

03 - XA

列表

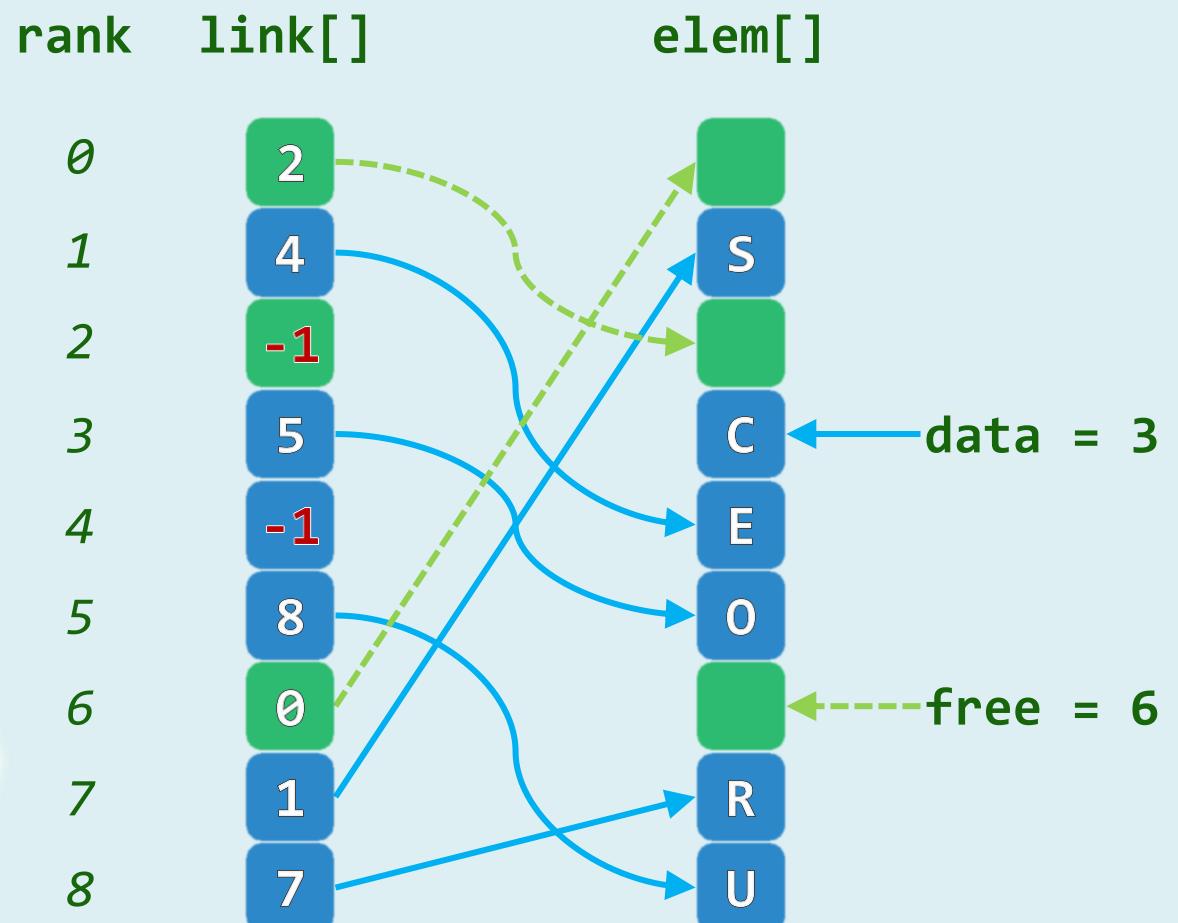
游标实现

邓俊辉

deng@tsinghua.edu.cn

动机与构思

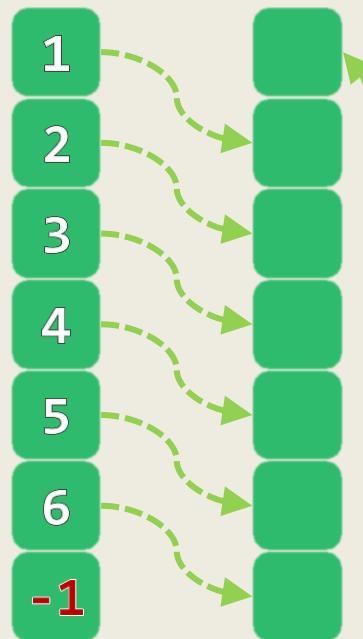
- ❖ 某些语言不支持指针类型，即便支持频繁的动态空间分配也影响总体效率
- ❖ 此时，又当如何实现列表结构呢？
- ❖ 利用线性数组，以游标方式模拟列表
 - elem[]：对外可见的数据项
 - link[]：数据项之间的引用
- ❖ 维护逻辑上互补的列表data和free
- ❖ 在插入或删除元素时，应如何调整？



