Exercise „Programming Erlang“

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Exercise 1 (0 Points) Install the Erlang development environment on your computer and make sure that it is running correctly. Visit `http://erlang.org/` for instructions. Note that Erlang does not come with an IDE but you may find a plug-in for Eclipse or you may use the Emacs text editor.

Hint: Users of the Debian, Ubuntu and Fedora Linux distributions may find prebuilt and preconfigured packages in their software repositories. It is a good idea to install these.

Exercise 2 (2 Points) Write a small program that prints "hello world" to the screen. Document how to compile and how to execute the program.

Exercise 3 (4 Points) Implement the Fibonacci function in Erlang. The Fibonacci function is defined by the recurrence

$$\begin{aligned} f(0) &= 1 \\ f(1) &= 1 \\ f(n) &= f(n-2) + f(n-1) \text{ if } n > 1. \end{aligned}$$

Write one version that is based on this recurrence and another version that is *tail-recursive*.

Exercise 4 (8 Points) Write a small evaluation function that takes a string representing an expression and returns the value. You will need to write a small parser.

For example, the result of `eval("2")` shall be `2`, The result of `2+5*8` shall be `42`.

Document your implementation.