

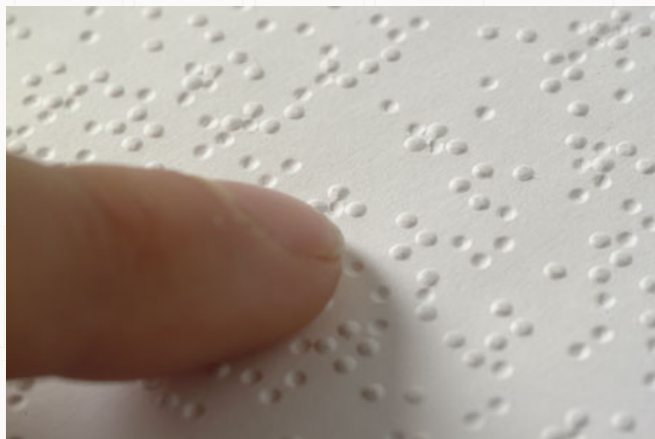


# I Easy Dots

Chinese text input tool for the  
visual impaired

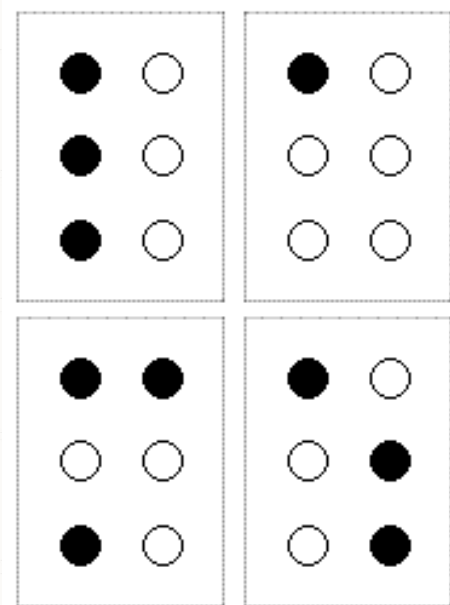
# What is this app about?

- A Chinese text input tool for the visually impaired (vi) iPhone users
- Based on Cantonese pinyin braille input method - 廣東話拼音點字輸入法



# Cantonese pinyin braille input method

- VI persons use **Braille**(點字) to read and write
- Each Braille pattern is represented by six dots arranged in two columns



# Cantonese Braille

- Each Chinese character is represented by a 聲母(initial), 韻母(final) and 聲調(tone)  
For example...

|   | Initial | Final | Tone |
|---|---------|-------|------|
| 你 | n       | ei    | 5    |
| 好 | h       | ou    | 2    |

- Each 聲母, 韻母, 聲調 is represented by a braille pattern

# From Pinyin to Braille pattern

## Initials

|   |   |   |   |   |   |   |   |   |   |   |   |   |    |    |    |    |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|----|----|----|----|---|
|   |   |   |   |   |   |   |   |   |   |   |   |   |    |    |    |    |   |
| f | h | g | k | l | m | b | p | s | d | t | w | j | dz | tz | gw | kw | n |

## Finals

|     |     |     |     |     |      |    |    |    |     |    |    |     |   |
|-----|-----|-----|-----|-----|------|----|----|----|-----|----|----|-----|---|
|     |     |     |     |     |      |    |    |    |     |    |    |     |   |
| a   | e   | i   | ou  | o   | ei   | ai | eu | au | ei  | iu | u  | oi  | y |
|     |     |     |     |     |      |    |    |    |     |    |    |     |   |
| ey  | ui  | em  | am  | im  | en   | an | in | on | cen | un | yn | enj |   |
|     |     |     |     |     |      |    |    |    |     |    |    |     |   |
| anj | enj | inj | onj | unj | cenj | ce | ek | ak | ik  | ek | ok | uk  |   |
|     |     |     |     |     |      |    |    |    |     |    |    |     |   |
| cek | et  | at  | it  | ot  | cet  | ut | yt | ep | ap  | ip | m  | n   |   |

## Tones

|     |   |   |   |     |   |   |
|-----|---|---|---|-----|---|---|
|     |   |   |   |     |   |   |
| 1/7 | 3 | 2 | 8 | 4/9 | 6 | 5 |

## Punctuation

|   |   |   |   |   |   |   |   |     |   |     |
|---|---|---|---|---|---|---|---|-----|---|-----|
|   |   |   |   |   |   |   |   |     |   |     |
| , | . | ; | : | ? | ! | “ | ” | ( ) | — | ... |

# From Pinyin to Braille pattern

Initials

|   |   |   |   |   |   |   |   |   |   |   |   |   |    |    |    |    |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|----|----|----|----|---|
|   |   |   |   |   |   |   |   |   |   |   |   |   |    |    |    |    |   |
| f | h | g | k | l | m | b | p | s | d | t | w | j | dz | tz | gw | kw | n |

Finals

|    |    |    |    |    |    |    |    |    |    |    |    |    |   |
|----|----|----|----|----|----|----|----|----|----|----|----|----|---|
|    |    |    |    |    |    |    |    |    |    |    |    |    |   |
| a  | e  | i  | ou | o  | ei | ai | eu | au | ei | iu | u  | oi | y |
|    |    |    |    |    |    |    |    |    |    |    |    |    |   |
| œy | ui | em | am | im | en | an | in | on | œn | un | yn | ej |   |
|    |    |    |    |    |    |    |    |    |    |    |    |    |   |
| an | en | ij | on | un | œn | œ  | ek | ak | ik | ek | ok | uk |   |
|    |    |    |    |    |    |    |    |    |    |    |    |    |   |
| œk | et | at | it | ot | œt | ut | yt | ep | ap | ip | m  | n  |   |

