



W2 - Algorithmmy

W-ALG-502

Push swap

Introduction to the concepts of algorithms in PHP

Push swap

binary name: push_swap.php
language: PHP



- The totality of your source files, except all useless files (binary, temp files, obj files,...), must be included in your delivery.

ADMINISTRATIVE DETAILS

YOU **CAN** implement bonuses, they must be located in a subfolder called 'Bonus'. The program **MUST** run correctly without bonuses.



Your render file should be named **push_swap.php** and be at the root of your repository.



SUBJECT

- The program is made up of two named lists of numbers *there* and *lb*.
- You need to create a program in which *there* is given as a parameter (all data is valid and does not need to be checked).
- The program must display the series of operations that allow you to sort this list.
- At the beginning, *lb* is empty, and *there* must contain a certain number of positive or negative numbers.
- The objective of the program is to sort *there* in ascending order (from smallest to largest).
- To do this, you will only need to use the following operations (**you don't necessarily need to use them all**):
 - **her**: exchanges the positions of the first two elements of *there* (nothing happens if there are not enough elements).
 - **sb**: exchanges the positions of the first two elements of *lb* (nothing happens if there are not enough elements).
 - **sc:herAndsb** at the same time.
 - **pa**: takes the first element of *lb* and places it in the first position of *there* (nothing happens if *lb* is empty).
 - **pb**: takes the first element of *there* and places it in the first position of *lb* (nothing happens if *there* is empty).
 - **ra**: rotates *there* towards the beginning (the first element becomes the last).
 - **rb**: rotates *lb* towards the beginning (the first element becomes the last).
 - **rr:raAndrb** at the same time.
 - **rra**: rotates *there* towards the end (the last element becomes the first).
 - **rrb**: rotates *lb* towards the end (the last element becomes the first).
 - **rrr:rraAndrrb** at the same time.



Operations must be displayed with a space, no space at the beginning or end, with a newline.



The display of your program should look identical to the example below.

```
Terminal
~/W-ALG-502>php push_swap.php 2 1 3 6 5 7 | cat -e sa pb
pb pb sa pa pa pa$
~/W-ALG-502>php push_swap.php 73 79 83 89 97 | cat -e $
~/W-ALG-502>php push_swap.php 1789 | cat -e $
~/W-ALG-502>
```



BONUSES



You can add bonuses like displaying the status of *there* And *lb* after each step, or add pretty colors or animations.

EXAMPLES

Considering the list *there* composed of the numbers: 2, 1, 3, 6, 5, 8. Here is a suggested operation to sort the list.

- **her**

- *there*123658
- *lb*

- **pb pb pb**

- *there*658
- *lb*321

- **ra rb**(or simply **rr**)

- *there*586
- *lb*213

- **rra rrb**(or simply **rrr**)

- *there*658
- *lb*321

- **her**

- *there*568
- *lb*321

- **pa pa pa**

- *there*123568
- *lb*