

人工智慧

語音辨識教學

App Inventor串接Google語音辨識

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登入App Inventor2網站

<https://appinventor.mit.edu/>



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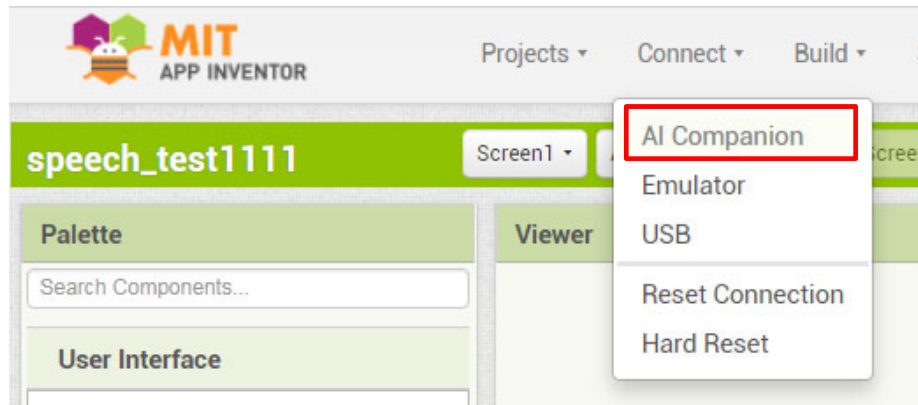


Active Users today: 109.7K	Active Users this week: 386.2K	Active Users this month: 1135.7K	Registered Users: 10.0M	Countries: 195	Apps Built: 43.3M
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在手機上測試的方法#1

測試階段

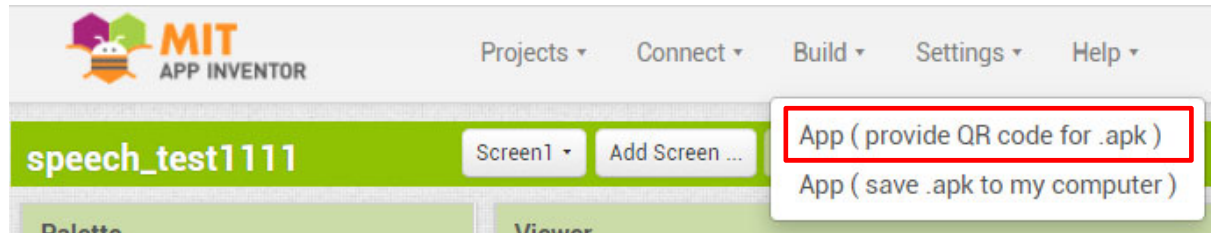
- AI Companion (透過MIT AI2 Companion APP，直接把程式傳到手機測試) 推薦!!!
- Emulator (啟動PC上的Android手機模擬器測試)
- USB (把手機透過USB連線直接測試，需先安裝驅動)



在手機上測試的方法#2

完成階段

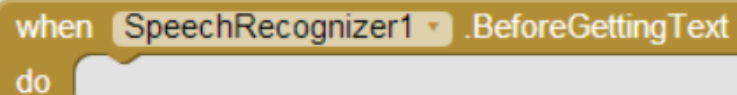
- App (provide QR code for .apk) 直接掃描QR Code把程式安裝到手機。透過AI2 Companion。建議！！
- App (save .apk to my computer) 比較麻煩，不建議這個方式。



App Inventor2的語音辨識指令

BeforeGettingText()

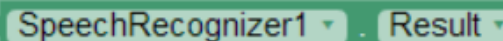
SpeechRecognizer.BeforeGettingText：在辨識器呼叫之前發出訊號。



when SpeechRecognizer1 .BeforeGettingText
do

Result

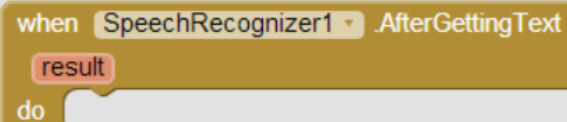
SpeechRecognizer.Result：辨識器產生的最後一段文字資料。



SpeechRecognizer1 . Result

AfterGetting(Text result)

