List

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Contents

Chapter 1

List

List is a C library that implements chained list.

The goal is not just to provide an obivous implementation of chained list. It is to show several development tricks that can be used in different context.

- **Genericity:** The list can be used over any kind of type.
- **Trace:** You can trace easily all the code without impact on release code.
- **Test:** The right manner to write unit tests in C.
- **Build:** Build a release or a debug version.

Examples

Using the library

```
List *list = make_list();
List *el = make_element_list(2);
list = insert_element_list_head(list, el);
list = free_list(list);
```

This example shows how to create a list and an element and how to add the element to the list. Then free the list.

Using trace

```
#define OUT stdout
List* free_list(List *list){
  TRACE_DEBUG(OUT);
  if (list == NULL) return NULL;
  List* list_head = list;
  while(list_head != NULL){
    TRACE_DEBUG_MSG(OUT,"while");
    list = list_head->next;
    free_element_list(list_head);
    list_head = list;
  }
  return NULL;
}
```

This example show how `free_list` is implemented using `TRACE` macros.

Installation

Build the library, install it on your OS then Include the header in your C code:

```
include <list.h>
```

License

List is made under the terms of the MIT license.

Chapter 2

Class Index

2.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

Chapter 3

File Index

3.1 File List

Here is a list of all documented files with brief descriptions:

Chapter 4

Class Documentation

4.1 _List Struct Reference

Type the represents both a chained list and an element of the list.

`#include <list.h>`

Public Attributes

- Value **value**
- struct _List * next

  value of the element

4.1.1 Detailed Description

Type the represents both a chained list and an element of the list.

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

- list.h

Chapter 5

File Documentation

5.1 list.h File Reference

File containing chained list header.

```
#include <stdio.h>
#include "value.h"
```

Classes

- struct _List

  Type the represents both a chained list and an element of the list.

Typedefs

- typedef struct _List List

  Type the represents both a chained list and an element of the list.

Functions

- List * make_element_list (Value value)

  Create an element of a list from a value.
- List * **free_element_list** (List *element)
- List * **make_list** ()
- List * **free_list** (List *list)
- List * **insert_element_list_head** (List *list, List *element)
- List * **insert_element_list_end** (List *list, List *element)
- List * **extract_element_list** (List *list, List *element)
- int **length_list** (List *list)
- void **print_element** (FILE *out, List *element)
- void **print_list** (FILE *out, List *list)

5.1.1 Detailed Description

File containing chained list header.

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