CPP 程式設計題

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題目名稱(中文/英文)：Combinations

主要測試觀念：

Basics		Functions	
■	C++ BASICS 1	☐	SEPARATE COMPILATION AND NAMESPACES
☐	FLOW OF CONTROL	☐	STREAMS AND FILE I/O
☐	FUNCTION BASICS	■	RECURSION
☐	PARAMETERS AND OVERLOADING	☐	INHERITANCE
☐	ARRAYS	☐	POLYMORPHISM AND VIRTUAL FUNCTIONS
☐	STRUCTURES AND CLASSES	☐	TEMPLATES
☐	CONSTRUCTORS AND OTHER TOOLS	☐	LINKED DATA STRUCTURES
☐	OPERATOR OVERLOADING, FRIENDS, AND REFERENCES	☐	EXCEPTION HANDLING
☐	STRINGS	☐	STANDARD TEMPLATE LIBRARY
☐	POINTERS AND DYNAMIC ARRAYS	☐	PATTERNS AND UML

題目說明：Please write a recursive function to enumerate all combinations of $C(n, r)$. Note that we will use the following code snippets to test your program:

```cpp
#define ELEMENTS_FOR_COMBINATION 5   //i.e., C(5,4)
#define DLEMENTS_FOR_CHOICE 4


int main(void)
{
    int *arrayPtr = new int[ELEMENTS_FOR_COMBINATION];


    //Get all elements for combination
    for (int i = 0; i < ELEMENTS_FOR_COMBINATION; ++i)
        arrayPtr[i] = i + 1;


    PrintCombination(arrayPtr, ELEMENTS_FOR_COMBINATION, DLEMENTS_FOR_CHOICE);


    if (arrayPtr != NULL)
        delete[] arrayPtr;


    return 0;
}
```

The function, PrintCombination(int *, int, int), is for print all the combination results on console by recursive

輸入說明：no input
輸出說明：

IO 範例：		
	Sample Input	**Sample Output**
測資與輸出	sample.cpp	1 2 3 4 1 2 3 5 1 2 4 5 1 3 4 5 2 3 4 5

附屬資料：

☑解答程式：Combinations.cpp(檔名)

☑測試資料：input-main1.cpp, output1.txt, input-main2.cpp, output2.txt, input-main3.cpp, output3.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：30 分鐘。