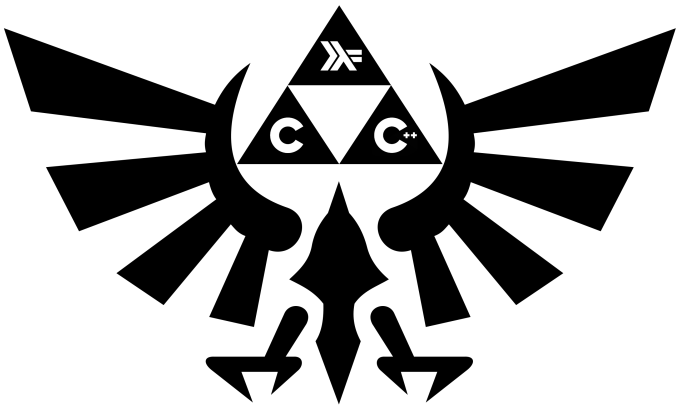
B3 - Paradigms Seminar

B-PDG-300

Rush 1

Pushswap-checker



1.0

EPITECH.

Rush 1

binary name: pushswap_checker
language: haskell
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*.

The goal of this rush is to produce a program capable to check if a sequence of push_swap operations effectively sorts a list of integers.

Invocation

Your program will take a list of signed integers on the command line, and read a single line of operations separated by spaces from the standard input.

Your program will display "OK" on the standard output (followed by a newline) if the final result is a sorted list (and the second empty), or "KO" otherwise.

If the result is negative, you are free to display additionnal informations after the "KO" string.
In case of inadequate input, your program will return 84. Otherwise, it will return 0.

Examples:

Terminal

```
~/B-PDG-300> echo "sa pb pb pb sa pa pa pa" | ./pushswap_checker 2 1 3 6 5 8
OK
~/B-PDG-300> echo "sa pb pb pb" | ./pushswap_checker 2 1 3 6 5 8
KO: ([6,5,8],[3,2,1])
```

Reminder

The game is made up of two lists of numbers named l_a and l_b.
In the beginning, l_b will be empty and l_a will contain a certain amount of positive or negative numbers.
The objective of the game is to sort l_a.

In order to accomplish this, you will only have access to the following operation:

- sa
  swap the first two elements of l_a (nothing will happen if there aren't enough elements).
- sb
  swap the first two elements of l_b (nothing will happen if there aren't enough elements).
- sc
  sa and sb at the same time.
- pa
  take the first element from l_b and move it to the first position on the l_a list (nothing will happen if l_b is empty).
- pb
  take the first element from l_a and move it to the first position on the l_b list (nothing will happen if l_a is empty).
- ra
  rotate l_a toward the beginning, the first element will become the last.
- rb
  rotate l_b toward the beginning, the first element will become the last.
- rr
  ra and rb at the same time.
- rra
  rotate l_a toward the end, the last element will become the first.
- rrb
  rotate l_b toward the end, the last element will become the first.
- rrr
  rra and rrb at the same time.

Bonus

As a bonus, you could make a real pushswap in haskell, and see how it compares with your C version…