Tones

|     |   |   |   |   |   |   |
|-----|---|---|---|---|---|---|
|     |   |   |   |   |   |   |
| 1/7 | 2 | 3 | 4 | 5 | 6 | 7 |

Punctuation

|   |   |   |   |   |   |   |   |     |   |     |
|---|---|---|---|---|---|---|---|-----|---|-----|
|   |   |   |   |   |   |   |   |     |   |     |
| , | . | ; | : | ? | ! | “ | ” | ( ) | — | ... |

Example:

好 hou2

|         |       |      |
|---------|-------|------|
| Initial | Final | Tone |
| h       | ou    | 2    |

Translated to...

|  |  |  |
|--|--|--|
|  |  |  |
|--|--|--|

# From Pinyin to Braille pattern

- If a vi person knows the pinyin of a word, he/she will know what braille patterns to use



# I Easy Dots – How to use

- “I Easy Dots” provides four ways of inputting Chinese based on Cantonese Braille
- VI user is expected to use this app with VoiceOver turned ON, Language set to “繁體中文”, Regional Format set to HKSAR





# I Easy Dots – How to use

- Click “輸入方法” to choose an input method



- 4 ways of text input methods provided:
  - 拼音直接輸入
  - 半方輸入
  - 點字字形輸入
  - 連點輸入

This tutorial will explain how to type the word

“好” (with the Braille pattern “⠠⠠⠠”) using each of these input methods

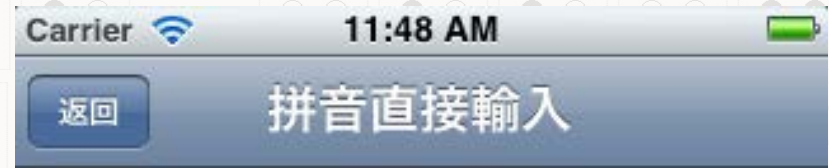


After choosing the input method,  
Press “點字輸入” to start  
inputting text



# 拼音直接輸入




























- With this method, the Braille pattern is represent by its corresponding ASCII character



