Exercises — Zigzag me

version #

IT IS MY JOB TO MAKE SURE YOU DO YOURS.

Copyright

This document is for internal use at EPITA ([website](#)) only.

Copyright © 2021-2022 Assistants `<assistants@tickets.assistants.epita.fr>`

Contents

1 Zigzag me

Files to submit:

- zigzag_matrix/zigzag.c

Provided files:

- zigzag_matrix/zigzag-example.c

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

- malloc(3)
- calloc(3)

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

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

1.1 Goal

A Zigzag matrix is a special type of square matrix, where the numbers increase as you zigzag from the upper-left corner to the lower-right corner.
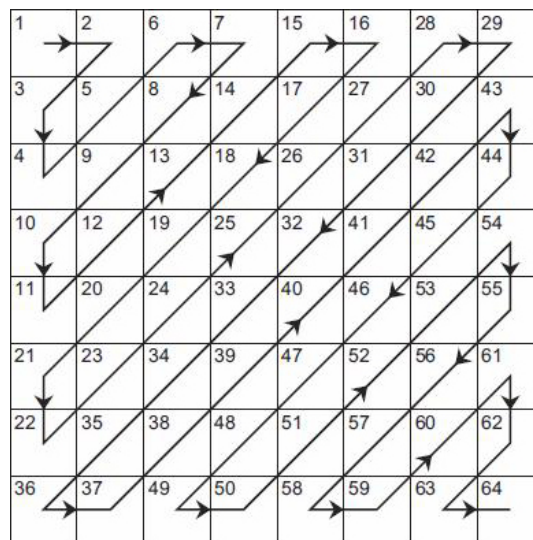
Write a function that takes an integer as argument, and returns the generated Zigzag matrix. You should allocate yourself a one-dimensional array.

The prototype of the function to write is the following:

```
int *zigzag(size_t n);
```

- You should return a NULL value if the given integer is zero.

- We ask you to make a 0 index-based matrix, consequently, your Zigzag matrix should begin with the number 0 and not 1.

1.2 Example

Here is the result of the provided `zigzag-example.c`.

```
42sh$ gcc -Wall -Wextra -Werror -std=c99 -pedantic -o zigzag
zigzag.c zigzag-example.c
42sh$ ./zigzag | cat -e
zigzag of size 3:$
    0   1   5$
    2   4   6$
    3   7   8$
zigzag of size 5:$
    0   1   5   6  14$
    2   4   7  13  15$
    3   8  12  16  21$
    9  11  17  20  22$
   10  18  19  23  24$
```

It is my job to make sure you do yours.