Exercises — Int linked list

I MUST NOT FEAR. FEAR IS THE MIND-KILLER.

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Contents

File Tree

```
int_linked_list/
├─ list.h
├─ list_basic.c  (to submit)
```

Authorized functions : You are only allowed to use the following functions

- printf(3)
- putchar(3)
- puts(3)
- malloc(3)
- free(3)

Authorized headers : You are only allowed to use the functions defined in the following headers

- err.h
- errno.h
- assert.h
- stddef.h

Compilation : Your code must compile with the following flags

- -std=c99 -pedantic -Werror -Wall -Wextra -Wvla

Main function : None

1 Goal

A header (`list.h`) containing all the required functions is provided on the intranet.

In this exercise, you will have to implement a linked list, along with its manipulation operations.

- An empty list is represented by a `NULL` pointer.

2 list_prepend

```c
struct list *list_prepend(struct list *list, int value);
```

This function must insert a node containing `value` at the beginning of the list. The function must return the new list, or `NULL` if an error occured.

3 list_length

```
size_t list_length(struct list *list);
```

This function returns the length of the list.

4 list_print

```
void list_print(struct list *list);
```

This function displays the elements of the list, separated by a space except the first one, ended by a newline.

If the list is empty, nothing is displayed.

5 list_destroy

```
void list_destroy(struct list *list);
```

This function releases all the memory used by `list`.

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