

# 5 - Datatypes and higher-order functions

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In this lesson, participants will explore higher-order functions by implementing a few common ones and about datatypes by creating their own to represent a person.

## Overview

### Learning objectives

By the end of the lesson, students will be able to:

- Implement the following higher-order functions: `filter` and `map`.
- Define new datatypes using the `data` keyword and implement functions operating on these datatypes.
- Explain the difference between data constructors and plain functions.
- Name the key ideas that underpin the `Functor` typeclass.

### Materials

To run this lesson, the following materials are necessary:

- The slides, available here: <https://www.computing-workshop.com/pdf/5-Datatypes-and-higher-order-fu.pdf>
- Each participant requires a computer with VirtualBox installed, and each participant needs to download and unzip the prepared virtual machine: <https://files.jerrington.me/arch.zip>. (This is the same virtual machine as in the previous lesson.)

### Instructional sequence

The instructional sequence for this lesson is outlined in the slides.