<u>EE-2310 計算機程式設計 (Introduction to Programming)</u>
Homework #8 (佔學期總成績 3 分)
(每人一組) Due on Jan. 17, 2019
<u>Late Homeworks will NOT be accepted !</u>

1. Write a C++ program that automatically **prints all permutations of *n* elements**, denoted as {1, 2, …, *n*}. At the end, report the total number permutations as well. (Hint: This problem is highly recursive and thus a recursive program is more suitable for solving this problem). Test your program by setting *n* to 4, and produce the following results.
   <u>(Demonstrate your result to a TA to get the 3 score point for this homework).</u>

   The 1-th Pattern: (0 1 2 3)
   The 2-th Pattern: (0 1 3 2)
   The 3-th Pattern: (0 2 1 3)
   The 4-th Pattern: (0 2 3 1)
   The 5-th Pattern: (0 3 2 1)
   The 6-th Pattern: (0 3 1 2)
   The 7-th Pattern: (1 0 2 3)
   The 8-th Pattern: (1 0 3 2)
   The 9-th Pattern: (1 2 0 3)
   The 10-th Pattern: (1 2 3 0)
   The 11-th Pattern: (1 3 2 0)
   The 12-th Pattern: (1 3 0 2)
   The 13-th Pattern: (2 1 0 3)
   The 14-th Pattern: (2 1 3 0)
   The 15-th Pattern: (2 0 1 3)
   The 16-th Pattern: (2 0 3 1)
   The 17-th Pattern: (2 3 0 1)
   The 18-th Pattern: (2 3 1 0)
   The 19-th Pattern: (3 1 2 0)
   The 20-th Pattern: (3 1 0 2)
   The 21-th Pattern: (3 2 1 0)
   The 22-th Pattern: (3 2 0 1)
   The 23-th Pattern: (3 0 2 1)
   The 24-th Pattern: (3 0 1 2)
   There are 24 permutations in total!