資料結構報告

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目錄

[**1. 解題說明 2**](#_Toc173274806)

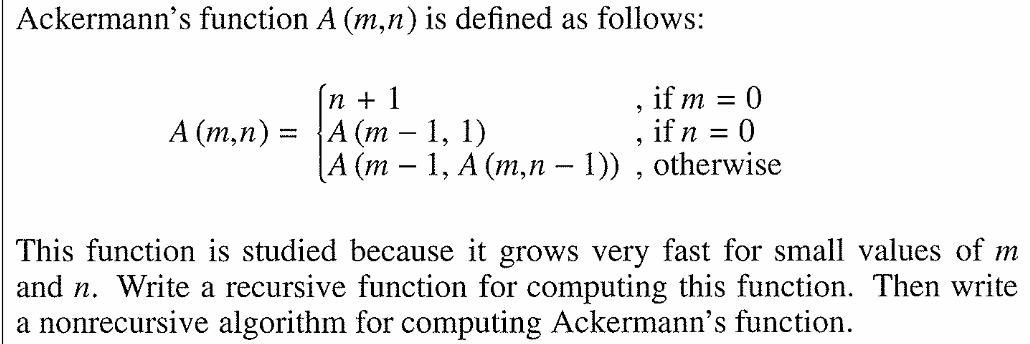
[**2. 演算法設計與實作 5**](#_Toc173274807)

[**3. 效能分析 6**](#_Toc173274808)

[**4. 測試與過程 7**](#_Toc173274809)

1. 解題說明

**第一題先以遞迴的形式完成Ackermann function，接著再利用vector的堆疊特性實現非遞迴**



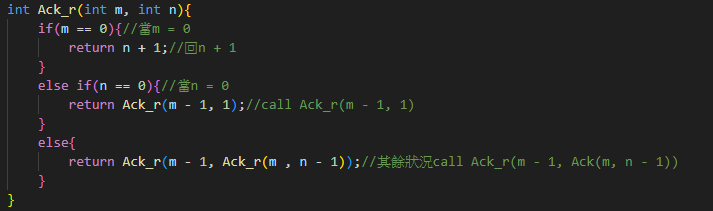


Figure1.1:R\_Ackermann.cpp

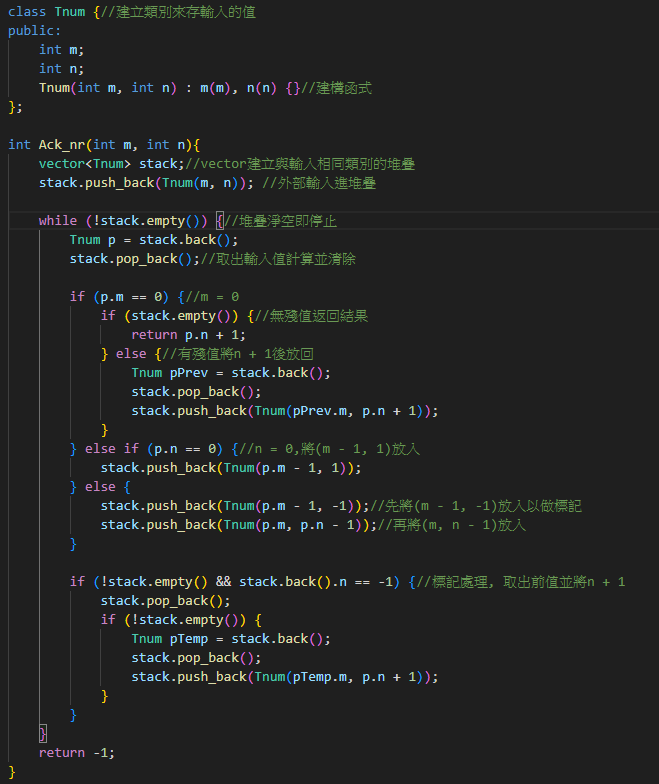


Figure1.2:NR\_Ackermann.cpp

**第二題以vector來實現sets**

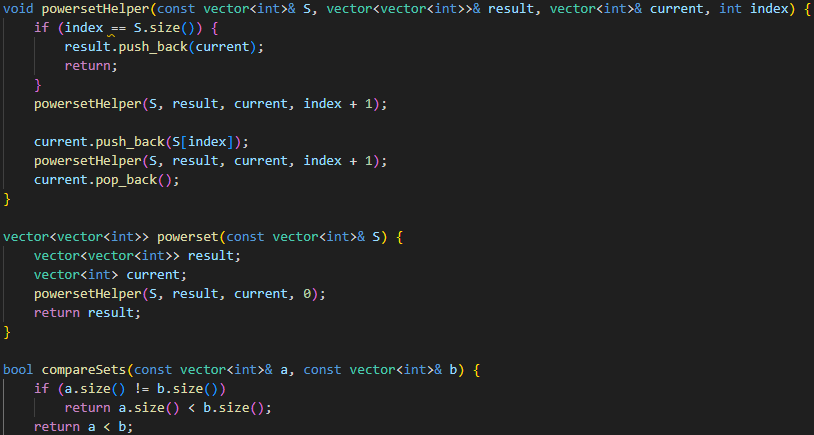


Figure1.3:Subsets.cpp

!!!部分程式碼與解釋為與chatGPT互動之結果

1. 演算法設計與實作

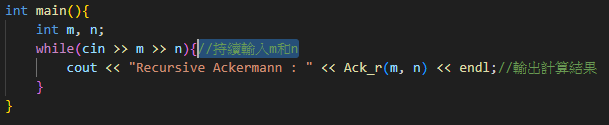


Figure2.1:R\_Ackermann.cpp

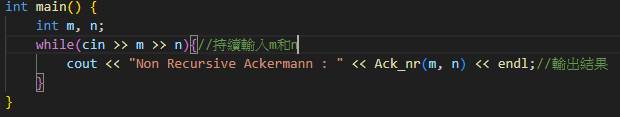


Figure2.2:NR\_Ackermann.cpp

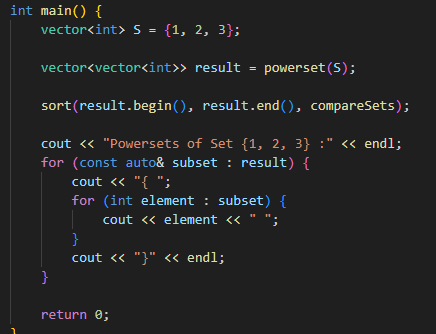


Figure2.3:Subsets.cpp

1. 效能分析

F(n) = O(n)

**時間複雜度**

R\_Ackermann.cpp:

NR\_Ackermann.cpp:

Subsets.cpp:

**我不會算**

**空間複雜度**

R\_Ackermann.cpp:

NR\_Ackermann.cpp:

Subsets.cpp:

**我不會算**

1. 測試與過程

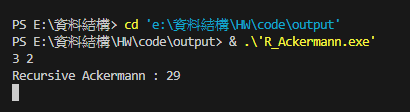


Figure4.1:NR\_Ackermann.cpp

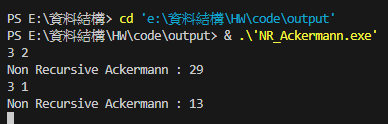


Figure4.2:NR\_Ackermann.cpp

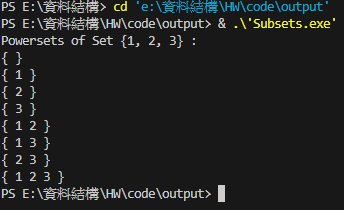


Figure4.3:Subsets.cpp