# 拼音直接輸入

- Each Braille pattern has an ASCII equivalent

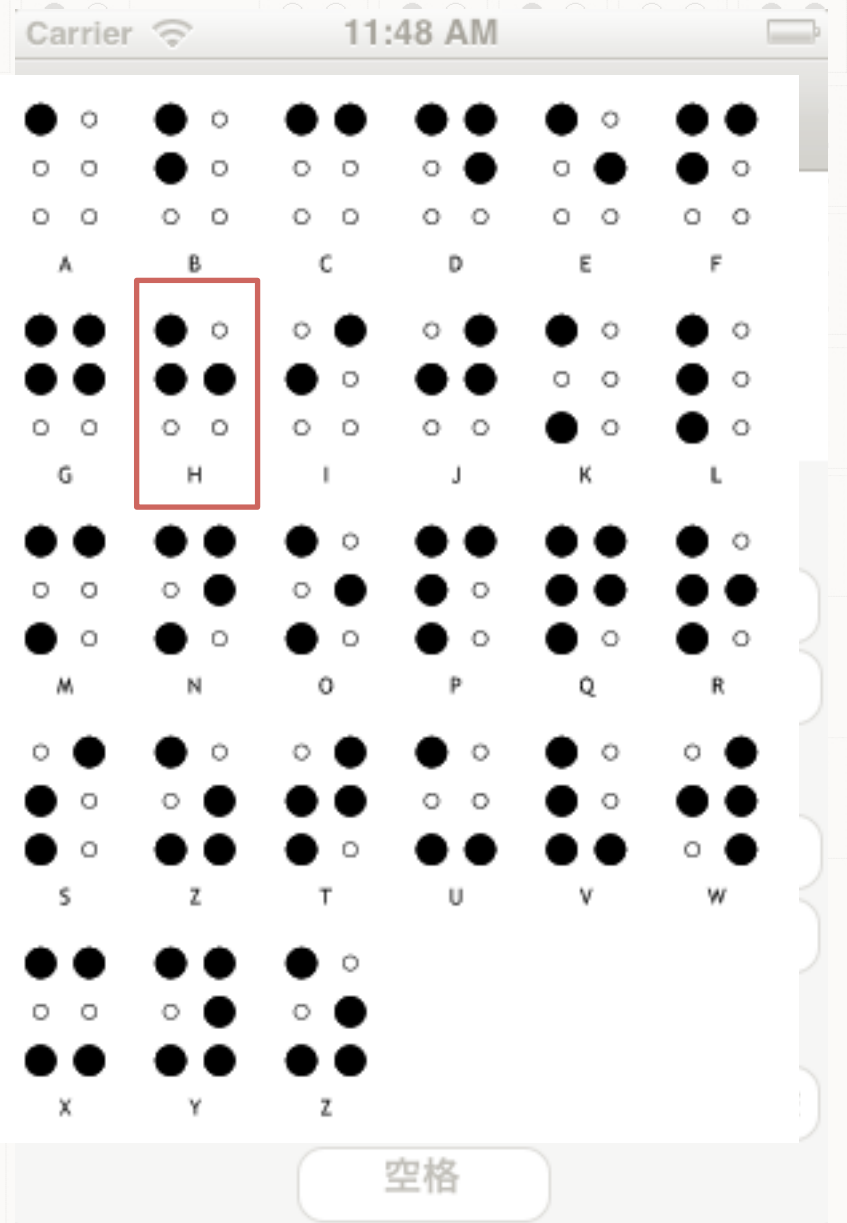
Carrier 11:48 AM

|                                                                                       |                                                                                       |                                                                                       |                                                                                      |                                                                                      |                                                                                      |
|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|    |    |    |   |   |   |
| A                                                                                     | B                                                                                     | C                                                                                     | D                                                                                    | E                                                                                    | F                                                                                    |
|    |    |    |   |   |   |
| G                                                                                     | H                                                                                     | I                                                                                     | J                                                                                    | K                                                                                    | L                                                                                    |
|    |    |    |   |   |   |
| M                                                                                     | N                                                                                     | O                                                                                     | P                                                                                    | Q                                                                                    | R                                                                                    |
|   |   |   |  |  |  |
| S                                                                                     | Z                                                                                     | T                                                                                     | U                                                                                    | V                                                                                    | W                                                                                    |
|  |  |  |                                                                                      |                                                                                      |                                                                                      |
| X                                                                                     | Y                                                                                     | Z                                                                                     |                                                                                      |                                                                                      |                                                                                      |

空格

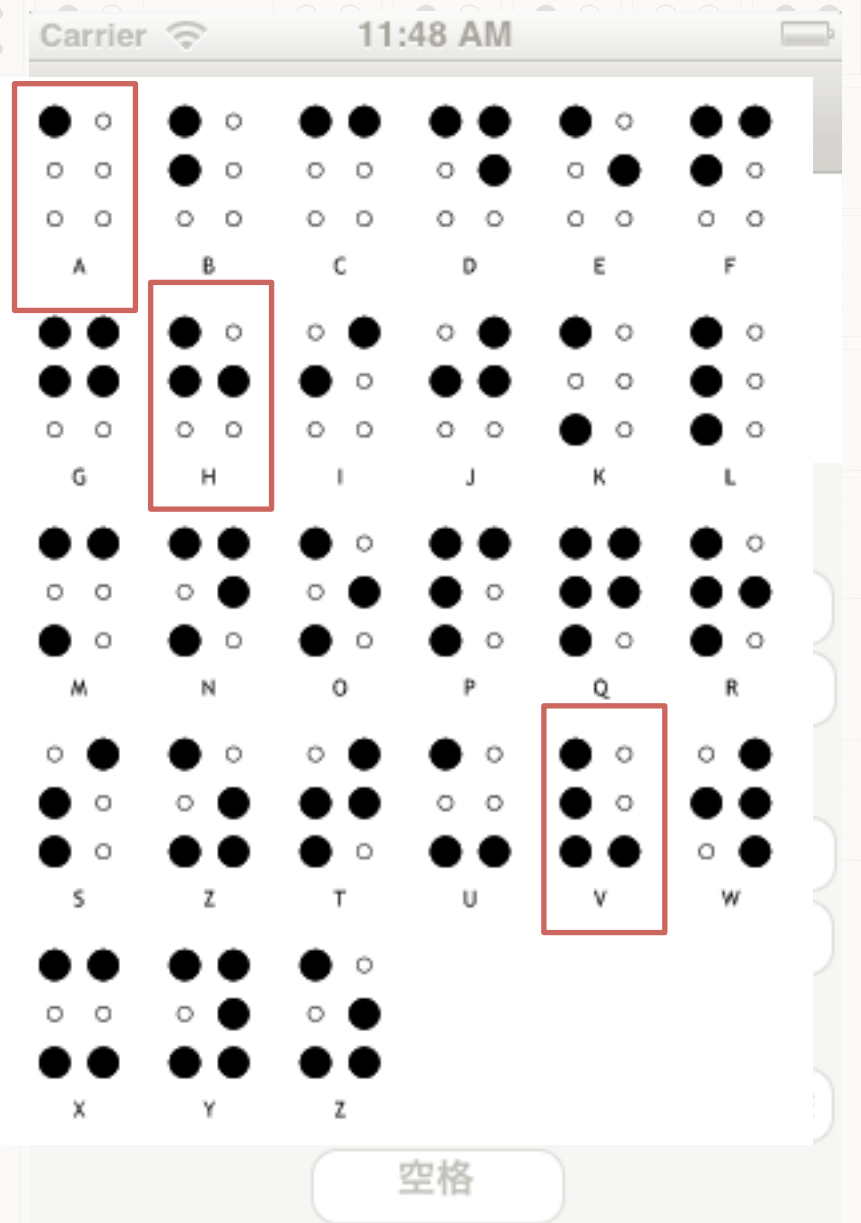
# 拼音直接輸入 - Example

- In English Braille, “⠠” stands for “h”
- To enter the pattern “⠠”, simply press “h”



