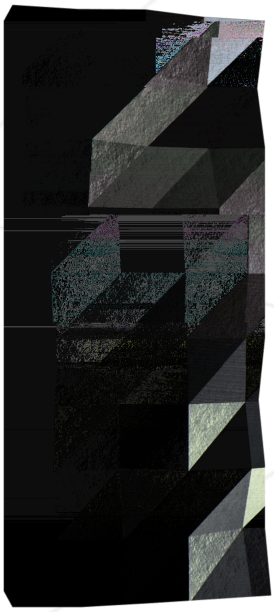

C Piscine

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 cannot leave any 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.

- 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 -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!

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_strdup	
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_range.c`	
Allowed functions : `malloc`	

- 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 `min`́value is greater or equal to `max`'s value, a null pointer should be returned.

Chapter V

Exercise 02 : ft_ultimate_range

	Exercise 02
ft_ultimate_range	
Turn-in directory : $ex02/$	
Files to turn in : ft_ultimate_range.c	
Allowed functions : malloc	

- 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 : $ex03/$	
Files to turn in : `ft_strjoin.c`	
Allowed functions : `malloc`	

- 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

	Exercise 04
ft_convert_base	
Turn-in directory : $ex04/$	
Files to turn in : ft_convert_base.c, ft_convert_base2.c	
Allowed functions : malloc, free	

- 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

	Exercise 05
ft_split	
Turn-in directory : $ex05/$	
Files to turn in : `ft_split.c`	
Allowed functions : `malloc`	

- 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);
```