Worksheet 30

Group 23 Members

Alexander Miranda
Benjamin Tate
Shuiqiang Lin
Amy Weller
Anthony Tong

Can you characterize what elements are being held on the stack? How large can the stack grow?

Since the stack can only contain a linear path (it can never contain 2 children of the same node), we would say that the stack can only grow as large as the height of the tree. By height we mean the number of nodes from root to leaf, inclusive.

```
void BSTIteratorInit (struct BSTree *tree, struct BSTIterator *itr) {
        itr->tree = tree;
        itr->stk = dynArrayInit(10);
}

int BSTIteratorHasNext (struct BSTIterator * itr) {
        If (itr->stk->size > 0) {
                return 1;
        } else {
                return 0;
        }
}

TYPE BSTIteratorNext (struct BSTIterator *itr) {
        TYPE val = dynArrayPeek(itr->stk);
        dynArrayPop(itr->stk);
        return val;
}
```