实例 (1/4)

init(7)

link[] elem[]



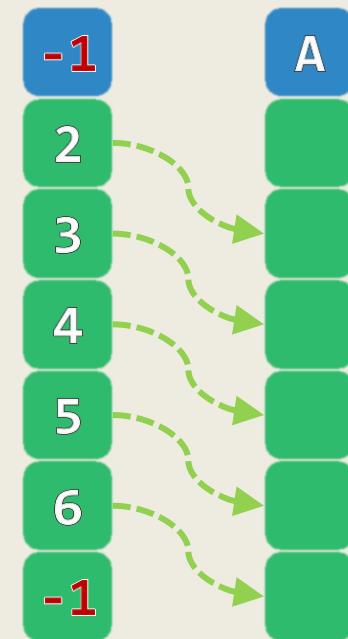
data = -1
free = 0

rank

0
1
2
3
4
5
6

insert('A')

link[] elem[]

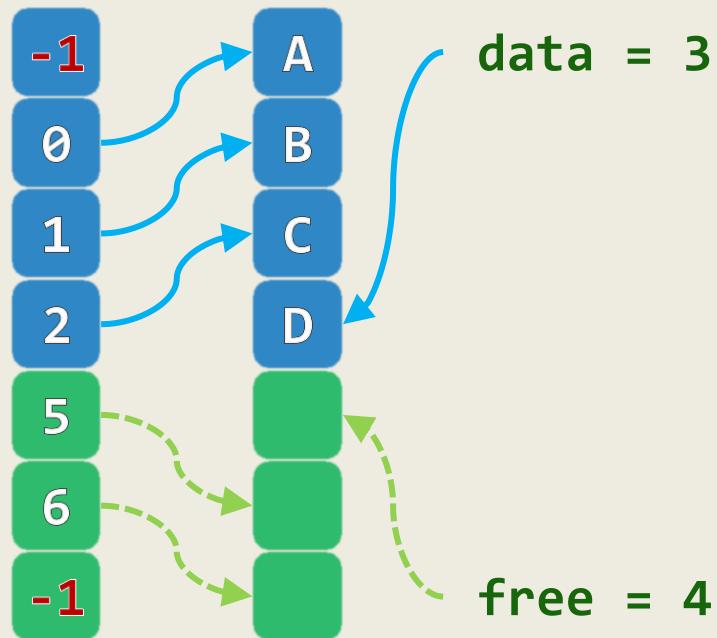


data = 0
free = 1

实例 (2/4)