# 拼音直接輸入 - Example

- The pattern  $\begin{matrix} \bullet & \bullet & \bullet \\ \bullet & \bullet & \bullet \\ \bullet & \bullet & \bullet \end{matrix}$  can thus be entered as “h”, “v”, and “a”



# 拼音直接輸入 - Example

- Press “翻譯” to translated the patterns into Chinese character (“好”)





# 拼音直接輸入 - Example

- The disambiguation page is displayed
- Each pinyin may correspond to more than one Chinese character
- Select the desired word and it will be input and stored



# 拼音直接輸入 - Example

- You can input another word, or click “返回” to go back to the main page



# 拼音直接輸入 - Example

- The word input will be shown in the main page



# 半方輸入

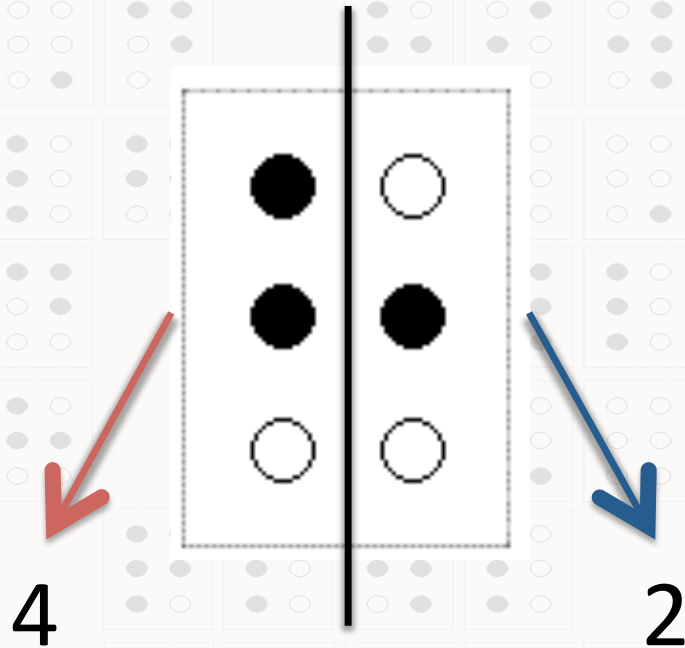
- A Braille is divided into two halves (columns), each represented by a number

|   |   |
|---|---|
| 0 |   |
| 1 | ⠠ |
| 2 | ⠡ |
| 3 | ⠢ |
| 4 | ⠣ |
| 5 | ⠤ |
| 6 | ⠥ |
| 7 | ⠦ |

