Programming Paradigms 2022
Session 2 : First steps in Haskell

Preparing for the session

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12 September 2023

Where nothing else is mentioned, chapters and page numbers refer to *Programming in Haskell*.

The video podcast

You can watch the podcast on YouTube via the course page on Moodle.

Tuesday 12 September 2023 – First steps in Haskell

The text is Chapters 1 and 2 of *Programming in Haskell*.

Learning goals for the session

The learning goals are

- To be able to explain the notion of a function in the functional programming paradigm in a precise way
- To be able to write simple definitions in Haskell
- To be able to edit, load and use Haskell programs
- To understand and be able to apply simple aspects of Haskell syntax: Definitions, comments, the layout rule and where declarations in definitions.

How you should prepare before we meet on Tuesday

Before we meet, watch the podcast and read the text. You can do this in any order you like.

Also see if you can solve the following two small discussion problems using only the functions mentioned in Chapters 1 and 2 of the book. We will talk about them in class.

1. Define a function product that multiplies the elements of a given list of numbers. If the list is empty, the product should be 0. You should to this by modifying a definition from Section 1.5.
2. Define a function second that will, when given a list, return the second element of the list if it exists. As examples of what this function should do, we expect that

   ```
   second [1,4,5,6]
   ```

   will give us 4, and that

   ```
   second ["some", "bizarre", "mango''"]
   ```

   will give us "bizarre". Show that your definition of second works for these examples of arguments. Then find two more examples of arguments and see what happens. Is your function a total function?

What happens on Tuesday?

When we meet, two students that have been contacted by me will present the solutions to the small discussion problems above.

Problems for Tuesday

For the plenary session we will solve and discuss a collection of problems that can be found on a separate page that will be available at the start of the session.