**SCPP程式設計題**

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| **命題者︰ Jun-Yu Chen** |
| **題目名稱(中文/英文)：Sudoku Checker** |
| **主要測試觀念：** Arrays, Flow of Control   |  |  | | --- | --- | |  |  | | * C++ BASICS 1 * FLOW OF CONTROL * FUNCTION BASICS * PARAMETERS AND OVERLOADING * ARRAYS * STRUCTURES AND CLASSES * CONSTRUCTORS AND OTHER TOOLS * OPERATOR OVERLOADING, FRIENDS,AND REFERENCES * STRINGS * POINTERS AND DYNAMIC ARRAYS | * SEPARATE COMPILATION AND NAMESPACES * STREAMS AND FILE I/O * RECURSION * INHERITANCE * POLYMORPHISM AND VIRTUAL FUNCTIONS * TEMPLATES * LINKED DATA STRUCTURES * EXCEPTION HANDLING * STANDARD TEMPLATE LIBRARY * 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** |