B+-Tree Example

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Speed in B+ Tree Index

- In processing a query, we traverse a path from the root to a leaf node. If there are K search key values in the file, this path is no longer than $\log_{n+1} K$, where n is the number of links possible in any given node.

- This means that the path is not long, even in large files. For a 4K byte disk block with a search-key size of 12 bytes and a disk pointer of 8 bytes, n is around 250. If $n = 100$, a look-up of 1 million search-key values may take $\log_{250}(1,000,000) = 4$ nodes to be accessed. Since root is in usually in the buffer, so typically it takes only 3 or fewer disk reads.