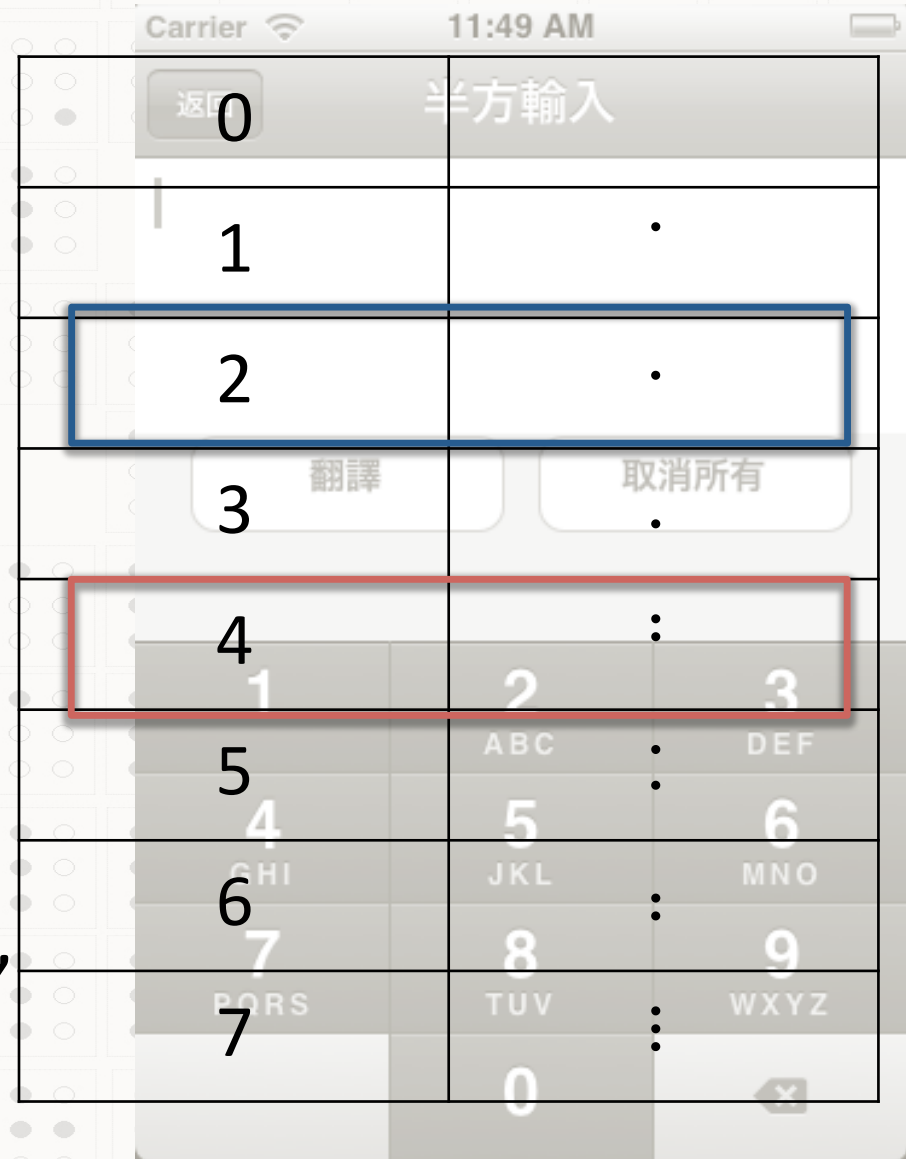


# 半方輸入 - Example

- For the pattern “:.”.....



- To enter the pattern “:.”, simply enter “42”



# 半方輸入 - Example

- The patterns  $\ddot{\cdot}$   $\dot{\cdot}$   $\cdot$  can thus be entered by typing 42, 73, 10



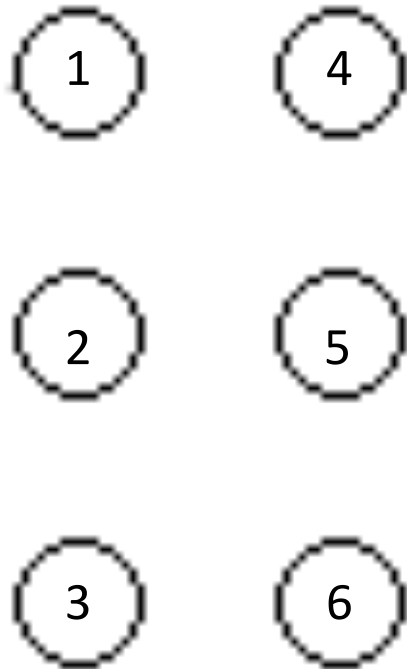
# 半方輸入 - Example

- Press “翻譯” to translate the pattern into Chinese (好)



# 點字字形輸入

- This method inputs Braille pattern directly





# 點字字形輸入 - Example

- To input the pattern “∴” ...
  - Press 1, 2, 5
  - Then Press “完成”



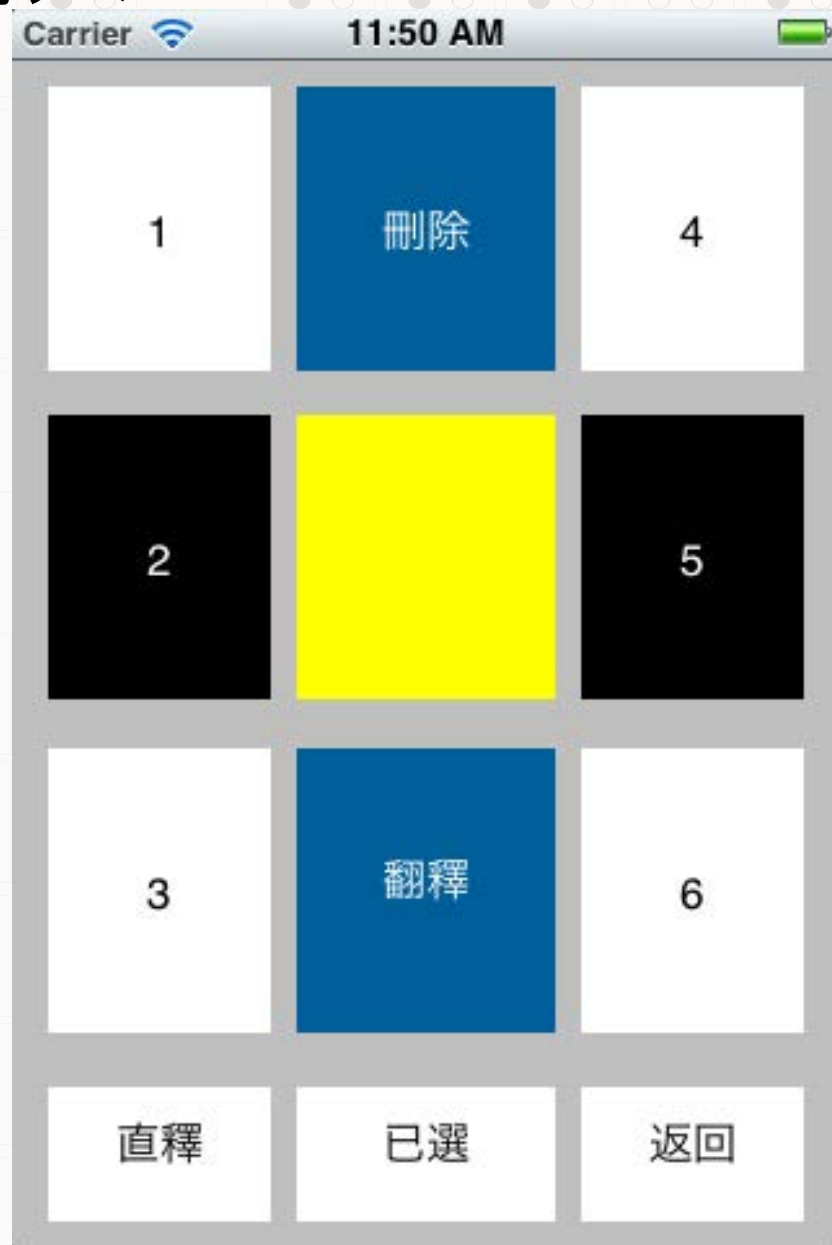
# 點字字形輸入 - Example

- To input the patterns  
∴ and ∙ ...
  - Press 1, 2, 3, 6, then “完成”
  - Press 1, then “完成”
  - Press “翻譯” to translate the patterns to Chinese character (好)



