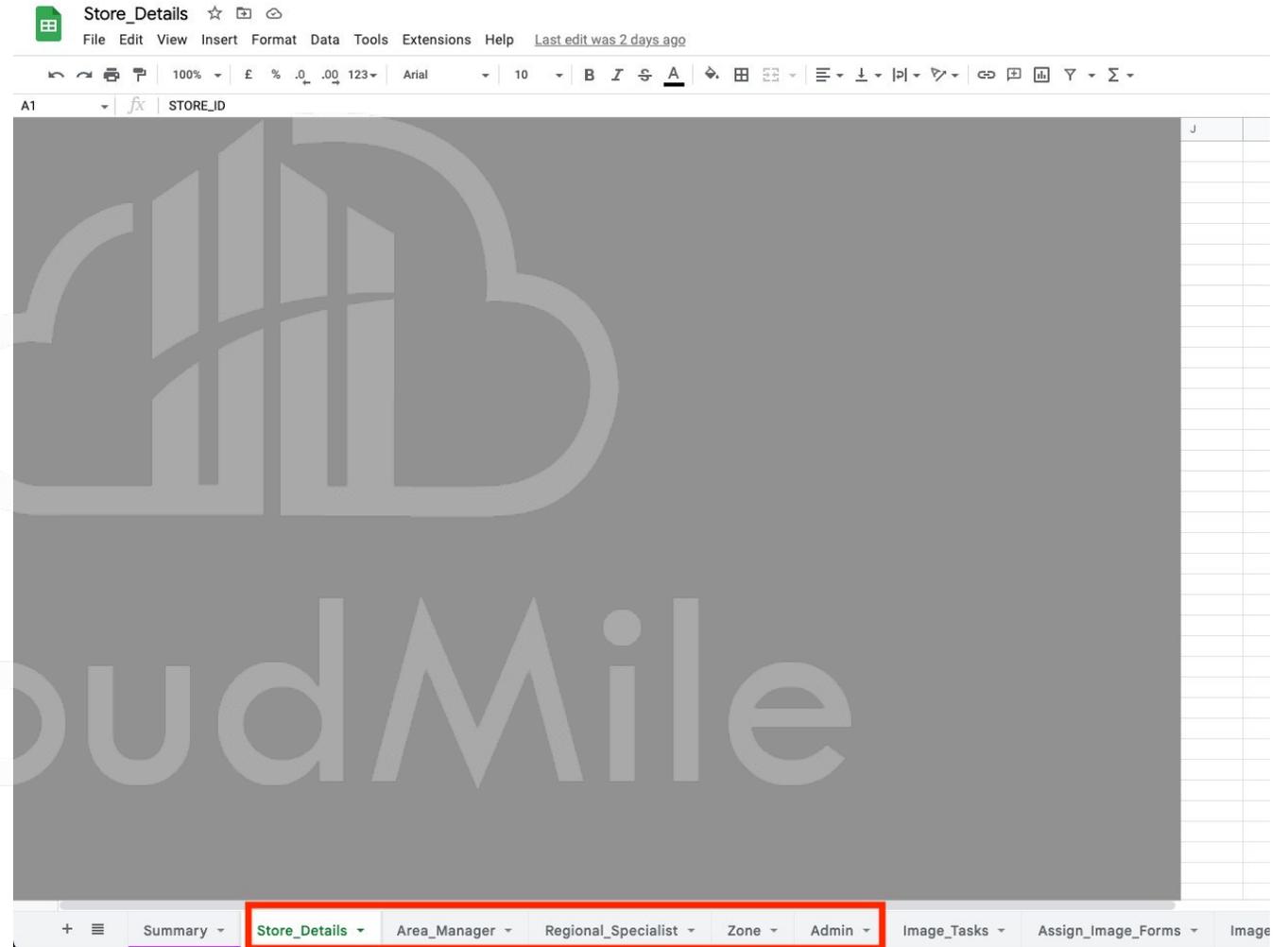
- A search field labeled 'Email address or domain...'
- An 'Auth provider for app access' dropdown menu set to 'Google'.
- A list of users with 'Use app' dropdown menus. The 'Owner' user is highlighted.
- Buttons for 'Copy sharing links', 'Copy users', and 'Done'.

The background shows the AppSheet interface with a 'Share' icon highlighted in the top right corner. The interface also displays a 'Deploy' section with a 'Deployment Check' and a 'White-Label' section. A 'CloudMile' watermark is visible across the center of the image.

