

LAB 5

1BM/SCS077

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```
void Tree::insert(int k) {  
    if (root == NULL) {  
        root = new TreeNode(true);  
        root->keys[0] = k;  
        root->n = 1;  
    } else {  
        if (root->n == 3) {  
            TreeNode *s = new TreeNode(false);  
            s->child[0] = root;  
            s->splitChild(0, root);  
            int i = 0;  
            if (s->keys[0] < k) i++;  
            s->child[i] -> insertNonFull(k);  
            root = s;  
        } else {  
            root->insertNonFull(k);  
        }  
    }  
}
```

```
void TreeNode::remove(int k) {  
    int idx = findKey(k);  
    if (idx < n && keys[idx] == k) {  
        if (leaf) removeFromLeaf(idx);  
    }
```

```
else removeFromNonLeaf(idx);  
else {  
    if(leaf) {  
        cout << "The key doesn't exist \n";  
        return;  
    }  
    bool flag = (idx == n)?true : false;  
    if(child[idx] -> n < 2) fill(idx);  
    if(flag && idx > n) child[idx - 1] -> remove(k);  
    else child[idx] -> remove(k);  
}  
return;  
}
```