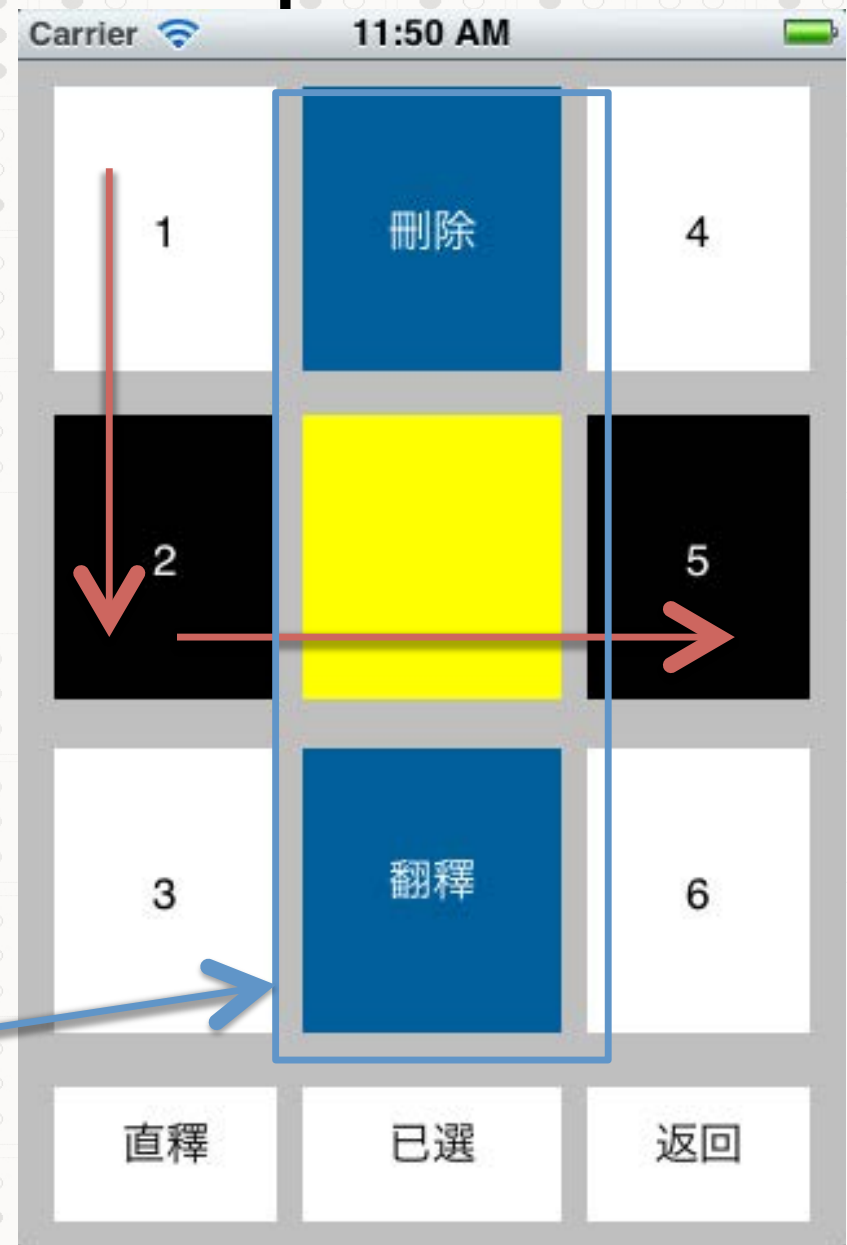
# 連點輸入

- This input method is similar to 點字輸入
- Swipe through the numbers corresponding to the dots on a single continuous stroke



