B-Tree

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Properties of B-Tree

B-trees were invented by Rudolf Bayer and Edward M. McCreight at Boeing Research Labs to efficiently manage index pages for large random-access files.

According to Knuth's definition, a B-tree of order m is a tree which satisfies the following properties:

1. Every node has at most m children.

2. Every node, except for the root and the leaves, has at least $\lceil m/2 \rceil$ children.

3. The root node has at least two children unless it is a leaf.

4. All leaves appear on the same level.

5. A non-leaf node with k children contains $k-1$ keys.