

C Piscine C 07

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Summary: This document is the subject for the module C 07 of the C Piscine @ 42.

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#### Chapter I

#### Instructions

- Only this page will serve as reference: do not trust rumors.
- Watch out! This document could potentially change before submission.
- Make sure you have the appropriate permissions on your files and directories.
- You have to follow the submission procedures for all your exercises.
- Your exercises will be checked and graded by your fellow classmates.
- On top of that, your exercises will be checked and graded by a program called Moulinette.
- Moulinette is very meticulous and strict in its evaluation of your work. It is entirely automated and there is no way to negotiate with it. So if you want to avoid bad surprises, be as thorough as possible.
- Moulinette is not very open-minded. It won't try and understand your code if it doesn't respect the Norm. Moulinette relies on a program called norminette to check if your files respect the norm. TL;DR: it would be idiotic to submit a piece of work that doesn't pass norminette's check.
- These exercises are carefully laid out by order of difficulty from easiest to hardest. We will not take into account a successfully completed harder exercise if an easier one is not perfectly functional.
- Using a forbidden function is considered cheating. Cheaters get -42, and this grade is non-negotiable.
- You'll only have to submit a main() function if we ask for a program.
- Moulinette compiles with these flags: -Wall -Wextra -Werror, and uses gcc.
- If your program doesn't compile, you'll get 0.
- You <u>cannot</u> leave <u>any</u> additional file in your directory than those specified in the subject.
- Got a question? Ask your peer on the right. Otherwise, try your peer on the left.

- $\bullet$  Your reference guide is called Google / man / the Internet / ....
- Check out the "C Piscine" part of the forum on the intranet, or the slack Piscine.
- Examine the examples thoroughly. They could very well call for details that are not explicitly mentioned in the subject...
- By Odin, by Thor! Use your brain!!!



Norminette must be launched with the  $\mbox{-R CheckForbiddenSourceHeader}$  flag. Moulinette will use it too.

#### Chapter II

#### Foreword

Morty: Rick!

Rick: Uhp-uhp-uhp! Morty, keep your hands off your ding-dong! It's the only way we can speak freely. Look around you, Morty. Do you really think this wuh-world is real? You'd have to be an idiot not to notice all the sloppy details. Look, that guy's putting a bun between two hot dogs.

Morty: I dunno, Rick, I mean, I've seen people do that before.

Rick: Well, look at that old lady. She's-she's walking a cat on a leash.

Morty: Uh, Mrs. Spencer does that all the time, Rick.

Rick: Look, I-I-I don't want to hear about Mrs. Spencer, Morty! She's an idiot! All right, all right, there. Wh-what about that, Morty?

Morty: Okay, okay, you got me on that one.

Rick: Oh, really, Morty? Are you sure you haven't seen that somewhere in real life before?

Morty: No, no, I haven't seen that. I mean, why would a Pop-Tart want to live inside a toaster, Rick? I mean, th-that would be like the scariest place for them to live. Y'know what I mean?

Rick: You're missing the point, Morty. Why would he drive a smaller toaster with wheels? I mean, does your car look like a smaller version of your house? No.

Morty: So, why are they doing this? W-what do they want?

Rick: Well, that would be obvious to you, Morty, if you'd been paying attention. [an ambulance drives past Rick and Morty and stops; open back doors]

Paramedic: We got the President of the United States in here! We need 10cc of concentrated dark matter, stat, or he'll die!

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Morty: Concentrated dark matter? They were asking about that in class.

Rick: Yeah, it's a special fuel I invented to travel through space faster than anybody else. These Zigerions are always trying to scam me out of my secrets, but they made a big mistake this time, Morty. They dragged you into this. Now they're gonna pay!

Morty: What do you- w-w-what are we gonna do?

Rick: We're gonna scam the scammers, Morty. And we're gonna take 'em for everything they've got.

