Perfect Skip List
Skip List

• Extension of the ideas of a sorted list

• Related to ideas behind binary search and binary search trees

• Allows searching in $O(\log_2)$
Perfect Skip List
The number of next references in each node is \( \text{ceil}(\log_2 N) \)
Perfect Skip List Search

- Start at top list and repeat the following until the search value is found or not found

- If at bottom list and there is no next item or at bottom list and search value < item in next node then not found

- If search value == item in next node then found

- If search value < item in next node or there is no next node then move down one list

- If search value > item in next node move to next node
Perfect Skip List
Search for 30
Perfect Skip List
Search for 30

-∞ -> 10 -> 20 -> 30 -> 40 -> 50 -> 60
Perfect Skip List
Search for 30
Perfect Skip List
Search for 60
Perfect Skip List
Search for 60
Perfect Skip List
Search for 35
Perfect Skip List
Search for 35
Perfect Skip List
Search for 35
Perfect Skip List
Printing

40
20, 40, 60
10, 20, 30, 40, 50, 60