5843 Furniture Factory

There are m workers in Kim's furniture factory. All workers have an equivalent level of skill and productivity. The factory has taken n orders for next month's work. A manager of the factory made a preliminary plan for all orders as follows: For an order i, the earliest start time s_i is the earliest time at which a worker can start working on the order. The working time w_i is the time required to complete the order. The deadline d_i is the time by which the order must be finished. Certainly, $d_i \geq s_i + w_i$.

An order is dealt with by only one worker at any moment. It is possible that a worker stops his current work and works on another order. A suspended work can be resumed by any worker. All workers begin and stop their work at integral times. So, time is numbered 1, 2, 3, ..., $\max\{d_i\}$, for simplicity.

You, a manager of the factory, are going to make a detailed schedule for next month's production. Given the preliminary plan for the n order requests, write a program to find a schedule such that all orders are finished by their deadline.

Input

Your program is to read from standard input. The input consists of T test cases. The number of test cases T is given in the first line of the input. Each test case starts with a line containing two integers, m and n ($1 \leq m \leq 10$, $1 \leq n \leq 100$), where m is the number of workers and n is the number of orders. In the next n lines of each test case, the i-th line contains three integers $s-i$, w_i, and d_i ($i = 1, 2, \ldots, n$ and $1 \leq s_i < d_i \leq 500$ and $1 \leq w_i \leq d_i - s_i$), which represent the earliest start time, the working time, and the deadline for an order i, respectively.

Output

Your program is to write to standard output. For each test case, if there is no schedule such that all orders are finished by their deadline, print a single line containing '0'. Otherwise, print n lines. The i-th line should contain an odd number of integers "k, a_1, b_1, a_2, b_2, ..., a_k, b_k" which represent a schedule for the i-th order, $i = 1, 2, \ldots, n$, where k means the number of time intervals and (a_j, b_j) means a time interval that a worker will be working on it from a_j to b_j. **Notice that** $a_i < b_i < a_{i+1}$.

The following shows sample input and output for two test cases.

Sample Input

```
2
2 4
2 2 5
1 5 8
4 2 6
3 3 7
1 3
2 4 7
3 1 5
4 2 6
```

Sample Output

```
1 2 4
```

```
3 1 3 4 5 6 8
1 4 6
2 3 4 5 7
0
```