Programming Problems

6. A borogove and a snark find themselves in a maze of twisty little passages that connect numerous rooms, one of which is the maze exit. The snark, being a boojum, finds borogoves especially tasty after a long day of causing people to softly and silently vanish away. Unfortunately for the snark (and contrariwise for his prospective snack), borogoves can run twice as fast as snarks and have an uncanny ability of finding the shortest route to the exit. Fortunately for the snark, his preternatural senses tell him precisely where the borogove is at any time, and he knows the maze like the back of his, er, talons. If he can arrive at the exit or in any of the rooms in the borogove's path before the borogove does (strictly before, not at the same time), he can catch it. The borogove is not particularly intelligent, and will always take the shortest path, even if the snark is waiting on it.

Thus, for example, in the following maze, the snark (starting at 'S') will dine in the shaded room, which he reaches in 6 time units, and the borogove (starting at 'B') in 7. The numbers on the connecting passages indicate distances (the numbers inside rooms are just labels). The snark travels at 0.5 units/hour, and the borogove at 1 unit/hour.



Write a program to read in a maze such as the above, and print one of two messages: Snark eats, or Borogove escapes, as appropriate. The input is as follows.

- A positive integer $N \ge 3$ indicating the number of rooms. You may assume that N < 1024. The rooms are assumed to be numbered from 0 to N - 1. Room 0 is always the exit. Initially room 1 contains the borogove and room 2 contains the snark.
- A sequence of edges, each consisting of two room numbers (the order of the room numbers is immaterial) followed by an integer distance.

Assume that whenever the borogove has a choice between passages to take (i.e., all lead to a shortest path), he chooses the one to the room with the lowest number.

For the maze above, a possible input is as follows.

10 2 3 2 4 2 5 4 361 4 1 3 582 566 672 693 591 701 7 9 8 1 8 1 8 9 7