

ICPC Southeast USA Regional Contest

Computer Cache

Time limit: 5 seconds

Your computer has a cache consisting of n different addresses, indexed from 1 to n . Each address can contain a single byte. Initially all cache bytes start off with the value zero.

You have m different pieces of data you want to store. Each piece of data is a byte array. The pieces of data may have different lengths, and any particular piece of data may be stored multiple times at different locations.

You are going to do q operations on your computer. There are three types of operations:

- 1 ip Load piece of data i starting at position p in the cache. This overwrites any previously stored value in the cache. It is guaranteed that this is a valid operation (i.e., the data will not go beyond the end of the cache). It is possible for multiple versions of some data to be loaded in multiple positions of the cache at once.
- 2 p Print the byte that is stored in cache address p .
- 3 ilr Increment the l^{th} through r^{th} bytes in the i^{th} piece of data. Since these are bytes, you must increment modulo 256. This does not affect values that are already loaded in the cache. It only affects the piece of data, and future loads of the piece of data.

Input

The first line of input contains three integers n , m and q ($1 \leq n, m, q \leq 5 \cdot 10^5$), where n is the size of the computer's cache, m is the number of pieces of data, and q is the number of operations.

Each of the next m lines describes a piece of data, as a sequence of space separated integers. The first integer on the line, k_i ($1 \leq k_i, \sum k_i \leq 5 \cdot 10^5$), indicates the number of integers to follow. Each of the next k_i integers x ($0 \leq x \leq 255$) are the contents of the piece of data.

Each of the next q lines will have two, three, or four space-separated integers representing an operation, in order, as described above. Either:

$1\ i\ p$ or $2\ p$ or $3\ i\ l\ r$

With ($1 \leq i \leq m$), ($1 \leq p \leq n$), and ($1 \leq l \leq r \leq k_i$). There is guaranteed to be at least one 2 operation.



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Output

For each 2 operation, output the integer value of cache location p , one per line.

Sample Input**Sample Output**

5 2 10	0
3 255 0 15	255
4 1 2 1 3	1
2 1	255
1 2 2	0
1 1 1	3
2 1	
2 4	
3 1 1 2	
2 1	
1 1 2	
2 2	
2 5	