

C 程式設計題

命題者：WWK

題目名稱(中文/英文)：Phone "words" problem

主要測試觀念：Recurrence

Basics	Decision and Loops	Functions
<input type="checkbox"/> Keywords and Identifier <input type="checkbox"/> Variables and Constants <input type="checkbox"/> Programming Data Types <input type="checkbox"/> Expressions <input type="checkbox"/> Basic Input/Output <input type="checkbox"/> Programming Operators	<input checked="" type="checkbox"/> Programming if...else <input checked="" type="checkbox"/> Programming for Loops <input type="checkbox"/> do...while Loops <input type="checkbox"/> break and continue <input type="checkbox"/> switch...case Statement <input type="checkbox"/> Programming goto	<input type="checkbox"/> User-defined Functions <input type="checkbox"/> Function Types <input type="checkbox"/> Programming recursion <input checked="" type="checkbox"/> Storage Class (variable life)
Arrays and Strings	Pointers	Structure and Union
<input type="checkbox"/> Arrays <input type="checkbox"/> Multi-dimensional Arrays <input type="checkbox"/> Arrays and Functions <input type="checkbox"/> Strings and Functions	<input type="checkbox"/> Pointers And Arrays <input type="checkbox"/> Pointers And Functions <input type="checkbox"/> Dynamic Memory Allocations	<input type="checkbox"/> Structures and Pointers <input type="checkbox"/> Structure and Function <input type="checkbox"/> Programming Unions
Files I/O	Miscellaneous	Other
<input type="checkbox"/> Files Input/Output basics <input type="checkbox"/> Character I/O and String I/O <input type="checkbox"/> Block I/O <input type="checkbox"/> Advanced File I/O manipulations	<input type="checkbox"/> Enumeration <input type="checkbox"/> Preprocessor <input type="checkbox"/> Low level programming <input type="checkbox"/> Error handling <input type="checkbox"/> Standard/advanced library	<input type="checkbox"/> Programming logic training <input type="checkbox"/> Programming structure/design training <input type="checkbox"/> Localization issues <input type="checkbox"/> _____

題目說明：Each number on the telephone dial (except 0 and 1) corresponds to three alphabetic characters. Those correspondences are:

2 ABC
 3 DEF
 4 GHI
 5 JKL
 6 MNO
 7 PRS
 8 TUV
 9 WXY

Given a telephone number, print all possible "words" that number spells. (They may not be real English words, but just some sequence of characters). Since the digits 0 and 1 have no alphabetic equivalent, an input number which contains those digits should be rejected.

輸入說明：輸入一串數字(輸入最多 100 個字元，有效數字最多 7 個數字，當已輸入完 7 個有效數字後的輸入請忽略之)，當有 '0' 或 '1' 時請輸出 "Can't print a word!"，若遇到非數字請忽略之。

輸出說明：輸出所有可能，輸出順序請參照字典順序，若無有效數字請輸出 "None."。

I0 範例：

	Sample Input	Sample Output
第一組測資與輸出	0123456789	Can't print a word!
第二組	23	AD AE AF BD BE BF CD CE CF
第三組	...34 7?	DGP DGR DGS DHP DHR DHS DIP DIR DIS EGP EGR EGS EHP EHR EHS EIP EIR EIS FGP FGR FGS FHP FHR FHS FIP FIR FIS
第四組	? .!10	Can't print a word!
第五組	? .!	None.

附屬資料：

- ☒ 解答程式： PhoneWordsProblem.c (檔名)
- ☒ 測試資料： input.txt, output.txt

- ☐ 易，僅需用到基礎程式設計語法與結構 (如單迴圈等)
- ☐ 中，需用到多項程式設計語法與結構 (如雙層迴圈等)
- ☒ 難，需用到多項程式結構或較為複雜之資料型態或結構 (如遞迴、串連等)

解題時間：30 分鐘。
其他註記：