Message queue is the basic fundamental of windows system. For each process, the system maintains a message queue. If something happens to this process, such as mouse click, text change, the system will add a message to the queue. Meanwhile, the process will do a loop for getting message from the queue according to the priority number if it is not empty. Note that the smaller priority number means the higher priority. In this problem, you are asked to simulate the message queue for putting messages to and getting message from the message queue.

Input:

Each line is a command, only "GET" or "PUT", which means getting message or putting message. If the command is "PUT", there're one string means the message name and two integers mean the parameter and the priority number followed by. Therefore, you should have a class Message:

```
class Message
{
    private:
        string name;
        int parameter;
        int priority_number;
    public:
        bool operator<(const Message &m) const;
        ….
};
```

Moreover, the queue is a priority queue of Message.

```
#include <queue>
using namespace std;
…
priority_queue<Message> msg_queue;
```

Priority queues are a type of container adaptors, specifically designed such that its first element is always the greatest of the elements it contains. Therefore the element type have to define operator< for priority_queue to compare. Only the one at the top in the priority queue can be retrieved (top() and pop()).

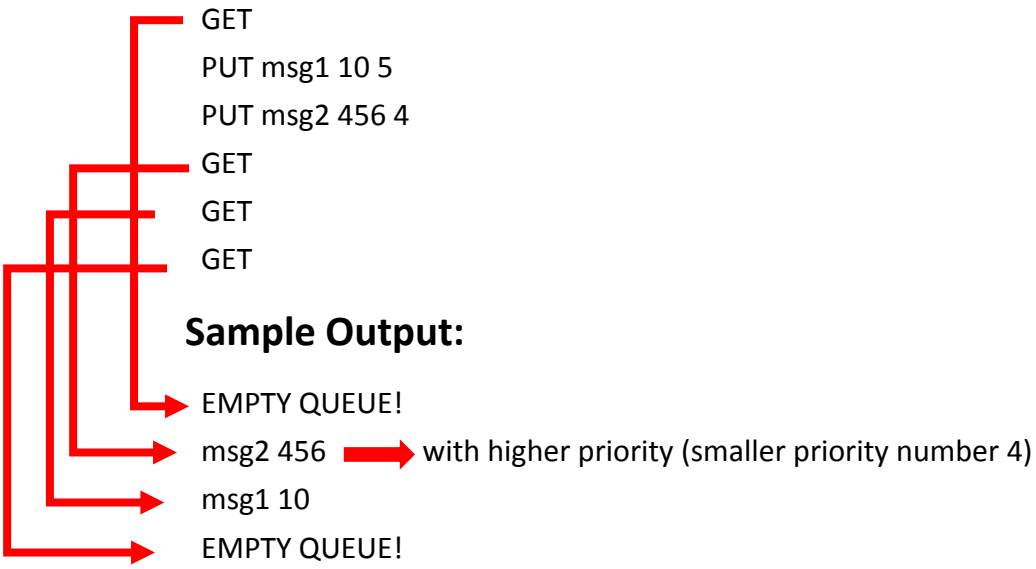
Note that one message can appear twice or more and if two messages have the same priority, the one comes first will be processed first.(i.e. FIFO(first in first out) for the same priority.) So, be care with operator<.

Process the input until the end-of-file.

Output:

For each “GET” command, output the command getting the message of the highest priority (smallest priority number) from the message queue with the name and the parameter in one line. (hint: just follow priority_queue, top() and pop()) If there’s no message in the queue, output “EMPTY QUEUE!”
There’s no output for “PUT” command.

Sample Input:



Sample Output:

More samples are given in files.