#include<bits/stdc++.h>

using namespace std;

class node{

private:

int data;

node \*next;

public:

void add(int value);

int pop();

int peek();

};

node \*head = NULL;

node\* tail = NULL;

int size = 0;

void node::add(int value){

//use addlast funct as it use O(1)

node\* temp = new node();

temp->data = value;

temp->next = NULL;

if(head==NULL){

head = temp;

tail = temp;

}

else{

tail->next = temp;

tail = temp;

}

size++;

}

int node::pop(){

// using removeFirst funct as it use O(1)

if(size==0){

cout<<"Queue underflow"<<endl;

return -1;

}

else if(size==1){

int temp = head->data;

head=NULL;

tail=NULL;

size--;

return temp;

// delete temp;

}

else{

int temp = head->data;

head = head->next;

// delete temp;

size--;

return temp;

}

}

int node::peek(){

if(head==NULL){

cout<<"Queue underflow"<<endl;

return -1;

}

else{

return head->data;

}

}

int main(){

string s;

cin>>s;

node list;

while(s!="quit"){

int num;

if(s=="peek"){

if(list.peek()!=-1){

cout<<list.peek()<<endl;

}

}

else if(s=="size"){

cout<<size<<endl;

}

else if(s=="remove"){

int ans = list.pop();

if(ans!=-1){

cout<<ans<<endl;

}

}

else if(s=="add"){

cin>>num;

list.add(num);

}

cin>>s;

}

}