Library

1 Problem Statement

Ryan's brand new library for all your CP needs has just opened. However, his extreme benevolence has made him purchase so many books for the library that the librarians can no longer keep track of the books! Help Ryan write a program to manage the books in the library (he does need it, but do it anyway).
The library's books has N books labelled 0 to $N-1$. The program will run for D days, with each day i having C_i borrowers, each borrower j borrowing book B_j for d_j days. For each attempt to borrow a book, print 1 if the book is in the library and 0 if it is currently borrowed. If more than 1 borrowers try to borrow the same book on the same day, the book will go to the first borrower.

2 Input

The first line of input contains 2 integers, N and D. For each of the D days, there is one integer, C_i, followed by C_i lines with 2 integers each B_j and d_j. A book, when borrowed on day A for d_A days, the book can only be borrowed again starting from the day $A + d_A$.

3 Output

For each borrower, print either 0 or 1, whether the borrower can successfully borrow the book.

4 Limits

$0 < N, D < 100000$; $C_i < 1000$; $B_j < N$; $d_j < D$

5 Constraints

Time limit: 1 second
Memory limit: 8 Mb

6 Sample Input

```
2 4
2
0 3
1 3
1
0 3
1
1 4
2
```

0 2
0 5

7 Sample Output

1
1
0
0
1
0