# AppSheet APP 應用層級權限設計

類似於資料庫關聯設計，賦予不同角色於該 APP 中能有不同的操作行為。

AppSheet APP 權限僅限制登入者是否可以使用該 APP 以及是否可編輯修改，但 APP 應用內的權限及功能，需要由開發端自行設計及開發。



# 各場景類型的官方App Sheet範本

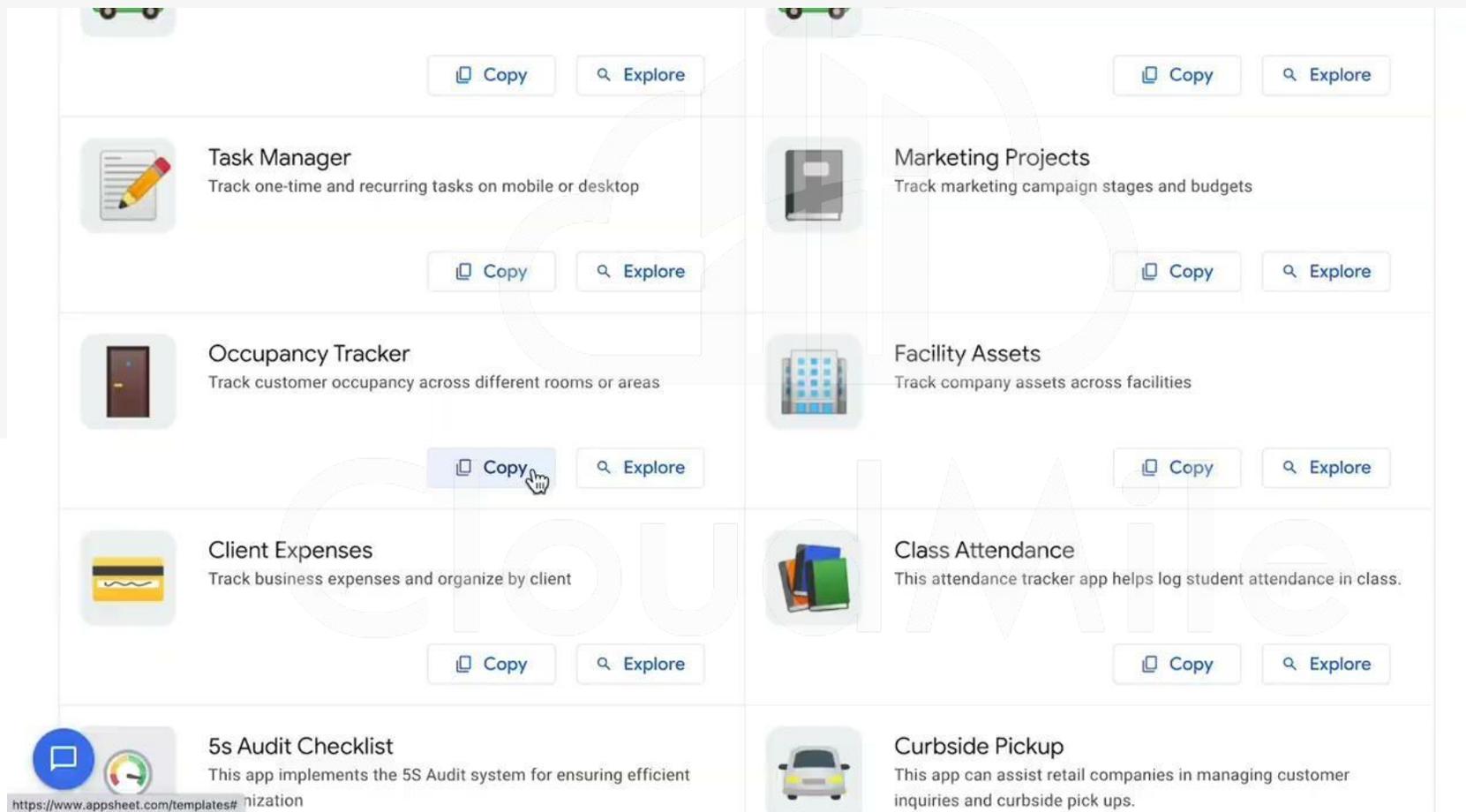
A screenshot of the AppSheet web interface. The browser address bar shows 'appsheet.com/home/apps'. The left sidebar contains navigation options: 'Create', 'Recent', 'Shared with me', 'Owned by me', and 'Templates' (which is highlighted with a mouse cursor). The main content area shows a table of recent apps under the 'Apps' tab. The table has columns for Name, Status, Owner, and Last modified. The apps listed are Tenant Logistics, App Portal, Simple Inventory, Field Delivery, and Timesheet Tracker, all with a status of 'Prototype' and owned by 'me', last modified on May 19, 2023. A large 'CloudMile' watermark is visible across the center of the screenshot.

Name	Status	Owner	Last modified
Tenant Logistics	Prototype	me	May 19, 2023
App Portal	Prototype	me	May 19, 2023
Simple Inventory	Prototype	me	May 19, 2023
Field Delivery	Prototype	me	May 19, 2023
Timesheet Tracker	Prototype	me	May 19, 2023

# 第一次入門可以怎麼做？ - 1



- 複製官方 App Sheet 範本



<https://www.appsheet.com/templates/#organization>

# 第一次入門可以怎麼做？ - 2



- 他人分享App Sheet給我

The screenshot shows the Google AppSheet interface for an application named 'Simple Inventory'. The interface is divided into several sections:

- Top Bar:** Contains the AppSheet logo, the app name 'Simple Inventory', and various utility icons including a grid, help, user profile, undo, redo, save, and a refresh button.
- Left Sidebar:** A navigation menu with options: Home, Info, Data (highlighted), UX, Behavior, Automation, Chat apps, Security, Intelligence, and Manage.
- Tables Tab:** The active tab, showing a 'New Table' button and a search bar for tables. Below, two table cards are visible: 'Inventory' (source: Items, qualifier: Inventory, datasource: google) and 'Items' (source: Items, qualifier: Items, datasource: google).
- Right Panel:** A preview of the 'Items' table, displaying a list of items: 'Saw' (Battery powered circular saw), 'Hammer' (Framing hammer), and 'T-Square' (T-square with metric ruler). At the bottom of this panel, there are buttons for 'Items', 'Inventory Log', and 'Levels', along with a 'Preview app as' dropdown menu set to 'comeon.chen@benjerry.dev' and an 'Apply' button.

# Simple Demo



交貨便 服務單



081204734



C4371779700001



B5235924000000

收件人：

林育章

物流專用條碼：734001C437177923  
繳費期限：2019-12-04 23:59  
廠商名稱：734-BAKERY  
寄件訂單編號：2019082604365631-1  
寄件人：H\*\*\*y

【注意事項】

- 1.本島↔離島：寄件時加收離島配送費40元；  
離島↔離島：寄件時加收離島配送費80元。
- 2.材積限制：最長邊 $\leq 45\text{cm}$ ；長+寬+高合計 $\leq 105\text{cm}$ ；重量 $\leq 5$ 公斤。
- 3.請將本單放置於專用袋中並自行實貼於包裹上；寄件後無法取消寄件及更換包裹。
- 4.本單尺寸10cm x 14cm請勿調整尺寸。

交貨便 服務單



881654734



A43745679700001



Z52359240007543

收件人：

張四仁

物流專用條碼：734001C437177923  
繳費期限：2019-12-04 23:59  
廠商名稱：734-BAKERY  
寄件訂單編號：2019082604365631-1  
寄件人：H\*\*\*y

