**Algorithms**

**Programming Assignment #2**

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1. Data structures

主要使用兩個arrays來做為dynamic programming的紀錄。

* + 1. M: table to record maximum planar subset.
    2. chosen\_chord: table to record node k of optimal chord jk.

1. Running time and memory usage of four different input sizes

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Input size | 12 | 1000 | 10000 | 100000 |
| Time (ms) | 0.797 | 12.812 | 1370.21 | 285973 |
| Memory (KB) | 5900 | 13820 | 788092 | 78229440 |

1. Figures to show the growth of running time as a function of input size

(Time unit is in ms)

1. Findings in this programming assignment

可以依圖表見得，對圓周上的任一兩點i, j (一組)，都做一次bottom-up algorithm，time complexity是O(N2)；而Array產生的space complexity也是O(N2)。