ZDataStructures

Generated by Doxygen 1.9.5

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Chapter 3

Data Structure Documentation

3.1 ZSinglyLinkedList Struct Reference

Data Fields

- struct ZSinglyLinkedListNode * **head**

The documentation for this struct was generated from the following file:

- src/ZDataStructures.h

3.2 ZSinglyLinkedListNode Struct Reference

Data Fields

- void * **data**
- struct ZSinglyLinkedListNode * **next**

The documentation for this struct was generated from the following file:

- src/ZDataStructures.h

Chapter 4

File Documentation

4.1 ZDataStructures.h

```
1 #ifndef Z_DATA_STRUCTURES_H_INCLUDED
2 #define Z_DATA_STRUCTURES_H_INCLUDED
3
4 #include <stdio.h> // printf
5 #include <stdlib.h> // malloc, free
6 #include <stdint.h> // int32_t
7 #include <string.h> // strnlen
8
9 /*
10 * Singly Linked List
11 */
12 typedef struct ZSinglyLinkedList {
13     struct ZSinglyLinkedListNode *head;
14 } ZSinglyLinkedList;
15
16 typedef struct ZSinglyLinkedListNode {
17     void *data;
18     struct ZSinglyLinkedListNode *next;
19 } ZSinglyLinkedListNode;
20
21 // Allocation and free
22 ZSinglyLinkedList *ZSinglyLinkedList_create();
23 void ZSinglyLinkedList_free(ZSinglyLinkedList *list);
24
25 // Generic ZSinglyLinkedList functions
26 void ZSinglyLinkedList_pushFront(ZSinglyLinkedList *list, void* data);
27 void ZSinglyLinkedList_pushBack(ZSinglyLinkedList *list, void* data);
28
29 void ZSinglyLinkedList_delete(ZSinglyLinkedList *list, size_t position);
30 void ZSinglyLinkedList_deleteFront(ZSinglyLinkedList *list);
31 void ZSinglyLinkedList_deleteBack(ZSinglyLinkedList *list);
32
33 void *ZSinglyLinkedList_showValue(ZSinglyLinkedList *list, size_t position);
34 void *ZSinglyLinkedList_showValueFront(ZSinglyLinkedList *list);
35 void *ZSinglyLinkedList_showValueBack(ZSinglyLinkedList *list);
36
37 // Search functions
38 void ZSinglyLinkedList_linearSearch(ZSinglyLinkedList *list, void* data);
39
40 // Sort functions
41 void ZSinglyLinkedList_BubbleSort(ZSinglyLinkedList *list);
42
43 // Debug singly linked list functions
44 void ZSinglyLinkedList_dumpMemoryPtr(ZSinglyLinkedList *list, int32_t dataPerLine);
45 void ZSinglyLinkedList_dumpMemoryFormat(ZSinglyLinkedList *list, int32_t dataPerLine, char *format);
46
47 /*
48 * Circular Linked List
49 */
50
51 /*
52 * Doubly Linked List
53 */
54
55 /*
56 * Circular Doubly Linked List
57 */
58
```

```
59 /*
60 * Stack
61 */
62
63 /*
64 * Queue
65 */
66
67 #endif // Z_DATA_STRUCTURES_H_INCLUDED
```

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