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- 4.本單尺寸10cm x 14cm請勿調整尺寸。

交貨便 服務單



567804734



U43710945000409



B52359240003332

收件人：

吳明明

物流專用條碼：734001C437177923  
繳費期限：2019-12-04 23:59  
廠商名稱：734-BAKERY  
寄件訂單編號：2019082604365631-1  
寄件人：H\*\*\*y

【注意事項】

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離島↔離島：寄件時加收離島配送費80元。
- 2.材積限制：最長邊 $\leq$ 45cm；長+寬+高合計 $\leq$ 105cm；重量 $\leq$ 5公斤。
- 3.請將本單放置於專用袋中並自行實貼於包裹上；寄件後無法取消寄件及更換包裹。
- 4.本單尺寸10cm x 14cm請勿調整尺寸。

交貨便 服務單



879654734



K437456797007640



P52355420007543

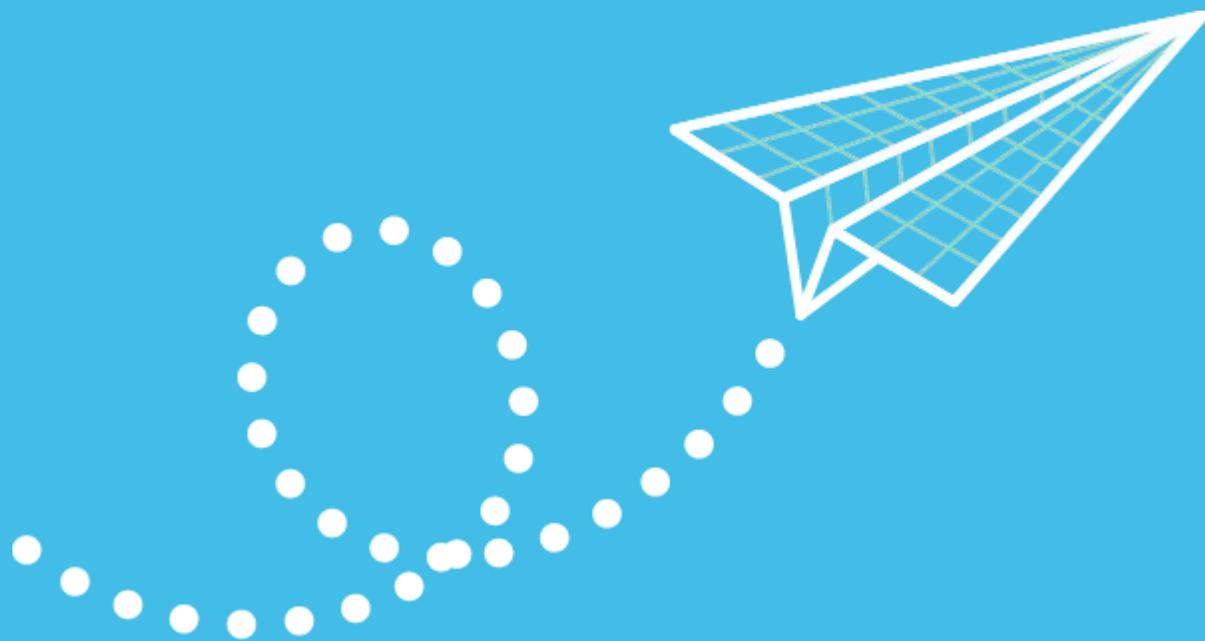
收件人：

陳萱萱

物流專用條碼：734001C437177923  
繳費期限：2019-12-04 23:59  
廠商名稱：734-BAKERY  
寄件訂單編號：2019082604365631-1  
寄件人：H\*\*\*y

【注意事項】

- 1.本島↔離島：寄件時加收離島配送費40元；  
離島↔離島：寄件時加收離島配送費80元。
- 2.材積限制：最長邊 $\leq$ 45cm；長+寬+高合計 $\leq$ 105cm；重量 $\leq$ 5公斤。
- 3.請將本單放置於專用袋中並自行實貼於包裹上；寄件後無法取消寄件及更換包裹。
- 4.本單尺寸10cm x 14cm請勿調整尺寸。



## 7 個步驟建立、開發以及部署應用程式



# 1. 準備資料



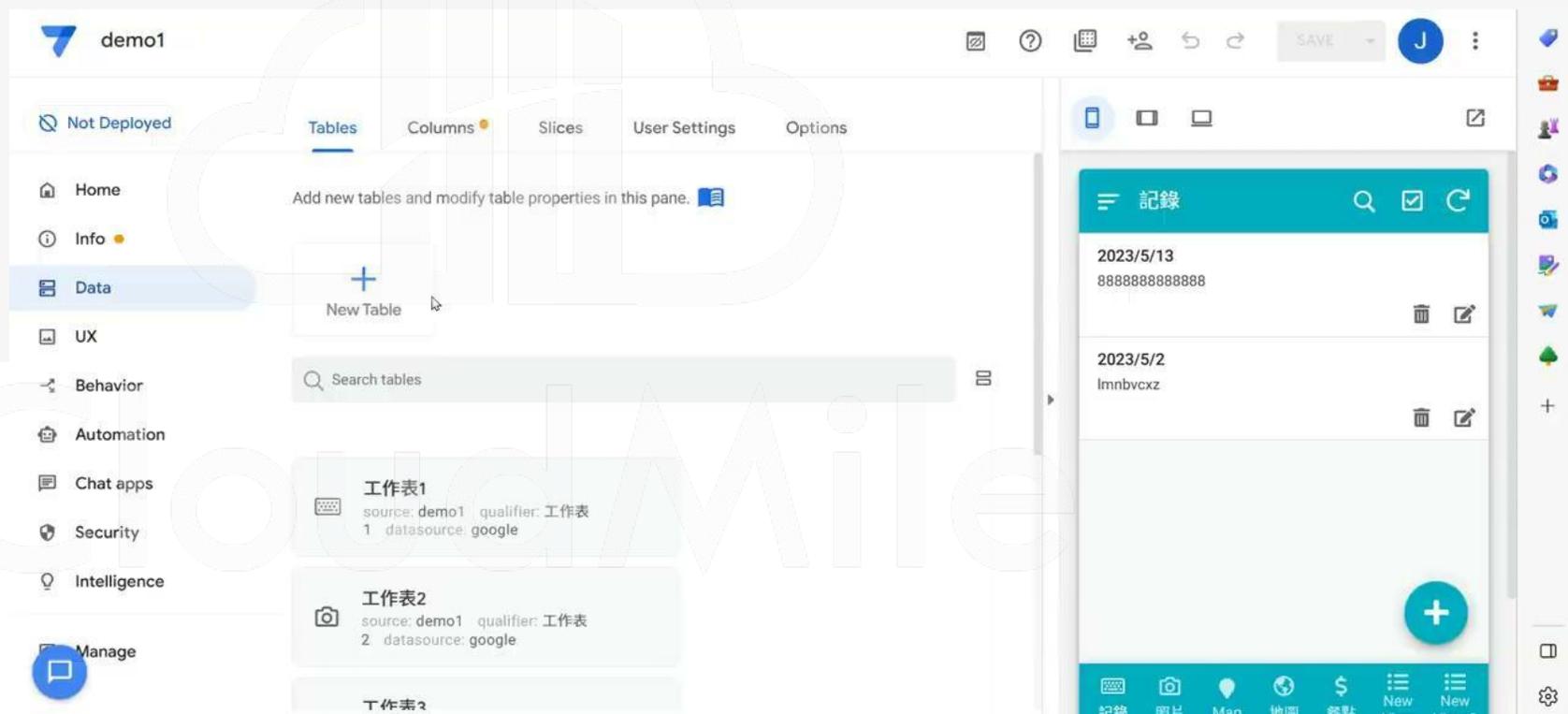
- 準備Column Header
- 準備 Data Type
- 準備Data

