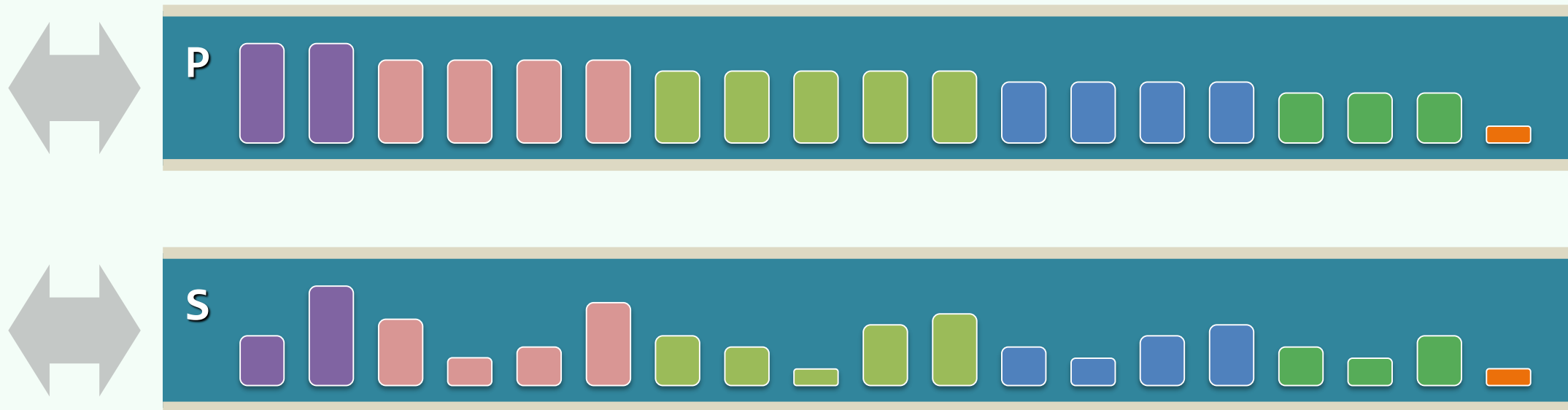θ4-K

栈与队列

Steap + Queap

A hero is born among a hundred, a wise man is found among a thousand, but an accomplished one might not be found even among a hundred thousand men.

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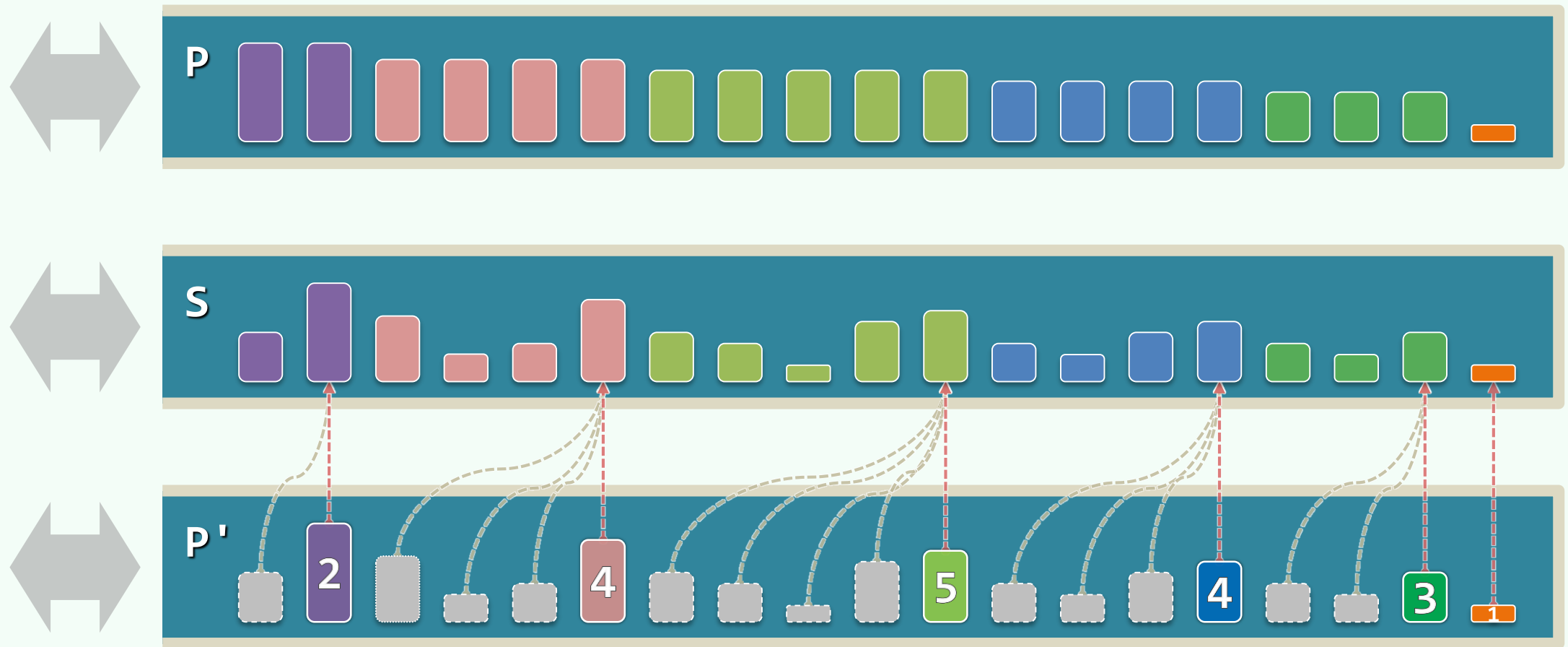# Steap = Stack + Heap = push + pop + getMax

