**CPP程式設計題**

|  |
| --- |
| **命題者︰Wen-Kai, Wang** |
| **題目名稱(中文/英文)：Combinations** |
| **主要測試觀念：**   |  |  | | --- | --- | | **Basics** | **Functions** | | * 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：Please write a recursive function to enumerate all combinations of . Note that we will use the following code snippets to test your program:**   |  | | --- | | #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。 |
|  |