Project	Description	Started	Due	Completed	Status	Owner
Project #4563456	New device request from employee #345235		6/15/2020	Complete	deepak@company.com	
Project #4563457	New hardware installation			Complete	IT@company.com	
Project #4563458	Monitor removal from conference room B		7/5/2020	Complete	IT@company.com	
Project #4563459	Power strip installations on floor 3			Complete	ashley@company.com	
Project #4563460	Software updates for marketing team			Complete	deepak@company.com	
Project #4563461	2fa launch for sales team			Complete	IT@company.com	
Project #4563462	New device request from employee #345236	7/13/2020	7/24/2020	Complete	IT@company.com	
Project #4563463	New hardware installation			Complete	ashley@company.com	
Project #4563464	Monitor removal from conference room B			Complete	deepak@company.com	
Project #4563465	Power strip installations on floor 4			Complete	deepak@company.com	
Project #4563466	Software updates for marketing team	7/3/2020	7/22/2020	Complete	ashley@company.com	
Project #4563467	2fa launch for sales team			Complete	ashley@company.com	
Project #4563468	New device request from employee #345237		7/1/2020	Complete	deepak@company.com	
Project #4563469	New hardware installation			Complete	deepak@company.com	
Project #4563470	Monitor removal from conference room B			Complete	IT@company.com	
Project #4563471	Power strip installations on floor 5	8/24/2020	9/30/2020	8/31/2020	In Progress	deepak@company.com
Project #4563472	Software updates for marketing team	7/16/2020	8/22/2020		Not Started	deepak@company.com
Project #4563474	2fa launch for sales team	7/16/2020	12/15/2020		In Progress	ashley@company.com
Project #4563475	New device request from employee #345238	7/16/2020	11/23/2020		In Progress	IT@company.com

## 2. 連結資料來源至AppSheet: 方法1



- 方法1: AppSheet中建立連結
- 方法2: Google Sheet中建立AppSheet



# 可連接多種資料來源



## 資料表



Google Sheets and Drive



Excel on Office 365



Excel on Dropbox



Excel on OneDrive



Excel on Box

## 資料庫



BigQuery



SQL Server



mySQL



PostgreSQL



AWS DynamoDB

## 各式第三方服務平台



Apigee



Smartsheet



Salesforce



Airtable



OData

# [Data] 資料來源 - Google Sheet



Tables Columns Slices User Settings

Home Add new tables and modify table properties in this pane.

Info

Data **+** New Table

UX

Behavior

Automation

Chat apps (Beta)

Security

Intelligence

Manage

Image\_Table  
source: Public Form qualifier: Image\_Table datasource: google

Original  
source: Public Form qualifier: Form Data datasource: google

View Columns View source View Data Delete

Add data

Select the datasource:

- AppSheet Database PREVIEW
- Google Sheets**
- Google Drive Documents

+ New source

Public Form ☆ 📄 🌐

檔案 編輯 查看 插入 格式 資料 工具 擴充功能 說明 上次編輯: 10 天前

100% \$ % .0 .00 123 Arial 10 B I S A

ID	Buttons	Text	Text2	Date Time	Percent	Dropdown	Color	Image
One	test	go	12/19/2019 15:1	78%	Orange , Yellow , Green			
Two	gogo	abc	12/19/2019 15:1	45%	Orange , Green , Blue			
Two	hi	wsws	12/19/2019 15:1	45%	Orange , Green , Blue			
Three	next	erfr	12/19/2019 15:1	45%	Orange , Green , Blue			
Three	abc	rfr	12/19/2019 15:1	19%	Green			
One	sds	rfr	12/19/2019 16:5	72%	Red , Orange , Green			
fcwef	ewfef	fef	2/10/2023 15:20	0%		Red		
scc	sdsc	dc	2/10/2023 15:24	0%				
csdc	1234	5678	2/10/2023 15:37	1%		Red		

Not Deployed Tables Columns Slices User Settings Options

Home

Info

Data

UX

Behavior

Automation

Chat apps (Beta)