# 連點輸入 - Example

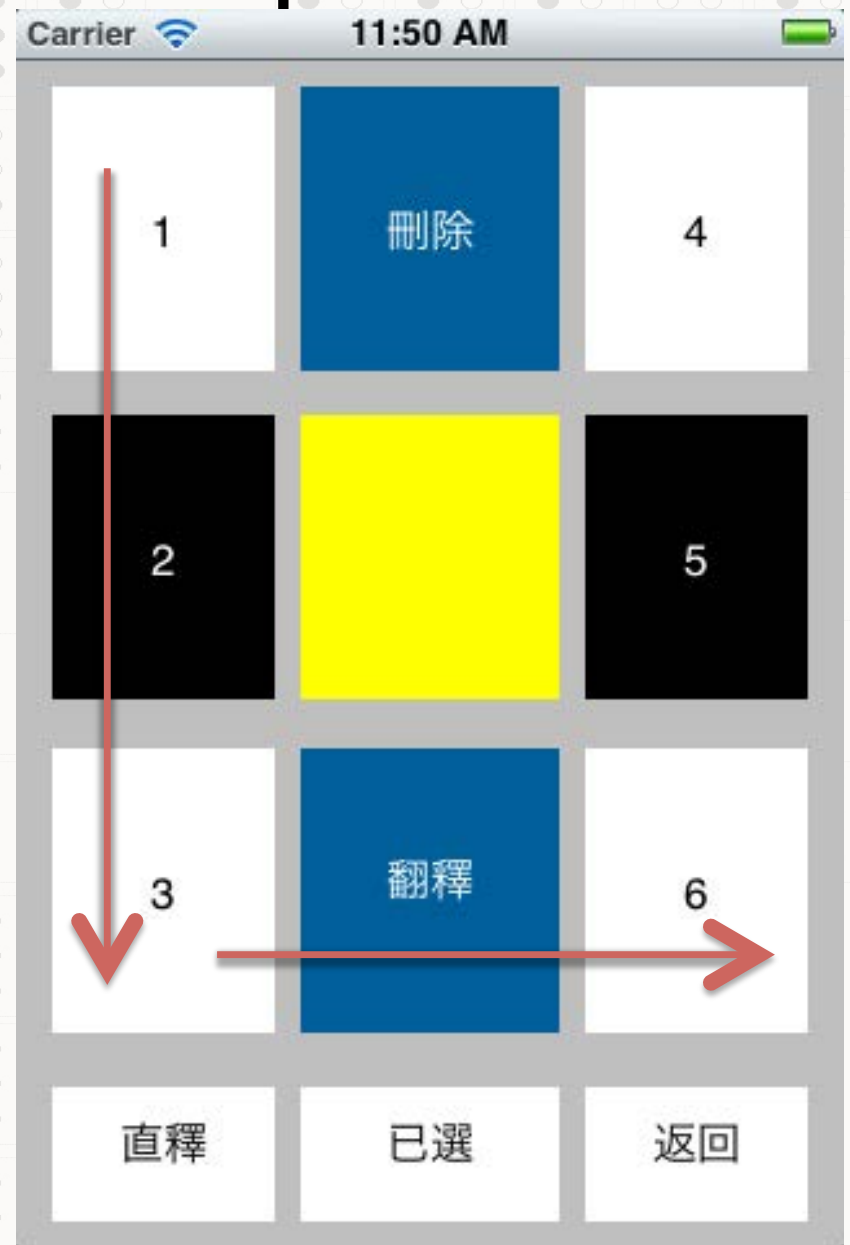
- To input the pattern “∴” ...
  - Swipe through 1, 2 and 5
  - The pattern is recorded until you lift your finger



