



# B1- Unix and C Lab Seminar

B-CPE-100

Day 04

Pointers

v2.0





# Day 04

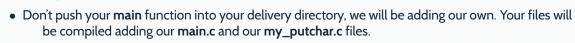
#### Pointers

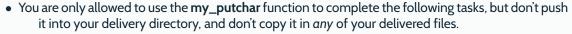
repository name: CPool\_DayO4\_\$ACADEMICYEAR

repository rights: ramassage-tek

language: C group size: 1

• Your repository must contain the totality of your source files, but no useless files (binary, temp files, obj files,...).





• If one of your files prevents you from compiling with \* .c, the Autograder will not be able to correct your work and you will receive a O.



Create your repository at the beginning of the day and submit your work on a regular basis! The delivery directory is specified within the instructions for each task. In order to keep your repository clean, pay attention to gitignore.



# Task 01

#### my\_swap

Write a function that swaps the content of two integers, whose addresses are given as a parameter. It must be prototyped as follows:

void my\_swap(int \*a, int \*b);

**Delivery:** CPool\_DayO4\_\$ACADEMICYEAR/my\_swap.c

# Task 02

## my\_putstr

Write a function that displays, one-by-one, the characters of a string.

The address of the string's first character will be found in the pointer passed as a parameter to the function, which must be prototyped as follows:

int my\_putstr(char const \*str);

Delivery: CPool\_DayO4\_\$ACADEMICYEAR/my\_putstr.c



## Task 03

## my\_strlen

Write a function that counts and returns the number of characters found in the string passed as parameter. It must be prototyped as follows:

```
int my_strlen(char const *str);
```

**Delivery:** CPool\_DayO4\_\$ACADEMICYEAR/my\_strlen.c

## Task 04

## my\_evil\_str

The goal of this task is to swap each of the string's characters, two by two. In other words, you will swap the first letter with the last one, the second with the second-to-last and so on. The function should return a pointer to the first character of the reversed string:

```
char *my_evil_str(char *str);
```

Delivery: CPool\_DayO4\_\$ACADEMICYEAR/my\_evil\_str.c

#### For instance:

```
a => a

ab => ba

abc => cba

abcd => dcba

abcde => edcba

abcdef => fedcba
```



When testing your function you may encounter "Segmentation fault" errors. Either you're messing with the pointers in your function or the string given in parameter is read-only!



Easy way to have read/write string for testing purpose: man 3 strdup





## **Unit Test**

#### WRITE THEM!

If you haven't covered all the possible case of the previous functions with unit test, it is really time to do so!



A good habit is to practice what is called Test Driven Development, you can read more about it here.

## Task 05

## my\_getnbr

Write a function that returns a number, sent to the function as a string. It must be prototyped as follows:

```
int my_getnbr(char const *str);
```

Delivery: CPool\_DayO4\_\$ACADEMICYEAR/my\_getnbr.c

Here are some tricky examples to be handled:

## Task 06

#### my\_sort\_int\_array

Write a function that sorts an integer array in ascending order, given a pointer to the first element of the array and its size.

```
void my_sort_int_array(int *array, int size);
```

Delivery: CPool\_DayO4\_\$ACADEMICYEAR/my\_sort\_int\_array.c