Security

Intelligence

Manage

Original  
13 columns ID ID

View Table Add Virtual Column Regenerate Structure

NAME	TYPE	KEY?	LABEL?	FORMULA	SHOW?	EDITABLE?	REQUIRE?	INITIAL	
1	_RowNumber	Number	<input type="checkbox"/>	<input type="checkbox"/>	=	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	=
2	ID	Text	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	=	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	= U
3	Buttons	Text	<input type="checkbox"/>	<input type="checkbox"/>	=	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	=
4	Text	Text	<input type="checkbox"/>	<input type="checkbox"/>	=	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	=
5	Text2	Text	<input type="checkbox"/>	<input type="checkbox"/>	=	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	=
6	Date Time	DateTime	<input type="checkbox"/>	<input type="checkbox"/>	=	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	= N
7	Percent	Percent	<input type="checkbox"/>	<input type="checkbox"/>	=	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	= e
8	Dropdown	Text	<input type="checkbox"/>	<input type="checkbox"/>	=	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	=
9	Color	Color	<input type="checkbox"/>	<input type="checkbox"/>	=	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	=
10	Image	Image	<input type="checkbox"/>	<input checked="" type="checkbox"/>	=	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	=

## 2. 連結資料來源至AppSheet: 方法2



- 方法1: AppSheet中建立連結
- 方法2: Google Sheet中建立AppSheet

Project	Description	Started	Due	Completed	Status	Owner
Project #4563456	New device request from employee #345235			6/15/2020	Complete	deepak@company.com
Project #4563457	New hardware installation				Complete	IT@company.com
Project #4563458	Monitor removal from conference room B			7/5/2020	Complete	IT@company.com
Project #4563459	Power strip installations on floor 3				Complete	ashley@company.com
Project #4563460	Software updates for marketing team				Complete	deepak@company.com
Project #4563461	2fa launch for sales team				Complete	IT@company.com
Project #4563462	New device request from employee #345236	7/13/2020	7/24/2020		Complete	IT@company.com
Project #4563463	New hardware installation				Complete	ashley@company.com
Project #4563464	Monitor removal from conference room B				Complete	deepak@company.com
Project #4563465	Power strip installations on floor 4				Complete	deepak@company.com
Project #4563466	Software updates for marketing team	7/3/2020	7/22/2020		Complete	ashley@company.com
Project #4563467	2fa launch for sales team				Complete	ashley@company.com
Project #4563468	New device request from employee #345237			7/1/2020	Complete	deepak@company.com
Project #4563469	New hardware installation				Complete	deepak@company.com
Project #4563470	Monitor removal from conference room B				Complete	IT@company.com
Project #4563471	Power strip installations on floor 5	8/24/2020	9/30/2020	8/31/2020	In Progress	deepak@company.com
Project #4563472	Software updates for marketing team	7/16/2020	8/22/2020		Not Started	deepak@company.com
Project #4563474	2fa launch for sales team	7/16/2020	12/15/2020		In Progress	ashley@company.com
Project #4563475	New device request from employee #345238	7/16/2020	11/23/2020		In Progress	IT@company.com
Project #4563476	New hardware installation	7/16/2020	8/22/2020		Complete	ashley@company.com
Project #4563477	Monitor removal from conference room B	7/16/2020	8/16/2020		Complete	ashley@company.com

# AppSheet Layout



Navigation bar

Edit pane

Preview

The screenshot displays the AppSheet interface for a 'Simple Inventory' application. The interface is divided into three main sections: the Navigation bar on the left, the Edit pane in the center, and the Preview pane on the right. The Navigation bar includes a 'Not Deployed' status indicator and a menu with options like Home, Info, Data, UX, Behavior, Automation, Chat apps, Security, Intelligence, and Manage. The Edit pane shows the configuration for an 'Inventory' table, including options for 'View Columns', 'View source', 'View Data', and 'Delete'. It also allows setting the 'Table name' to 'Inventory' and configuring update permissions for 'Updates', 'Adds', and 'Deletes'. The Preview pane shows a mobile app view of the 'Items' table, listing items like 'Saw', 'Hammer', and 'T-Square' with their respective descriptions and icons.



Navigation bar

- Data
- UX
- Action
- Automation
- Other



Edit pane

- 設計畫面
- 操作畫面



Preview

### 3. 定義資料處理方式



- Tables: 資料來源
- Columns:  
Name / TYPE / KEY? / LABEL? /  
FORMULA / SHOW? /  
EDITABLE? / REQUIRE? /  
INITIAL VALUE / DISPLAY  
NAME / DESCRIPTION /  
SEARCH? / SCAN? / NFC? /  
PII?
- Slices
- User Settings
- Options

The screenshot displays the 'Occupancy Tracker' application interface. The main panel is titled 'Tables' and contains a 'New Table' button and a search bar. A sidebar on the left lists various configuration categories: Home, Info, Data (highlighted), UX, Behavior, Automation, Chat apps, Security, Intelligence, and Manage. Below the sidebar, three table configurations are visible: 'Areas' (source: Location, qualifier: Areas, datasource: google), 'Location' (source: Location, qualifier: Location, datasource: google), and 'Occupancy Log' (source: Location Log, qualifier: Occupancy Log, datasource: google). On the right, a mobile app preview shows a 'Grocery' section with a photo of bread and a 'Bakery' section with a blue '+ Add' button and the text 'The Bakery has room for 4 more people'. The bottom of the preview shows 'Locations' and 'Areas' tabs, a 'Preview app as' section with the user 'comeon.chen@benjerry.dev', and an 'Apply' button.