Swiping through this column will not affect the pattern being input

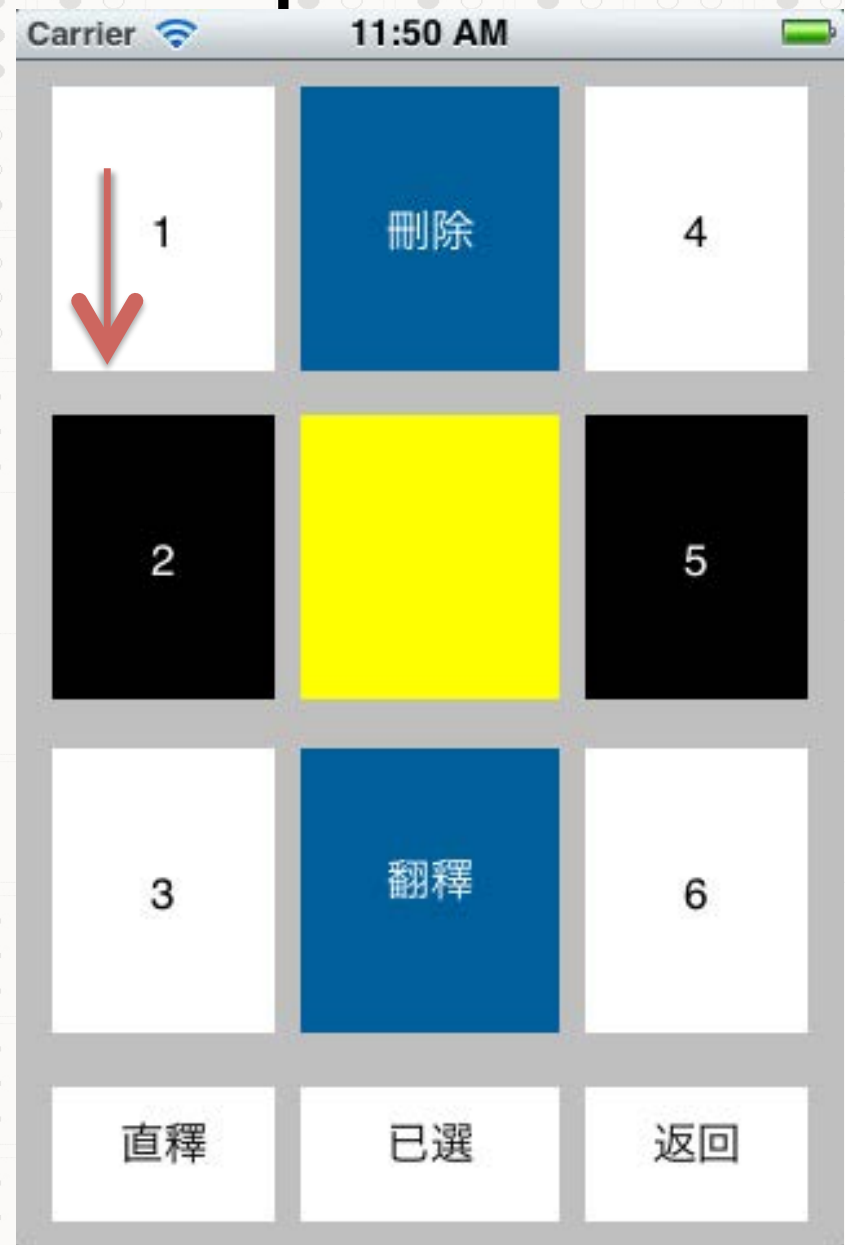
# 連點輸入 - Example

- To input the pattern “:.” ...
  - Swipe through 1, 2, 3 and 6
  - Lift your finger



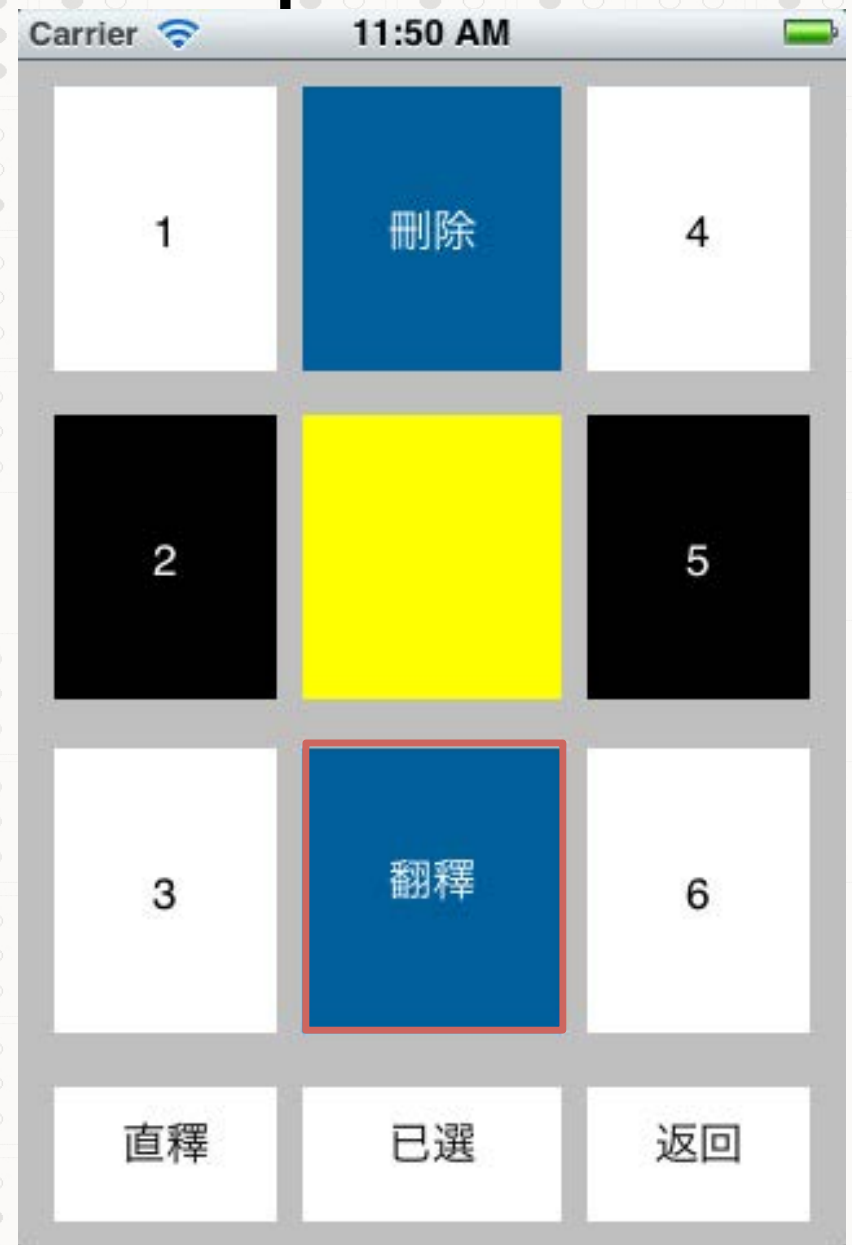
# 連點輸入 - Example

- To input the pattern “•” ...
  - Swipe through 1 and lift your finger



# 連點輸入 - Example

- Press “翻譯”, the patterns you input so far will be translated to the corresponding Chinese character (∴∴∴ ->好)



# Main Page

- Text you entered is stored and displayed here





# Main Page

- You may click “發出” to send the text by email/SMS; or save it



# Main Page

- You may click “發出” to send the text by email/SMS; or save it



The background of the slide is a grid of 3x3 dot patterns. Each cell in the grid contains a different arrangement of 9 dots (3 rows by 3 columns). Some dots are filled (black), while others are empty (white). The patterns vary across the grid, creating a textured, grid-like background.

# I Easy Dots

## Making Chinese Text Input Possible