

Subject:

* hashing : extending array to do map/dictionary

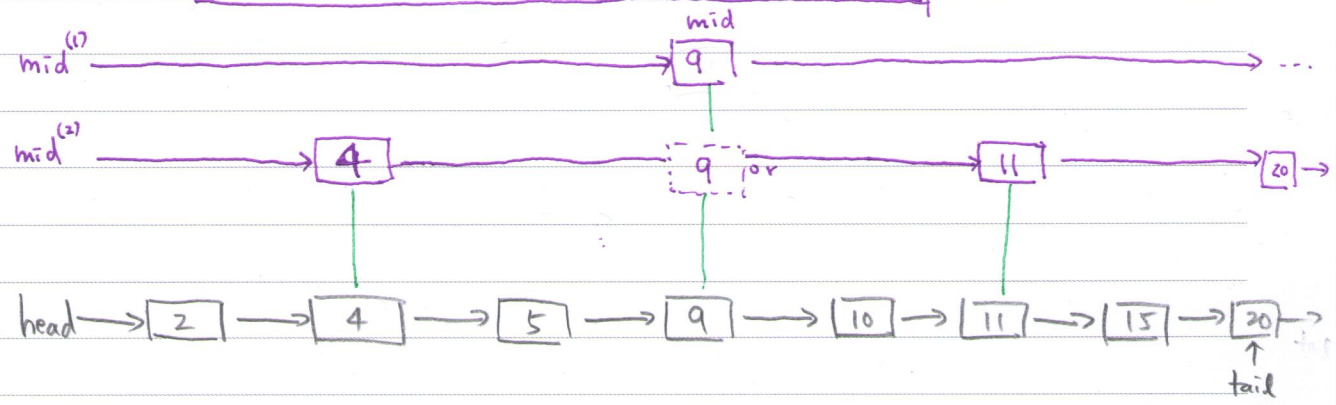
* how to extend list to do map/dictionary

- unordered: fast insertion, slow search
- ordered: slow insertion, slow search

* why slow search? sequential

can we do binary search on ordered linked lists?

YES if mid node can be found quickly



* skip list = list + ... + list of quad + list of mid

Search for 10

- * (head, tail) = (2, 20) * mid = 9
- * (head, tail) = (9, 20) * mid = 11
- * (head, tail) = (9, 11) * mid = 10 found!

Search for 14

- (2, 20)
- (9, 20)
- (11, 20)
- (11, 15) fail!

* but how to insert fast? "cannot work if too strict"
 probabilistic: a node "survives" to the upper list
 w/ prob 1/2