C Piscine

C 04

Summary: this document is the subject for the unit C 04 of the C Piscine @ 42.

Contents

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 chea G/i4s2ti1o7(elraded)-326(wi326(as)-327(on)-326(y)27feto)-326(folltia

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- 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

Here are the lyrics for City Hunter's theme song "Moonlight Shadow":

The last time ever she saw him
Carried away by a moonlight shadow
He passed on worried and warning
Carried away by a moonlight shadow.
Lost in a riddle that Saturday night
Far away on the other side.
He was caught in the middle of a desperate fight
And she couldn't find how to push through

The trees that whisper in the evening
Carried away by a moonlight shadow
Sing a song of sorrow and grieving
Carried away by a moonlight shadow
All she saw was a silhouette of a gun
Far away on the other side.
He was shot six times by a man on the run
And she couldn't find how to push through

[Chorus]
I stay, I pray
See you in Heaven far away...
I stay, I pray
See you in Heaven one day.

Four A.M. in the morning
Carried away by a moonlight shadow
I watched your vision forming
Carried away by a moonlight shadow
A star was glowing in the silvery night
Far away on the other side
Will you come to talk to me this night
But she couldn't find how to push through

[Chorus]

Far away on the other side.
Caught in the middle of a hundred and five
The night was heavy and the air was alive
But she couldn't find how to push through
Carried away by a moonlight shadow
Carried away by a moonlight shadow
Far away on the other side.

   Unfortunately, this topic has nothing to do with City Hunter.

Chapter III

Exercise 00 : ft_strlen

	Exercise 00
	ft_strlen
Turn-in directory : *ex*00/	
Files to turn in : `ft_strlen.c`	
Allowed functions : `None`	

- Create a function that counts and returns the number of characters in a string.

- Here's how it should be prototyped :

```
int   ft_strlen(char *str);
```

Chapter IV

Exercise 01 : ft__putstr

	Exercise 01
	ft__putstr
Turn-in directory : *ex*01/	
Files to turn in : `ft_putstr.c`	
Allowed functions : `write`	

- Create a function that displays a string of characters on the standard output.

- Here's how it should be prototyped :

```
void    ft_putstr(char *str);
```

Chapter V

Exercise 02 : ft_putnbr

	Exercise 02
	ft_putnbr
Turn-in directory : *ex02/*	
Files to turn in : `ft_putnbr.c`	
Allowed functions : `write`	

- Create a function that displays the number entered as a parameter. The function has to be able to display all possible values within an int type variable.

- Here's how it should be prototyped :

```
void ft_putnbr(int nb);
```

- For example:

    ft_putnbr(42) displays "42".

Chapter VI

Exercise 03 : ft_atoi

	Exercise 03
	ft_atoi
Turn-in directory : *ex03/*	
Files to turn in : `ft_atoi.c`	
Allowed functions : `None`	

- Write a function that converts the initial portion of the string pointed by str to its int representation

- The string can start with an arbitray amount of white space (as determined by `isspace(3)`)

- The string can be followed by an arbitrary amount of + and - signs, - sign will change the sign of the int returned based on the number of - is odd or even.

- Finally the string can be followed by any numbers of the base 10.

- Your function should read the string until the string stop following the rules and return the number found until now.

- You should not take care of overflow or underflow. result can be undefined in that case.

- Here's an example of a program that prints the atoi return value:

```
$>./a.out "   ---+--+1234ab567"
-1234
```

- Here's how it should be prototyped :

```
int     ft_atoi(char *str);
```

Chapter VII

Exercise 04 : ft_putnbr_base

	Exercise 04
	ft_putnbr_base
Turn-in directory : *ex*04/	
Files to turn in : `ft_putnbr_base.c`	
Allowed functions : `write`	

- Create a function that displays a number in a base system in the terminal.

- This number is given in the shape of an `int`, and the radix in the shape of a `string` of `characters`.

- The base-system contains all useable symbols to display that number :

    0123456789 is the commonly used base system to represent decimal numbers

    01 is a binary base system ;

    0123456789ABCDEF an hexadecimal base system ;

    poneyvif is an octal base system.

- The function must handle negative numbers.

- If there's an invalid argument, nothing should be displayed. Examples of invalid arguments :

    base is empty or size of 1;

    base contains the same character twice ;

    base contains + or - ;

- Here's how it should be prototyped :

```
void        ft_putnbr_base(int nbr, char *base);
```

Chapter VIII

Exercise 05 : ft_atoi_base

	Exercise 05
	ft_atoi_base
Turn-in directory : *ex05/*	
Files to turn in : `ft_atoi_base.c`	
Allowed functions : `None`	

- Write a function that converts the initial portion of the string pointed by str to int representation.

- str is in a specific base given as a second parameter.

- excepted the base rule, the function should work exactly like ft_atoi.

- If there's an invalid argument, the function should return 0. Examples of invalid arguments :

    base is empty or size of 1;

    base contains the same character twice ;

    base contains + or - or whitespaces;

- Here's how it should be prototyped :

```
int        ft_atoi_base(char *str, char *base);
```