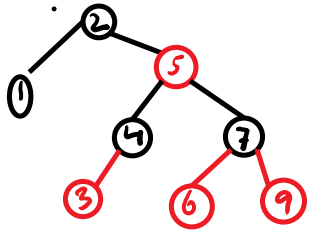

Habib University
shaping futures

CS 201 Data Structure II (L2 / L5)

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Class Norms:

L2

Mark your attendance using biometric machines

- Chit-chat during the lectures – Don't
- Receiving calls – leave the class
- Ask questions – Do's
- Sleeping in the class – twice in a month
- Coming late – Sometimes
- Leaving the class and coming back – without causing disturbance
- Request for early leaves – 15 minutes , once in a month
- Working on laptop – for taking notes
- Checking phones – 3 to 5 times
- …

Class Norms:

L5

Mark your attendance using biometric machines

- Chit-chat during the lectures – Don't
- Receiving calls – leave the class – Do's
- Ask questions – Do's
- Sleeping in the class – Do's
- Coming late – Do's
- Leaving the class and coming back – non disruptive manner
- Request for early leaves – not often, not more than 15 minutes
- Working on laptop – only taking for notes, not to solve assignment
- and checking phones – 2 to 4 times
- …

3.2 DLList : A double linked list

- A linked list points nodes forward and backward both
- Circular
- We can achieve:
  - adding/removing elements at the head in O(1)
  - Adding/removing elements at the end in O(1)
  - Inserting/removing elements at i^{th} position in O(1) [ignoring the cost to reach that element]
  - We can achieve get(i) an element in O(1+min(i,n-i)) – and so remove(i) and add(i,x)

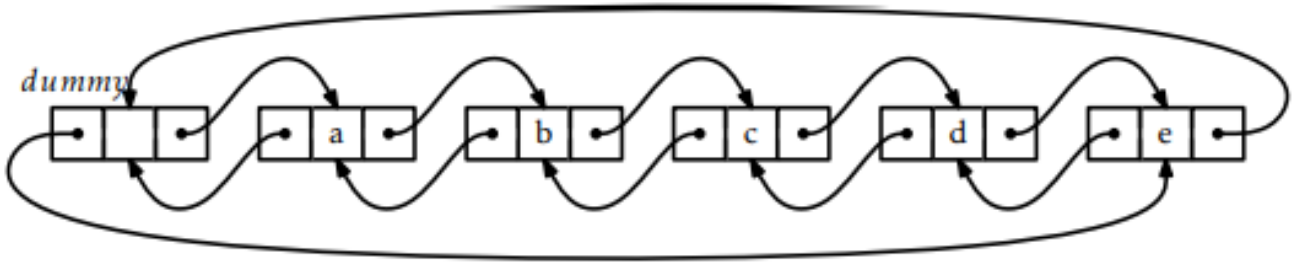

Figure 3.2: A DLList containing a,b,c,d,e.

Skip List

- A sorted linked list
- get(i), set(i,x), add(i,x), remove(i) in log(n)
- Create multiple layers – to skip some nodes

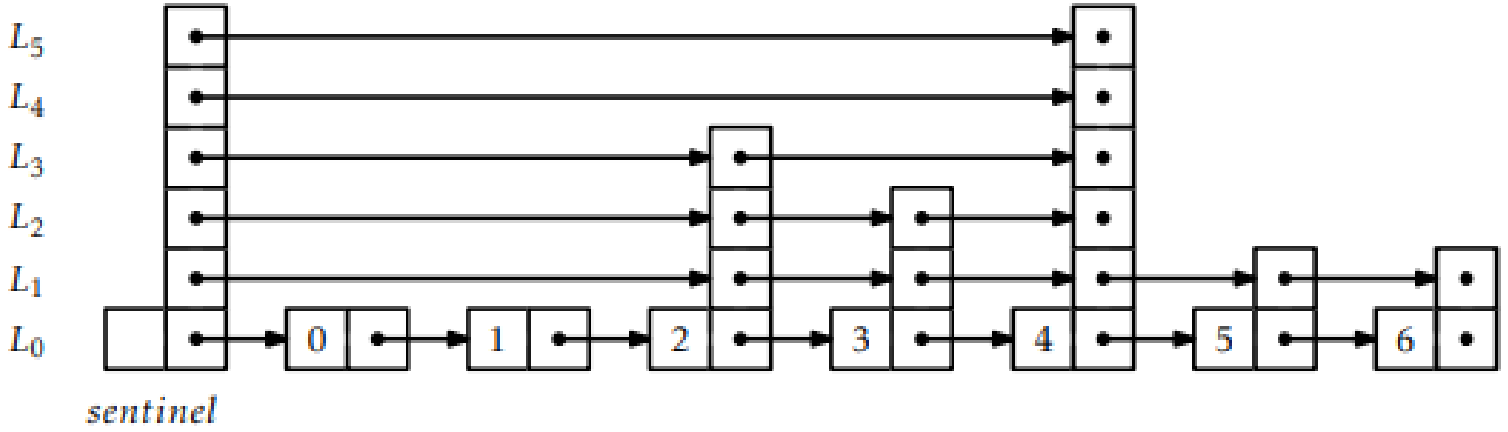

Figure 4.1: A skiplist containing seven elements.