E02

A new type is defined by means of `typedef`: the `condition_t` struct contains a `lock`, two condition variables (`notempty` and `notfull`) and a `count` variable.

The `sema_init()` function simply initializes all the fields in this structure and it is called at the beginning of the main thread.

The `sema_wait()` and `sema_post()` functions are used to guarantee syncronization between the producer and the consumer. One of the parameters is a `char` which is used to discern whether the conditional variable to be used is `notempty` or `notfull` – and if the count variable must be different from `0` or `BUFFER_SIZE`.