❖ **P中每个元素，都是S中对应后缀里的最大者**: `Steap::getMax() { return P.top(); }`

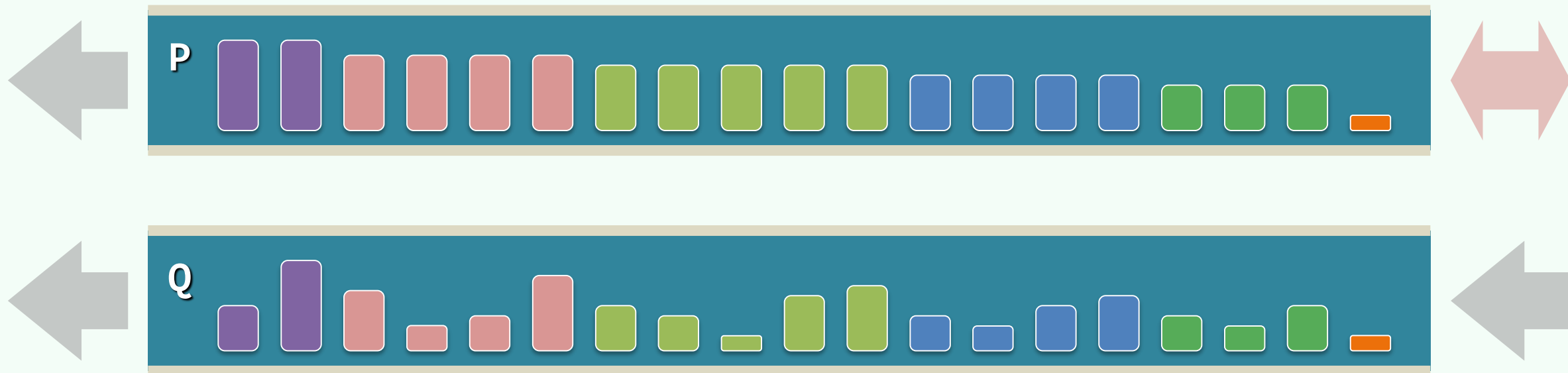❖ `Steap::pop()    { P.pop(); return S.pop(); }` //O(1)

❖ `Steap::push(e) { P.push( max( e, P.top() ) ); S.push(e); }` //O(1)

Steap = Stack + Heap = push + pop + getMax

Queap = Queue + Heap = enqueue + dequeue + getMax

❖ `Queap::dequeue() { P.dequeue(); return Q.dequeue(); }` *//O(1)*

❖ `Queap::enqueue(e) {`

```
    Q.enqueue(e); P.enqueue(e);
    for ( x = P.rear(); x && (x->key <= e); x = x->pred ) //最坏情况O(n)
        x->key = e;
}
```

Queap = Queue + Heap = enqueue + dequeue + getMax