SpeechRecognizer.AfterGetting：在辨識器產生文字資料之後發出訊號，這個參數代表產生的文字資料。

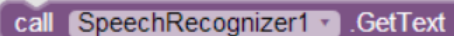


when SpeechRecognizer1 .AfterGettingText
result
do

GetText()

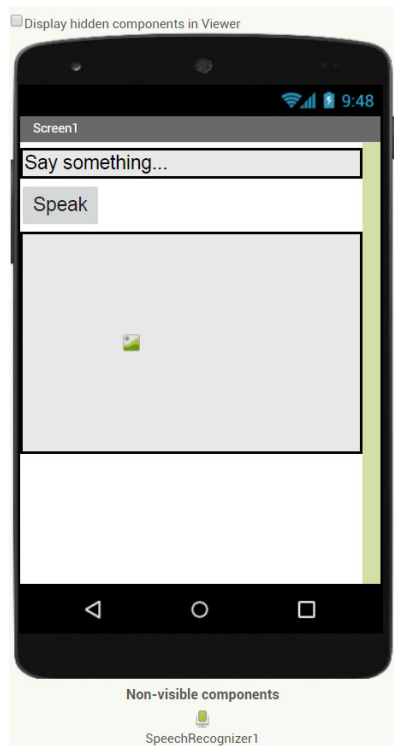
SpeechRecognizer.GetText：請使用者發言，並將語音資料轉換為文字資料。

當有結果可用時，會發出 AfterGettingText事件訊號。



call SpeechRecognizer1 .GetText

畫面設計



Components

- Screen1
 - HorizontalArrangement1
 - speech_txt
 - Button1
 - HorizontalArrangement2
 - Image1
 - SpeechRecognizer1

Rename Delete

Media

- happy.png
- sad.png

Upload File ...

完成畫面

可以辨識使用者說的話
以及辨識情緒，顯示開心與難過圖片
PS. 需先準備開心與難過照片一張，
並上傳App Inventor2



程式碼

```
initialize global speech_result to ""

when Button1 .Click
do call SpeechRecognizer1 .GetText

when SpeechRecognizer1 .AfterGettingText
result partial
do set global speech_result to get result
set speech_txt . Text to get global speech_result
call check

to check
do if contains text get global speech_result
piece "好"
then set Image1 . Picture to "happy.png"
else set Image1 . Picture to "sad.png"
```


試著加入文字轉語音功能

Text to Speech (TTS)

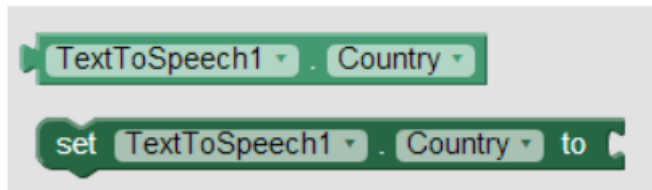
把辨識出來的文字念出來

上網搜尋資源如何完成

APP Inventor2 提供的TTS指令

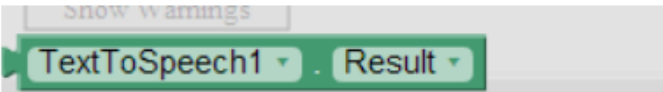
Country

TextToSpeech.Country : 語音輸出的國家代碼。



Result

TextToSpeech.Result : 詳細資訊。



Pitch

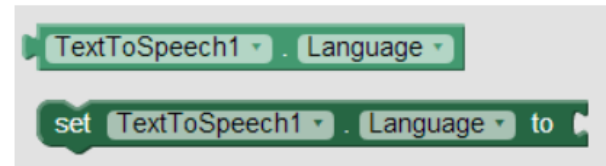
TextToSpeech.Pitch : 音調。

設定TTS的音調高低，數字介於0~2，值越低音調越低，反之則越高



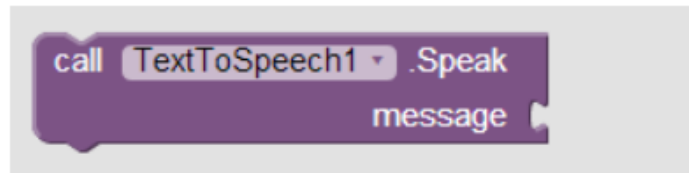
Language

TextToSpeech.Language : 語音輸出的語言代碼。



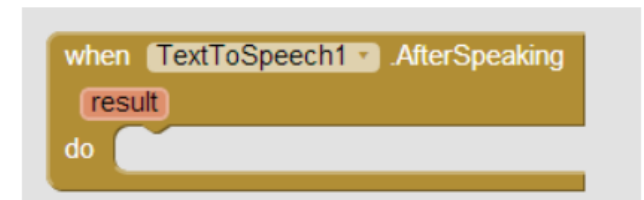
Speak(Text message)