# 登入檢查帳號-給予資料權限



Deployed

Tables Columns Slices **User Settings** Options

10 columns: \_THISUSER

	NAME	TYPE	FORMULA
1	Options Heading	Show	=
2	<b>IS_ADMIN</b>	Yes/No	=
3	Option 2	Number	=
4	Country Option	Enum	=
5	Language Option	Enum	=
6	Option 5	Text	=
7	Option 6	Number	=
8	Option 7	Text	=
9			

Home  
Info  
**Data**  
UX  
Behavior  
Automation  
Chat apps (Beta)  
Security  
Intelligence  
Manage

Home 成員清單

調查清單 Workshop顯示 分數分佈 管理員調查清單 **成員清單**

meet.google.com 正在共用你的畫面 · 停止共用 隱藏

# [Data] 什麼是 Data ?



- 整個 APP 的資料來源, 一個 APP 可以連結多個資料來源
- 定義 APP 所需要用到的資料
- 可於此處理資料顯示的邏輯
- 可於此做資料權限管理
- 可於此決定資料可操作的行為 (CRUD)

# [Data] 資料管理介面



Request Approval

Deployed

Tables Columns Slices User Settings Options

Home

Info

Data

UX

Behavior

Automation

Security

Intelligence

Manage

Search for help

Request Details  
source: Request Approval qualifier: Request Details datasource: google

Requests  
source: Request Approval qualifier: Requests datasource: google

View Columns View source View Data Delete

Table name  
Name for this table (user-visible) Requests

Are updates allowed?  
Are adds, deletes and updates allowed?  
Updates Adds Deletes Read-Only

Storage

Security

Scale

Localization

Documentation

Requested by  
hyzhang@google.com

Image

Please describe your request\*

Supporting links or attachments  
New

Reviewer email address?\*

Cancel Save

Preview app as  
hyzhang@google.com Apply

View: New Request | Table: Requests

- 所有資料來源皆從此介面進行設定。
- 定義資料欄位、型態以及顯示設定 (必填? 是否顯示?)

# [Data] 資料管理介面



1. View Columns
2. View Source
3. View Data
4. Add Virtual Column
5. Security filter

A screenshot of the Airtable 'Data' settings page for a table. The page is titled 'Not Deployed' and has tabs for 'Tables', 'Columns', 'Slices', 'User Settings', and 'Options'. The 'Data' tab is selected. The left sidebar contains navigation options: Home, Info, Data (selected), UX, Behavior, Automation, Security, Intelligence, and Manage. The main content area is divided into sections: 'Are updates allowed?' with buttons for Updates, Adds, Deletes, and Read-Only; 'Storage'; 'Security' with a toggle for 'Filter out all existing rows?'; 'Security filter (APPSHEET CORE)' with a text input field containing '='; and 'Access mode (APPSHEET CORE)' with buttons for 'as app creator' and 'as app user'. A red rectangular box highlights the 'Security filter' section.

# [Data] 很重要的功能 - Slice



1. 切片的目的
2. 切片的效果
3. 狀態呈現很有用

The screenshot displays the 'New Slice' configuration interface. The sidebar on the left contains navigation items: Home, Info, Data (highlighted), UX, Behavior, Automation, Security, Intelligence, and Manage. The main panel shows the configuration for a slice named 'New Slice' from the 'Other\_Table'. The configuration fields are:

- Slice Name:** New Slice (The unique name for this slice)
- Source Table:** Other\_Table (Which table to use as a source)
- Row filter condition:** Describe the expression in your own words (True/false expression that checks if a row should be included in the slice)
- Slice Columns:** All Columns (Columns to include in the slice)
- Slice Actions:** \*\*auto\*\* (Actions to include in the slice)



## 4. 設計畫面



- Views: 要呈現哪些頁面
- Brand: 提供主題色、Logo、啟動畫面等相關設計,
- Format Rules: 針對不同條件的資料給予不同樣式(ex. High light)

**Request Approval**

Views | Brand | Format Rules | Options | Localize

Present views of your data to your users.

Buttons: + New View, Add Gallery View for Requests, Add Card View for Requests, Add Histogram View for For my review, Add Gallery View for All Requests, Add Card View for My Requests

Search views

**Primary Views**  
These views are accessed via the bottom bar of the app. Views that are used often should be in this section.

- For my review**  
center data: For my review type: card
- My Requests**  
center data: My Requests type: deck
- New Request**  
left most data: Requests type: form

**Menu Views** [Rearrange](#)  
These views are accessed via the menu at the top left of the app. Views that are used only occasionally should be in this section.

Requested by: hyzhang@google.com

Image

Please describe your request\*

Supporting links or attachments

[New](#)

Reviewer email address?\*

[Cancel](#) [Save](#)

Preview app as [hyzhang@google.com](#) [Apply](#)

View: New Request | Table: Requests

# [UI/UX] 什麼是 UI/UX?



- 操控整個 APP 的畫面 (包含主畫面、編輯畫面、細節畫面)
- 可決定每個畫面想要呈現的樣式
- 可決定 APP 畫面的整體 Style
- 可客製特殊情況下的畫面顯示

CloudMile

# [UI/UX] AppSheet Views Types



A screenshot of the AppSheet 'Views' configuration interface. The interface is divided into a left sidebar and a main configuration area. The sidebar contains navigation options: Home, Info, Data, UX (highlighted), Behavior, Automation, Security, Intelligence, and Manage. The main area shows configuration for a view named 'Form'. It includes tabs for 'Views', 'Brand', 'Format Rules', 'Options', and 'Localize'. The 'Views' tab is active, showing fields for 'View name' (Form), 'For this data' (Original), and 'View type'. The 'View type' section is highlighted with a red box and contains a grid of view type icons: calendar, deck, table, gallery, detail, map, chart, dashboard, form, onboarding, and card. The 'card' option is selected. Below the view type grid is the 'Position' section with options: first, next, middle, later (selected), last, menu, and ref.

# [UI/UX] Format Rules



The screenshot shows a software interface for creating and previewing format rules. The interface is divided into several sections:

- Left Sidebar:** A navigation menu with options: Home, Info, Data, **UX** (highlighted), Behavior, Automation, Security, Intelligence, and Manage.
- Top Navigation:** Includes a search bar with "Not Deployed", tabs for Views, Brand, **Format Rules**, Options, and Localize, and a top right toolbar with icons for save, undo, redo, and a user profile.
- Rule Configuration Panel:**
  - Original\_Hightlight** (condition: CONTAINS([Text], "just") with Copy, Delete, and Disable buttons).
  - Rule name:** A text input field containing "Original\_Hightlight".
  - For this data:** A dropdown menu set to "Original".
  - If this condition is true:** A text input field containing the formula `= CONTAINS([Text], "just")`.
  - Format these columns and actions:** A list of columns including `_RowNumber`, `ID`, Buttons, Text, and Date Time.
- Preview Panel:** A preview of the rule's output, showing a list of items with their original text and formatted versions:
  - One: `7b` (green) and `la` (red)
  - Two: `2b`
  - Two: `sd`
  - Three: `sd` (green) and `df` (red)

# 不同的 Role 會 Show 不同的畫面



Expression Assistant

Show if constraint for view member (Yes/No)

This formula is not evaluated in the context of a row, so column values are not available.

```
LOOKUP(USEREMAIL(), "member", "email", "role") = "admin"
```

Note: This expression could impact performance.

