

## CPP 程式設計題

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題目名稱(中文/英文)：Sudoku Checker

主要測試觀念： Arrays, Flow of Control

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|--|--|
| <input type="checkbox"/> C++ BASICS 1                                  | <input type="checkbox"/> SEPARATE COMPILATION AND NAMESPACES |
| <input checked="" type="checkbox"/> FLOW OF CONTROL                    | <input type="checkbox"/> STREAMS AND FILE I/O                |
| <input type="checkbox"/> FUNCTION BASICS                               | <input type="checkbox"/> RECURSION                           |
| <input type="checkbox"/> PARAMETERS AND OVERLOADING                    | <input type="checkbox"/> INHERITANCE                         |
| <input checked="" type="checkbox"/> ARRAYS                             | <input type="checkbox"/> POLYMORPHISM AND VIRTUAL FUNCTIONS  |
| <input type="checkbox"/> STRUCTURES AND CLASSES                        | <input type="checkbox"/> TEMPLATES                           |
| <input type="checkbox"/> CONSTRUCTORS AND OTHER TOOLS                  | <input type="checkbox"/> LINKED DATA STRUCTURES              |
| <input type="checkbox"/> OPERATOR OVERLOADING, FRIENDS, AND REFERENCES | <input type="checkbox"/> EXCEPTION HANDLING                  |
| <input type="checkbox"/> STRINGS                                       | <input type="checkbox"/> STANDARD TEMPLATE LIBRARY           |
| <input type="checkbox"/> POINTERS AND DYNAMIC ARRAYS                   | <input type="checkbox"/> PATTERNS AND UML                    |

### 題目說明：

A Sudoku is a 9x9 grid that is completed when every 3x3 square, row and column consist of the numbers 1-9.

For this task, you will be given a completed 9x9 square, Create a function that checks to make sure each 3x3 square contains each number from 1-9 exactly once, and there are no duplicates.

Furthermore, each row and each column doesn't contain duplicates with no numbers outside the range 1-9.

### 輸入說明：

81 integers separated with comma for each line, with input sequence 1~81 corresponding to the position drawn below. Color signifies 3x3 squares for checks.

1	2	3	4	5	6	7	8	9
10	11	12	13	14	15	16	17	18
19	20	21	22	23	24	25	26	27
28	29	30	31	32	33	34	35	36
37	38	39	40	41	42	43	44	45
46	47	48	49	50	51	52	53	54
55	56	57	58	59	60	61	62	63
64	65	66	67	68	69	70	71	72
73	74	75	76	77	78	79	80	81

輸出說明：As Sample:

IO 範例：

	Sample Input	Sample Output
第一組測資與輸出	1, 2, 6, 1, 5, 4, 3, 9, 7 9, 6, 5, 3, 2, 7, 1, 4, 8 3, 4, 8, 6, 8, 9, 7, 5, 2 5, 9, 3, 4, 6, 8, 2, 7, 1 4, 7, 2, 5, 1, 3, 6, 8, 9 6, 1, 8, 9, 7, 2, 4, 3, 5 7, 8, 6, 2, 3, 5, 9, 1, 4 1, 5, 4, 7, 9, 6, 8, 2, 3 2, 3, 9, 8, 4, 1, 5, 6, 7  8, 2, 7, 1, 5, 4, 3, 9, 6 9, 6, 5, 3, 2, 7, 1, 4, 8 3, 4, 1, 6, 8, 9, 7, 5, 2 5, 9, 3, 4, 6, 8, 2, 7, 1 4, 7, 2, 5, 1, 3, 6, 8, 9 6, 1, 8, 9, 7, 2, 4, 3, 5 7, 8, 6, 2, 3, 5, 9, 1, 4 1, 5, 4, 7, 9, 6, 8, 2, 3 2, 3, 9, 8, 4, 1, 5, 6, 7	False True
第二組	1, 2, 6, 1, 5, 4, 3, 9, 7 9, 6, 5, 3, 2, 7, 1, 4, 8 3, 4, 8, 6, 8, 9, 7, 5, 2 5, 9, 3, 4, 6, 8, 2, 7, 1 4, 7, 2, 5, 1, 3, 6, 8, 9 6, 1, 8, 9, 7, 2, 4, 3, 5 7, 8, 6, 2, 3, 5, 0, 1, 4 1, 5, 4, 7, 9, 6, 8, 2, 3 2, 3, 9, 8, 4, 7, 5, 6, 1	False

附屬資料：

☒ 解答程式：source.cpp

☒ 測試資料：input.txt, output.txt

☒ 易，僅需用到基礎程式設計語法與結構

☐ 中，需用到多項程式設計語法與結構

☐ 難，需用到多項程式結構或較為複雜之資料型態或結構

解題時間：20 分鐘。

其他註記：

● Continue output until EOF is read.

● cin.getline may be needed