The following exercices will be easier to complete if you are a fan of "Rick and Morty"

## Chapter III

Exercise 00: ft\_strdup

Exercise	00
ft_strd	up
Turn-in directory : $ex00/$	
Files to turn in : ft_strdup.c	
Allowed functions : malloc	

- Reproduce the behavior of the function strdup (man strdup).
- Here's how it should be prototyped :

char \*ft\_strdup(char \*src);

### Chapter IV

### Exercise 01: ft\_range

	Exercise 01	
/	ft_range	
Turn-in directory : $ex01/$		
Files to turn in : ft_rang		
Allowed functions: mall		

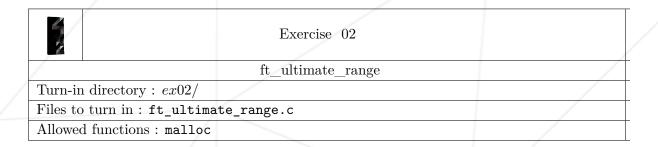
- Create a function ft\_range which returns an array of ints. This int array should contain all values between min and max.
- Min included max excluded.
- Here's how it should be prototyped :

```
int *ft_range(int min, int max);
```

• If minvalue is greater or equal to max's value, a null pointer should be returned.

#### Chapter V

## Exercise 02: ft\_ultimate\_range



- Create a function ft\_ultimate\_range which allocates and assigns an array of ints. This int array should contain all values between min and max.
- Min included max excluded.
- Here's how it should be prototyped :

```
int ft_ultimate_range(int **range, int min, int max);
```

- The size of range should be returned (or -1 on error).
- If the value of min is greater or equal to max's value, range will point on NULL and it should return 0.

### Chapter VI

# Exercice 03: ft\_strjoin

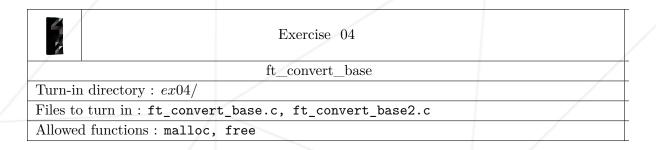
	Exercise 03	
/	ft_strjoin	
Turn-in directory : ex	:03/	
Files to turn in: ft_strjoin.c		
Allowed functions: m	alloc	

- Write a function that will concatenate all the strings pointed by strs separated by sep.
- size is the number of strings in strs
- if size is 0, it should a freeable empty string.
- Here's how it should be prototyped :

char \*ft\_strjoin(int size, char \*\*strs, char \*sep);

#### Chapter VII

#### Exercise 04: ft\_convert\_base

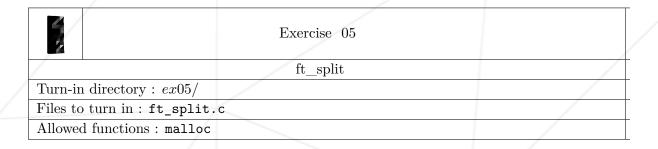


- Create a function that returns the result of the conversion of the string nbr from a base base\_from to a base base\_to.
- nbr, base\_from, base\_to may be not writable.
- nbr will follow the same rules as ft\_atoi\_base (from an other module). Beware of '+', '-' and whitespaces.
- The number represented by nbr must fit inside an int.
- If a base is wrong, NULL should be returned.
- The returned number must be prefix only by a single and uniq '-' if necessary, no whitespaces, no '+'.
- Here's how it should be prototyped:

char \*ft\_convert\_base(char \*nbr, char \*base\_from, char \*base\_to);

#### Chapter VIII

Exercise 05: ft\_split



- Create a function that splits a string of character depending on another string of characters.
- You'll have to use each character from the string charset as a separator.
- The function returns an array where each element of the array contains the address of a string wrapped between two separators. The last element of that array should equal to 0 to indicate the end of the array.
- There cannot be any empty strings in your array. Get your own conclusions accordingly.
- The string given as argument won't be modifiable.
- Here's how it should be prototyped :

char \*\*ft\_split(char \*str, char \*charset);