2020/06/03 Algorithm Homework

Note: When the exercise asks you to "design an algorithm for…," it always means that "designs an EFFICIENT algorithm for … and ANALYZES your algorithm and write pseudo code". You should keep this in mind when writing solutions.

1. **[CLRS 3rd] Problem 24.3 Arbitrage**

2. **[CLRS 3rd] Exercise 25.1-10**

3. **[CLRS 3rd] Exercise 25.2-1**

4. **[CLRS 3rd] Exercise 25.3-1**

5. **[CLRS 3rd] Problem 25.1 Transitive closure of a dynamic graph**

6. Give an efficient algorithm to count the total number of shortest paths between any pair (u, v) of vertices in a directed graph. (There may be a cycle but definitely no negative-cycle)

7. 給三個整數 m, n, p 設計一個有效率的演算法，算出 $m^n \bmod p$