

```

1  /* BTree.h */
2  #ifndef _BTREE_H
3  #define _BTREE_H
4  #include "OrderVector.h"
5
6  //0--代表比较相同, 1--代表dataAddr<keyAddr, -1--代表dataAddr>keyAddr
7  typedef int BTreeCmp(const void *keyAddr, const void *dataAddr);
8  typedef void BTreeFree(void *);
9  typedef void BTreeTraverseOp(void *, void *);
10
11 typedef struct bt_node
12 {
13     struct bt_node *parent;
14     VECTOR keyVector; // 关键词向量
15     VECTOR childVector; // 孩子向量 (其长度总比keyVector多一)
16 } BTREENODE;
17
18 typedef struct
19 {
20     BTREENODE *root;
21     BTREENODE *hot; // "\命中"节点的父节点
22     int size; // 存放关键词总数
23     int order; // B-树的阶次, 至少为3, 创建时指定, 一般不能修改
24     int keySize; // 一个关键词所需字节数
25     BTreeCmp *cmpFn;
26     BTreeFree *freeFn;
27 } BTREE;
28
29 // BTree初始化
30 void BTreeNew(BTREE *bTree, int order, int keySize, BTreeCmp *cmpFn, BTreeFree
31 *freeFn);
32 // BTree销毁
33 void BTreeDispose(BTREE *bTree);
34 // BTree判空
35 int BTreeEmpty(BTREE *bTree);
36 // BTree规模
37 int BTreeSize(BTREE *bTree);
38 // BTree阶次
39 int BTreeOrder(BTREE *bTree);
40 // BTree中查找关键词
41 BTREENODE *BTreeSearch(BTREE *bTree, const void *e);
42 // BTree中插入关键词
43 int BTreeInsert(BTREE *bTree, const void *e);
44 // BTree中删除关键词
45 int BTreeRemove(BTREE *bTree, void *e);
46 // BTree层序遍历
47 void BTreeTravLevel(BTREE *bTree, BTreeTraverseOp *traverseOpFn, void *outData);
48 #endif

```