

Data Structure

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CHAPTER-3

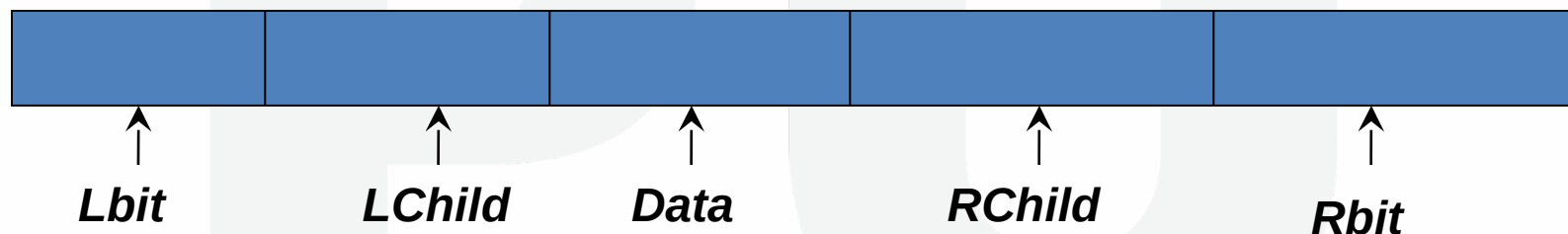
Threaded storage representation





Threaded Storage Representation

- In Linked representation method, there are more no. of NULL links than actual pointers. So all the null links in linked storage representation can be replaced by thread pointers.
- Binary tree is threaded according to particular traversal order.
- Storage representation for thread node.



There are two types of pointers: Thread Pointer and Normal Pointer.

LBIT(P) = 1, if Lchild(p) is a normal pointer
= 0, if Lchild(p) is a thread pointer

RBIT(P) = 1, if Rchild(p) is a normal pointer
= 0, if Rchild(p) is a thread pointer



Threaded Storage Representation

- If $Rchild(x)$ is NULL then replace NULL link by a pointer to the node which is the inorder successor.
- If $Lchild(x)$ is NULL then replace NULL link by a pointer to the node which is the inorder predecessor.





Threaded Storage Representation

For constructing the Threaded Storage Tree follow the following steps:

- When tree is empty then use only HEAD node. It is known as an empty threaded storage representation.
- Form a HEAD node and connect the Rchild with the HEAD node itself.
- Decide the particular traversal order of the given tree and find the predecessor and successor of each node.
- The predecessor of the 1st node and the successor of the last node will be pointing to HEAD node.
- The root node of a given tree is pointed by the LChild of the HEAD node.
- If the left link of any node is NULL then it can be threaded with the address of predecessor of that node for a particular traversal order.
- If the right link of any node is NULL then it can be threaded with the address of successor of that node for a particular traversal order.



Threaded Storage Representation

