Problem G. Pandaria

```
Input file:     Standard Input
Output file:    Standard Ouptut
Time limit:     3 seconds
```

Mr. Panda has many gardens. For each garden i, there is exactly one flower with color c_i inside. Between gardens, there are many roads connecting them. Each road has a cost related to it.

Mr.Panda likes to walk inside the gardens and pick up as many same color flowers as possible. But sometimes he doesn't want to spend time walking on the roads with cost too high. Here comes the question, every time Mr.Panda tells you which garden he starts to pick flowers and the maximal cost w he can bear (only roads with cost no more than w can be accessible). Please find out which color of flowers Mr.Panda can pick most. If there are more than one color, find the one with smallest color id.

Input

The first line of the input gives the number of test cases, T. T test cases follow.

Each test case begins with 2 integer N and M. N is the number of gardens, M is the number of roads.

Following line has N integers which represents the color of flowers, the i^{th} number is the color of flower on the i^{th} garden.

Following M lines discribes roads between garden. Each line has 3 integers x, y, w, representing there is a road with cost w between x^{th} and y^{th} garden.

Then comes a line with an integer Q representing the number of queries. The following Q lines each consists of 2 integers: x, w, representing that Mr. Panda starts at x^{th} garden, and the maximal cost he can bear is w. Assume `last` is the previous query answer, let x and w xor with `last`. For the first query of each test case, `last` $= 0$.

Output

For each test case, first output one line containing "`Case #x:`", where `x` is the test case number (starting from `1`).

The following Q lines each consists of a integer which is the color id of the maximum same color flowers Mr. Panda can pick most.

Limits

- $1 \leq T \leq 15$.
- $1 \leq N \leq 10^5$.
- $1 \leq M, Q \leq 2 \times 10^5$.
- $1 \leq x, y, c_i \leq N$.
- $1 \leq w \leq 10^6$.
- For 60% of the test cases, $N \leq 5000$ holds.

Sample input and output

Sample Input	Sample Output
1 5 6 2 1 1 3 2 1 2 2 1 3 4 2 3 7 3 4 5 4 5 6 5 3 3 4 1 1 0 0 5 5 6 11	Case #1: 2 1 3 1

Note

The real queries of sample are `[(1, 1), (2, 2), (4, 4), (5, 8)]`.