✓ (One randomly chosen value from this list ( .....The list of values of column 'role' .....from rows of table 'member' .....where this condition is true: ((The value of column 'email') is equal to (USEREMAIL(

Test

Examples Data Explorer

Yes/No Math Text Time Columns Lists Deep Links Other

Pattern	Result	Example
---------	--------	---------

Help me with expressions

Cancel Save

meet.google.com 正在共用你的畫面 • 停止共用 隱藏

max.huang@mile.cloud

Workspace

## 5. 加入操作方式



- 執行特定的操作。
- 協助 AppSheet 執行各種不同的任務。也可以執行一系列動作。
- 包含資料的改動、App 畫面的轉換等相關動作皆可被設定執行。

A screenshot of the AppSheet interface for a Google Doc demo. The 'New Action' menu is open, listing various actions categorized by type: App, Data, and External. The 'External: start a phone call' option is highlighted with a blue bar. The background shows a table with columns for Customer Name, Survey Date, and a status column. The table contains two rows with the name 'Eddie' and the date '2019/7/18'.

Customer Name	Survey Date	Are..
Eddie	2019/7/18	Y
Eddie	2019/7/18	Y

# [ACTION] 什麼是 Actions



- 在**有限範圍內**，提供使用者於畫面中有其他操作形式。  
(ex. 一鍵設為管理員/設為成員等)
- 可一次群組化多項 Actions
- 通常搭配使用者畫面操作或是機器人執行
- 提供新增、刪除、修改、查詢**外的選擇**
- 提供 Offline 使用 (有容量上限)

# [ACTION] - 行為種類



nplate

Actions

Offline/Sync

## Action name

A unique name for this action

## For a record of this table

This action applies to rows of which table?

## Do this

The type of action to perform

## Set these columns

To the constant or expression values defined

Appearance

Behavior

Documentation

App: copy this row and edit the copy  
App: edit this row  
App: export this view to a CSV file (not a row-level action)  
App: go to another AppSheet app  
App: go to another view within this app  
App: import a CSV file for this view (not a row-level action)  
App: open a form to add a new row to this table (not a row-level action)  
Data: add a new row to another table using values from this row  
Data: delete this row  
Data: execute an action on a set of rows  
✓ Data: set the values of some columns in this row  
External: go to a website  
External: open a file  
External: start a phone call  
External: start a text message  
External: start an email  
Grouped: execute a sequence of actions

- 執行特定的操作。
- 協助 AppSheet 執行各種不同的任務。也可以執行一系列動作。
- 包含資料的改動、App畫面的轉換等相關動作皆可被設定執行。

# [ACTION] - 執行預先定義好的行為



## Requests

### APPROVE

effect: Data: set the values of some columns in this row

Copy

Delete

#### Action name

A unique name for this action

APPROVE

#### For a record of this table

This action applies to rows of which table?

Requests

[View Definition](#)

#### Do this

The type of action to perform

Data: set the values of some columns in this row

#### Set these columns

To the constant or expression values defined



Status

= "Approved"



- 執行特定的操作。
- 協助 AppSheet 執行各種不同的任務。也可以執行一系列動作。
- 包含資料的改動、App畫面的轉換等相關動作皆可被設定執行。

# [ACTION] - 如何調用 Action



Not Deployed

Views Brand Format Rules Options Localize

Home Info Data UX Behavior Automation Security Intelligence Manage

**Summary column**  
The top-right text for each row.

**Nested table column**  
An optional nested table (list of ref values).

**Image shape**  
What shape should the main image be?  
Square Image Round Image Full Image

**Show action bar**  
Show action buttons at the bottom of each row?

**Actions**  
Which actions to include in the action bar?

- ✓ Delete
- Edit
- View Map (Location)
- Open File (File)
- Add
- Original\_Action\_Do\_Go\_To\_Another\_View

Display

- 進入 UI/UX 畫面
- 點選 Use Action
- 選擇想要呈現的 Action

## 6. 設定自動化機器人



- 透過機器人能夠自動化做到寄信、通知、簡訊或呼叫外部 API
- 可以設定觸發條件，在執行 Process

The screenshot displays the Google Cloud Automation Engine interface for configuring a new event. The main window shows a process named 'NotifyRule' with the event type 'Data Change'. A 'New Event' dialog box is open, allowing for further configuration. The dialog includes the following sections:

- Event Type:** 'Data Change' is selected, with 'Schedule' as an alternative.
- Event Type Selection:** A row of buttons for 'All changes', 'Adds only', 'Adds and updates', 'Adds and deletes', 'Deletes only', 'Updates and deletes', and 'Updates only'.
- Table:** A dropdown menu labeled 'Location' for selecting the table to monitor.
- Condition:** A field with an equals sign '=' for defining an optional condition.

The main interface also shows a sidebar with navigation options like Home, Info, Data, UX, Behavior, Automation, Chat apps, Security, Intelligence, and Manage. The process flow includes a step 'NotifyRule\_Action 1' and an 'END' terminal.

