

MiniC

Deadline: September 5th, 2014

1 Instructions

1. Read and study the C coding standard that accompanies the course.
2. Teach yourself the basics of the Unix environment, if necessary using the tutorial linked in [References](#) below.
3. Do the programming assignment described below.

2 Programming assignment

The teaching goal of this assignment is to get used to the C programming environment and learn the basic of how libraries work. What you must do, in a nutshell:

- implement `my_strlen` and `my_strcmp`;
- implement a test program that uses these two functions;
- create a `Makefile` containing rules to build a library containing the two functions, and the test program.

2.1 The two functions

You must implement the following two functions:

```
unsigned long my_strlen(const char *s);
int my_strcmp(const char *s1, const char *s2);
```

- `my_strlen` must behave like the function `strlen` from the standard C library. See `strlen(3)` for details.
- `my_strcmp` must behave like the function `strcmp` from the standard C library. See `strcmp(3)` for details.
- `my_strlen` must be implemented in a file named `my_strlen.c`.
- `my_strcmp` must be implemented in a file named `my_strcmp.c`.

- the two function prototypes must be declared in a `.h` file, in accordance with the C coding standard.
- you must not include any system header in your code.
- you must not use any function from the C standard library in your code.

2.2 The test program

You must implement a program which takes either one or two arguments on the command line:

- if one argument is provided, it must return its length as exit code.
- if two arguments are provided, it must return the result of their comparison as exit code.

The program must be implemented in a file named `test.c`. Again, you must not include any standard/system header nor use any function from the standard C library.

2.3 The `Makefile`

Your `Makefile` must contain rules to build:

- `libminic.a`, a static library containing the two functions;
- `test`, the test program, linking with `-lminic`.

Ensure that your `Makefile` also follows the section “Build rules” in the C coding standard.

3 Grading

- 8 if you have implemented `my_strlen`, `my_strcmp` and the test program as instructed and the implementation is correct.
- 10 if you have completed all the programming assignment successfully.
- 1 otherwise.

4 References

- The C coding standard provided with the course.
- The online Unix manual; `man(1)`. http://en.wikipedia.org/wiki/Man_page
- Raphael Poss. Tutorial “Introductie Unix”, University of Amsterdam. <http://staff.science.uva.nl/~poss/intro-unix.html>
- Carols Fenollosa. Unix Tricks. <http://cfenollosa.com/misc/tricks.txt>

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