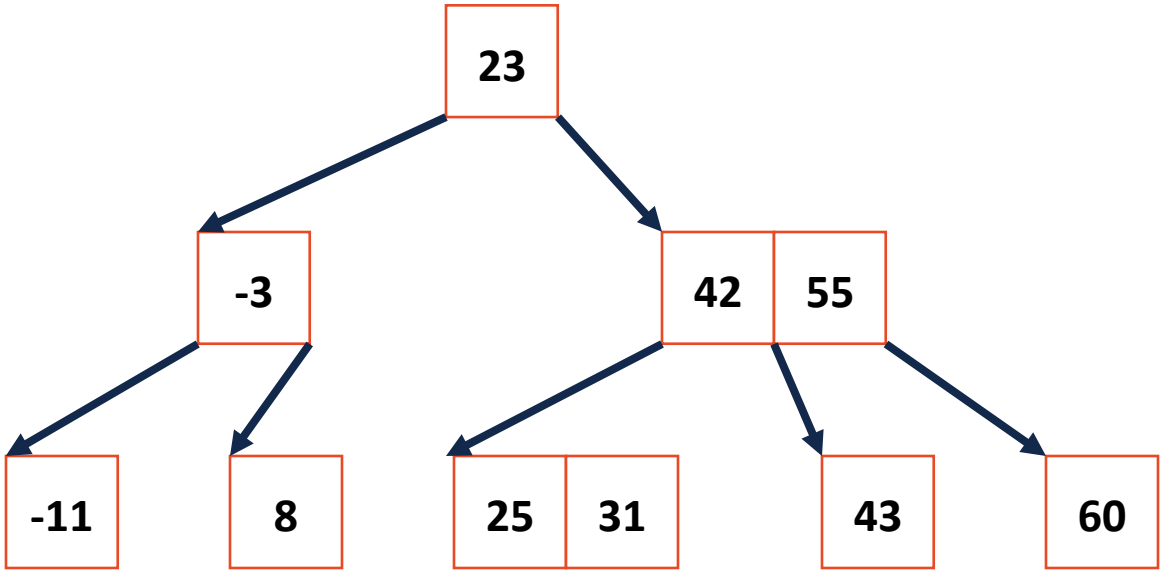
CS 400

B-Tree Search

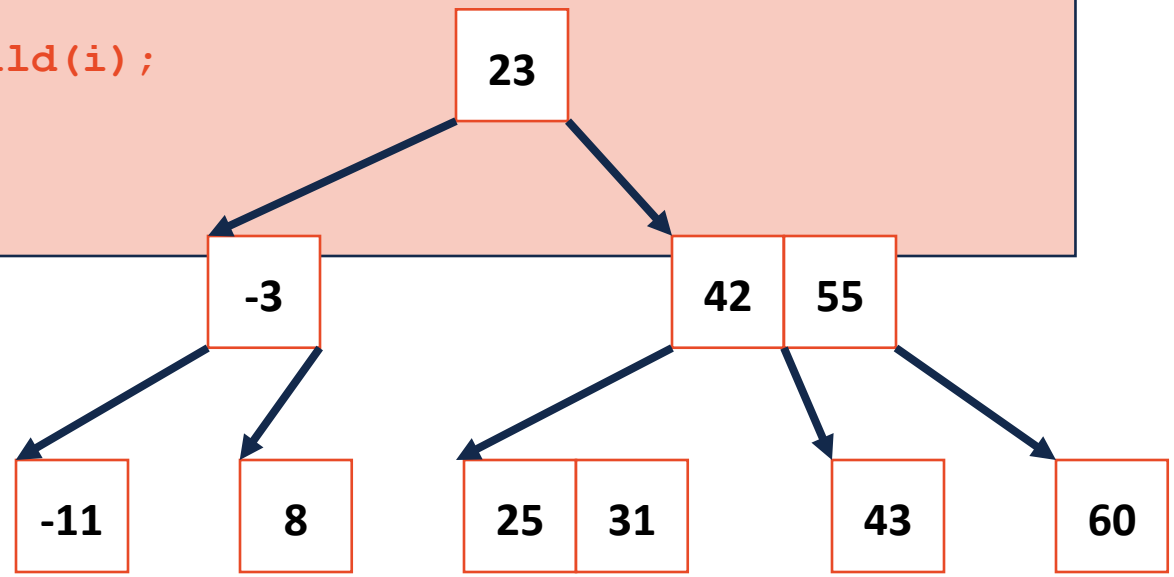
ID: 08-03

BTree Search



BTree Search

```
 1  bool Btree::_exists(BTreeNode & node, const K & key) {
 2
 3    unsigned i;
 4    for ( i = 0; i < node.keys_ct_ && key < node.keys_[i]; i++) { }
 5
 6    if ( i < node.keys_ct_ && key == node.keys_[i] ) {
 7      return true;
 8    }
 9
10    if ( node.isLeaf() ) {
11      return false;
12    } else {
13      BTreeNode nextChild = node._fetchChild(i);
14      return _exists(nextChild, key);
15    }
16  }
```



BTree Analysis

The height of the BTree determines maximum number of seeks possible in search data.

…and the height of the structure is: log_n(n).

Therefore: The number of seeks is no more than log_m(n).