

CS_191 Functional Programming I

Programming Laboratory 1

Getting started

In this Programming Laboratory session the following tasks are to be completed (you may work in pairs):

- Login at one of the Linux machines.
- Open a command tool (terminal). All commands typed in the command tool are completed by pressing the return key.
- Create a directory named `fp1`:

```
mkdir fp1
```
- Move into that directory:

```
cd fp1
```
- Start the editor emacs:

```
emacs &
```
- In emacs: Open a file named `lab1.hs`:

```
C-x-f lab1.hs
```

(`C-x-f` means pressing the control-key and typing `x f` while keeping the control key pressed). Alternatively, you may use a drop-down menu of emacs.
- Type in this file

```
-- 7-2-11 Lab 1 <your name(s) and student number(s)>
```



```
-- The hypotenuse of a rectangular triangle with catheti a, b:
```



```
hyp :: Float -> Float -> Float  
hyp a b = sqrt (a^2 + b^2)
```
- Save your file:

```
C-x-s
```

Alternatively, you may use a drop-down menu of emacs.
- Start interactive Haskell by typing in the command tool

```
ghci
```
- Type an expression and evaluate it (for example `3+4`).

- Load your file:
`:l lab1.hs`
- Test the function `hyp` you defined in `lab1.hs` by typing
`hyp 4 5`
- Type `:?` to see what commands are available in `ghci`.
- Solve the Exercises below, writing your solutions in the file `lab1.hs`.
- Use comments (starting with `--` to give extra information on your solution (for example, Exercise No., test results).
- When you completed the exercises, show them to a lab supervisor to get them signed off.
Don't leave the lab without having your solutions signed off!
- Before leaving, logout.

More information on how to use Linux, emacs and ghci can be found on the course web page.

Ask the lab supervisors if you need more help.

Exercises

Exercise 1 Define a function `av3` that computes the average of 3 floating point numbers.

Exercise 2 Define a function `artri` that computes the area of a rectangular triangle with catheti a , b .