# [Automation] 什麼是 Automation?



- 希望自動化之事項
- 在**有限的觸發條件**及**有限的處理行為**下進行
- 可透過此機制寄信、寄推播、寄簡訊
- 可使用 Webhook
- 可設定**排程執行**

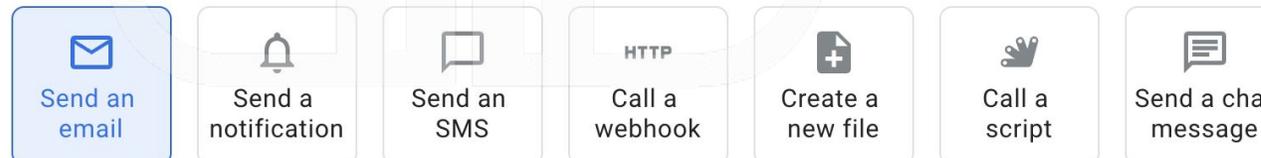
## 6. 設定自動化機器人



- 透過機器人能夠自動化做到寄信、通知、簡訊或呼叫外部 API
- 可以設定觸發條件，在執行 Process

### New Task

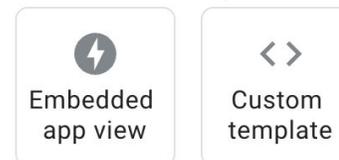
Task category  
Category of task



Task name  
Unique name for this task

New Task

Email Type



# 6. 安全性控管



- 身份驗證
- 網域驗證
- 資料安全

The screenshot shows the AppSheet configuration interface for an application named "Sign\_AppSheet Google Doc Demo". The interface is divided into several sections:

- Require Sign-In:** A toggle switch is turned on. Below it, a dropdown menu for "Authentication provider" is open, showing options: Any provider, Google (selected), Microsoft, Apple, Dropbox, Smartsheet, Box, and Salesforce.
- Domain Authentication:** A toggle switch is turned on. Below it, a section titled "Require domain authentication?" is visible, with a sub-section "Authenticate via a domain group?" (needs a corporate subscription plan when deployed).
- Security Filters:** A section titled "Integrates with corporate domains." is visible.
- Options:** A section titled "All signed-in users can access m..." is visible.

On the right side of the interface, there is a preview of the application form, which includes fields for "Customer Name", "Survey Date" (set to 2023/05/18), and two questions: "Are you happy with the quality of the food served?" and "Are you happy with the customer service you received?". The preview also shows a "Preview app as" section with the email "jerry.chen@mile.cloud" and "Apply" and "Cancel" buttons.

# 7. 儲存與佈署



- 佈署檢查
- 一鍵執行儲存與佈署

The screenshot displays the AppSheet interface for a Google Doc Demo. A modal window titled "Deployment Check" is open, showing the following details:

- Deployment Check:** You should run and pass this check before you use the app in a non-prototype setting.
- Status:** Occupancy Tracker is **not** ready to deploy. Please fix the errors below.
- Definition:**
  - App definition errors: PASSED
  - App definition warnings and errors: PASSED
  - Data matches expected structure: PASSED
  - App description: WARNING
- User Interface:** (Section header, partially visible)

The background interface shows the "Predictive Models" tab with a "New Predictive Model" button and a "Deploy" button in the top navigation bar. A sidebar on the left lists various app categories like Home, Info, Data, UX, Behavior, Automation, Chat apps, Security, and Intelligence. On the right, a "New" form is visible with fields for "Customer Name", "Survey Date" (2023/05/18), and a question "Are you happy with the quality of the food served?" with "N" and "Y" buttons.

# 03

## AppSheet 動手做



## Step by Step

### Step 1. 建立官方範本

進入Appsheet頁面，點選「Create」->「APP」->「Start with a template」

### Step 2. 下載手機 AppSheet APP

至Google Play或Apple Store，搜尋AppSheet下載並安裝，並登入。



### Step 3. 將已有 AppSheet APP製作捷徑到桌面

1. 點選APP左上角☰，點選App Gallery，此時會Show出所有這個帳號下的AppSheet APP。
2. 點選欲放製作捷徑的APP，此時會進入到該APP，點選左上角☰，點選Add Shortcut。

# 建立官方範本

# 製作捷徑

# <<05:00>>

## Step by Step

### Step 1. 建立Google Sheet

1. 建一個Google Sheet, 命名為「點名簽到管理系統」
2. 建立「在校學生」、「老師」、「系統使用者」頁籤(Table)

### Step 2. 建立頁籤(Table)欄位

- 在校學生: 學號、姓名、性別、年齡、班級、電子郵件
- 老師: 老師編號、姓名、性別、年齡、職稱、電子郵件
- 系統使用者: 使用者編號、權限、電子郵件

各建一筆假資料

### Step 3. 建立 AppSheet 應用程式

1. 在Google Sheet中, 擴充功能 -> AppSheet -> 建立應用程式, 此時會帶入到AppSheet中

在Google Sheet中  
建立資料, 並建立  
AppSheet應用程式

<<05:00>

# 認識Data

## <<10:00>>

## Step by Step

### Step 1. 認識Table

1. 測試Updates、Adds、Deletes、Read-Only
2. New Table, 把其它Google Sheet的頁籤(Table)都加入
3. AppSheet中新增一筆資料, 查看Google Sheet變化

### Step 2. 認識 Cloumns

- TYPE: 大頭照(Image)、性別(Enum, Buttons)
- 測試KEY(不能重覆) / LABEL / SHOW / EDITABLE / REQUIRE / Search
- 測試FORMULA / INITIAL VALUE / DISPLAY NAME
- 測試UNIQUEID()、USEREMAIL()

各建一筆假資料

### Step 3. 修改Google Sheet欄位

1. 在Google Sheet中, 試著修改Sheet欄位, 例如:「電子郵件」欄位改成「email」
2. 在Appsheet -> Data -> Columns -> 點選上述修改的Column, 按下Regenerate structure
3. 將1改回去, 再執行一次2

## 認識 UX

<<05:00>>

### Step by Step

#### Step 1. 了解Views

1. View type
2. View Options: 排序方式(Sort by) & 群組顯示(Group by)

#### Step 2. 了解Brand

#### Step 3. 了解Display

1. Show if

Sarah Amit  
How it's done.



# FAQ 問答



👤 (1)



分組討論室

分為數個討論群組



問與答

方便使用者提問



意見調查

迅速掌握目標對象的看法

# 人人皆開發： AppSheet 無程式碼開發教學(上) 簽到QR Code



<https://reurl.cc/mDKN5W>

請務必掃QR code後填寫相關資料並送出，若填寫不全/未送出，主辦單位未收到資料，則視同未參與課程，恕無法提供補簽到、補登時數等事宜。