

Mob boss Dr. VeryEvil get protection money from 4 towns (A,B,C and D). The average daily income of payments mailed by victims (I mean “customers”) from each town is as follows: \$70,000 (A), \$50,000 (B), \$60,000 (C) and \$40,000 (D). Dr. VeryEvil must decide where the “customers” should mail their contributions. Because Dr. VeryEvil also owns LoanShark Inc, he would like to receive the payments as soon as possible so that he can loan them (demand for loan is infinite) to earn 20% annual interest. He is considering setting up operations (by hiring minibosses) in each of the 4 towns to process the contributions. Each miniboss need to be paid \$50,000 per year. The following gives the number of days required by the mail services to send the contributions from one town to another.

1. Town A: to A (2 days); to B (6 days); to C (8 days); to D (8 days)
2. Town B: to A (6 days); to B (2 days); to C (5 days); to D (5 days)
3. Town C: to A (8 days); to B (5 days); to C (2 days); to D (5 days)
4. Town D: to A (8 days); to B (5 days); to C (5 days); to D (2 days)

Formulate an IP that Dr. VeryEvil can use to minimize teh sum of costs due to lost interests and the hiring of minibosses.