TextToSpeech.Speak : 發送指定文字資料。



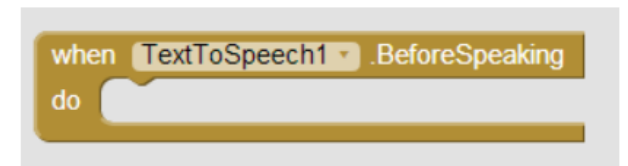
AfterSpeaking(Text result)

TextToSpeech.AfterSpeaking : 文字資料發送後的信號，該參數是依文字資料的結果產生的。



BeforeSpeaking()

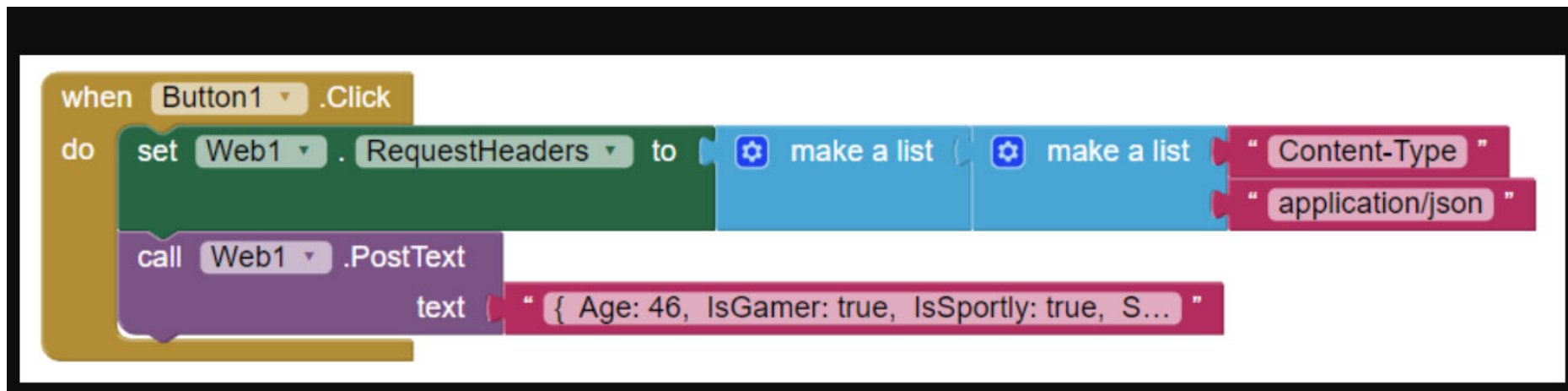
TextToSpeech.BeforeSpeaking : 在文字資料發出前發出的信號。



進階議題

傳送POST/GET/JSON

傳送JSON格式



```
when Button1 .Click
do
  set Web1 . RequestHeaders to
    make a list
    make a list
    "Content-Type"
    "application/json"
  call Web1 .PostText
  text " { Age: 46, IsGamer: true, IsSportly: true, S... "
```

The image shows a Scratch script for sending JSON data. It starts with a 'when Button1 .Click' block. Inside a 'do' block, there are two 'make a list' blocks. The first 'make a list' block is connected to a 'set Web1 . RequestHeaders to' block. The second 'make a list' block is connected to the first 'make a list' block. The first 'make a list' block contains two items: 'Content-Type' and 'application/json'. The second 'make a list' block contains one item: 'Content-Type'. Below the 'do' block, there is a 'call Web1 .PostText' block with a 'text' block containing the JSON string: '{ Age: 46, IsGamer: true, IsSportly: true, S... '.