`insert('C')`
`insert('D')`

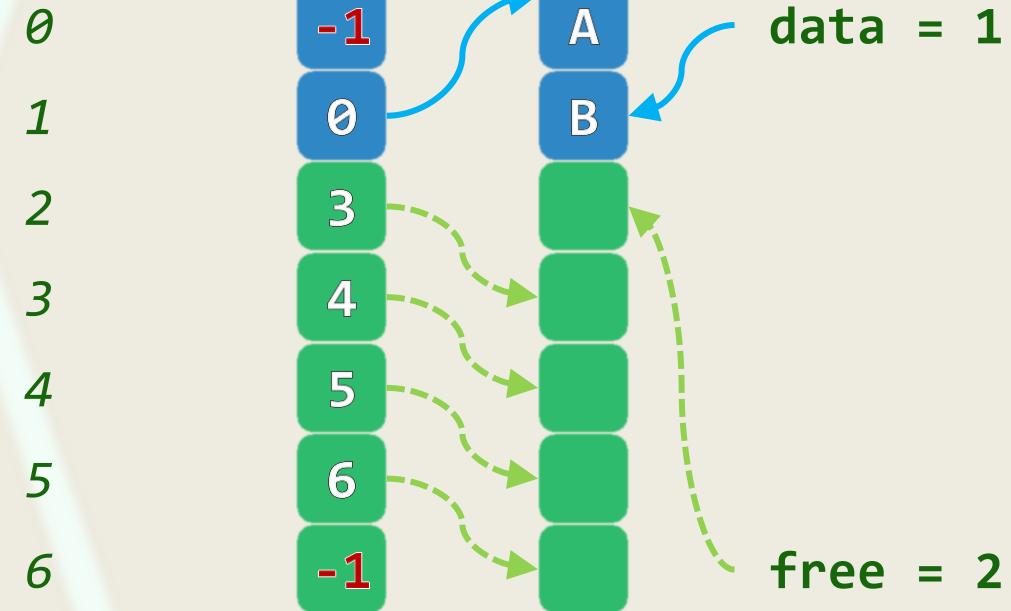
`link[]` `elem[]`



`insert('B')`

`link[]` `elem[]`

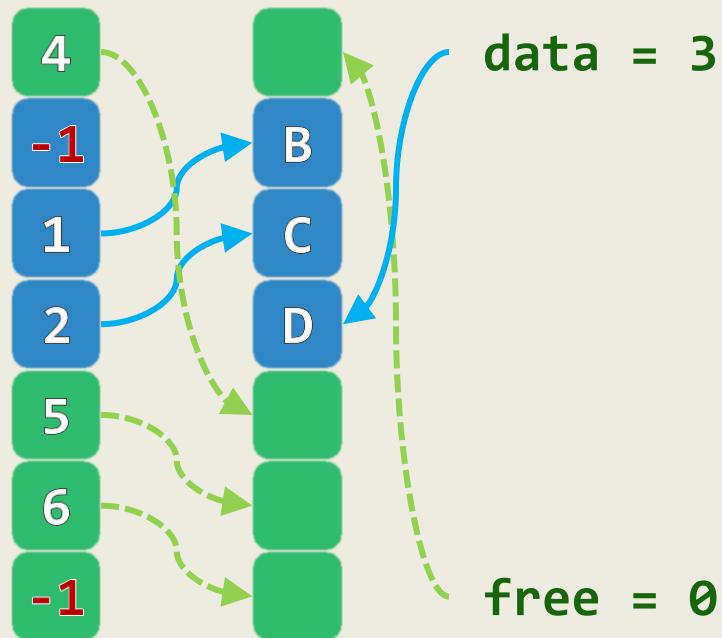
`rank`



实例 (3/4)

remove('A')

link[] elem[]

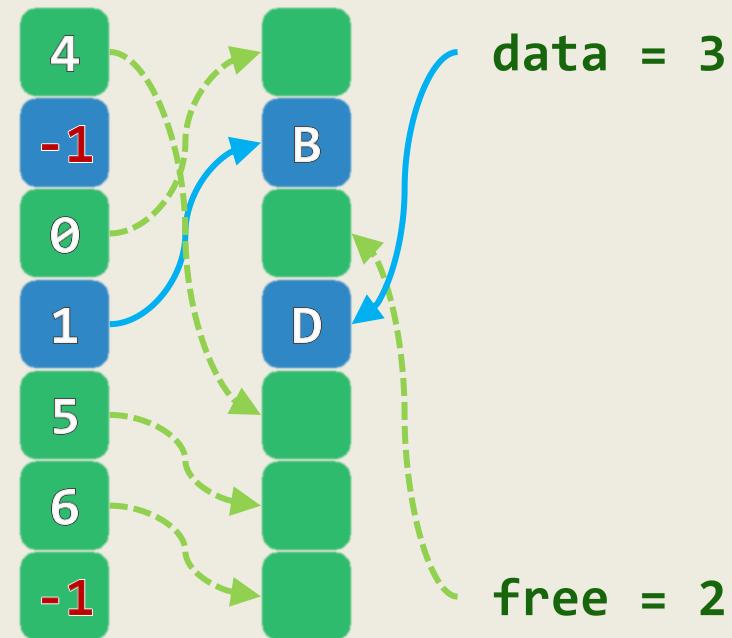


remove('C')

link[] elem[]

rank

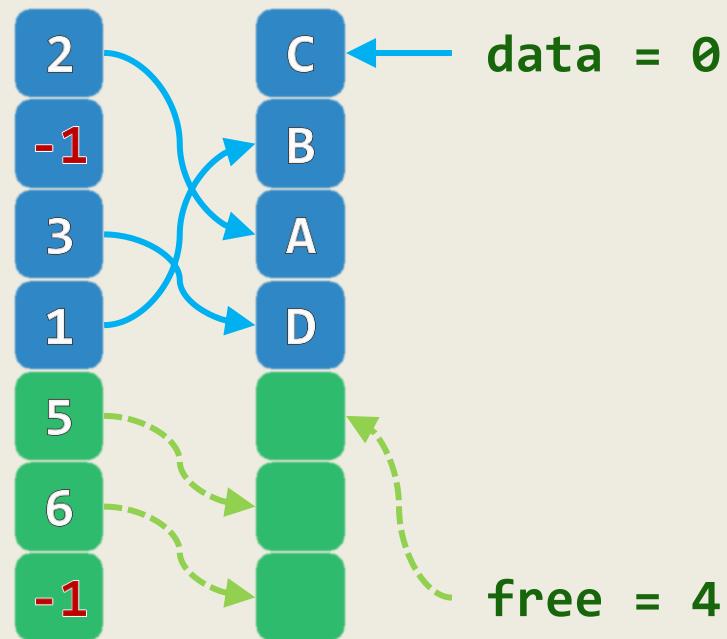
0
1
2
3
4
5
6



实例 (4/4)

`insert('C')`

`link[] elem[]`



`insert('A')`

`link[] elem[]`

`rank`

0
1
2
3
4
5
6

