

## 10020 Minimal coverage

Given several segments of line (int the X axis) with coordinates  $[L_i, R_i]$ . You are to choose the minimal amount of them, such they would completely cover the segment  $[0, M]$ .

### Input

The first line is the number of test cases, followed by a blank line.

Each test case in the input should contains an integer  $M$  ( $1 \leq M \leq 5000$ ), followed by pairs " $L_i R_i$ " ( $|L_i|, |R_i| \leq 50000, i \leq 100000$ ), each on a separate line. Each test case of input is terminated by pair '0 0'.

Each test case will be separated by a single line.

### Output

For each test case, in the first line of output your programm should print the minimal number of line segments which can cover segment  $[0, M]$ . In the following lines, the coordinates of segments, sorted by their left end ( $L_i$ ), should be printed in the same format as in the input. Pair '0 0' should not be printed. If  $[0, M]$  can not be covered by given line segments, your programm should print '0' (without quotes).

Print a blank line between the outputs for two consecutive test cases.

### Sample Input

```
2

1
-1 0
-5 -3
2 5
0 0

1
-1 0
0 1
0 0
```

### Sample Output

```
0

1
0 1
```