B4 - Synthesis Pool

The Empire Strikes Back (or do they?)

How to conquer Gaul

The Empire Strikes Ba

binary name: empire
language: C
compilation: via Makefile, including re, clean and fclean rules

> - The totality of your source files, except all useless files (binary, temp files, obj files,...), must be included in your delivery.
>
> - All the bonus files (including a potential specific Makefile) should be in a directory named *bonus*.
>
> - Error messages have to be written on the error output, and the program should then exit with the 84 error code (0 if there is no error).

Context

A group of romans are dedicating themselves to a new project: conquer the last Gallic village resisting the roman empire. You know, the one village defended by, among others, Asterix and Obelix.

To do so, they are going to gather around a table to think about it (and eat... because well... they don't want to starve).

> You MUST use the given library to monitor the project., which means you must not print anything on the standard output.
> Only the refered library is allowed to print a final report.

{ EPITECH. }

PROJECT

The project must respond to the following requirements:

- *N* romans are around one table (*N* is defined on the command line)

- Each roman has one dish in front of him

- There is a fork to the left of each dish

- A roman can only use a fork if it is to the left or right of his dish

- A roman goes through three states:

    - **eat** with two forks. One left and one right.
    - **rest**, does not use either forks, even if one is available.
    - **think**, uses one and only one fork.

There are a few more rules to guarantee better digestion.
It is really important for them to be healthy and to assimilate the dish's nutrients!

- A roman who thinks must eat before resting (obviously, to get his energy back).
- After resting, a roman can either eat or think.
- The **think** and **eat** states takes between 300 and 400 milliseconds.
- You don't always think and eat for the same amount of time.
- A fork cannot be used by two romans at the same time. For hygienic reasons.

Each roman is independent from the other, they run in separate thread and don't know the states of the others.

```
▽                                  Terminal                              −  +  X
~/B-SYN-400> ./empire --help
USAGE
      ./empire -p nbr_p -e nbr_e


                     -p nbr_p            number of romans
DESCRIPTION          -e nbr_e            maximum number times a roman eats before
                     exiting the program
```

> The program ends once each roman has eaten for the maximum number of times. The program should always end normally if given enough time.