Errata for
Learn Physics with Functional Programming

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July 25, 2025

If a reader of the book knows of additional errors, please send them to me for inclusion in this list.

- p. 26: [discovered by Ransom Taylor, 2025 Jun 30] The third sentence of the second paragraph in the section *The Boolean Type* reads

  > Here *b* is an expression of type `Bool` called the *condition* is called the *consequent* is called the *alternative*.

  but should read

  > Here *b* is an expression of type Bool called the *condition*, *c* is called the *consequent*, and *a* is called the *alternative*.

- p. 161, Exercise 10.9: [discovered by Andrii Zymohliad, 2024 Jun 27] The expression for $\mathbf{v}_{\text{Ball}}(t)$ given at the beginning of the problem is incorrect. The correct expression is

$$\mathbf{v}_{\text{Ball}}(t) = \mathbf{v}_0 + \mathbf{g}t.$$

- p. 238, code, top of page: [discovered by Dan Farmer, 2024 Aug 7] The drag coefficient, which is the number immediately after `fAir`, should be 2 rather than 1. The correct code is as follows.

```
pedalCoastAir2 :: Time -> Velocity
pedalCoastAir2 = velocityFtv 0.1 20 (0,0)
                 [\( t,_v) -> pedalCoast t
                 ,\(_t, v) -> fAir 2 1.225 0.5 v]
```

- p. 258, code, bottom of page: [discovered by Giulio Morpurgo, 2025 Jan 8] We are calculating a `Position`, not a `Velocity` here, so the return type should be `Position` rather than `Velocity`. The correct code is as follows.

```
pingpongPosition :: Time -> Position
pingpongPosition = positionFtxv 0.001 0.0027 (0,0.1,0) dampedHOForces
```

- p. 427, code, top of page: [discovered by Giulio Morpurgo, 2025 Feb 26] The function (`@@`) was erroneously omitted from the list of imports from the `Diagrams.Prelude` module. The error is in line 10 of the code on page 427. Code lines 8–11 on page 427 should read as follows.

```
import Diagrams.Prelude
    ( Diagram, V2(..), PolyType(..), PolyOrientation(..), PolygonOpts(..)
    , (#), (@@), dims, p2, r2, arrowAt, position, fc, black, white
    , blend, none, lw, rotate, deg, rad, scale, polygon, sinA )
```

- p. 578, penultimate paragraph:

    The effectful functions we've written ... are not really part
    of the "elegant code" promised in this book's subtitle.

This sentence refers to an earlier version of the subtitle, "Beautiful Ideas Deserve Elegant Code". While I believe very much in the sentiment expressed in that earlier subtitle, we decided to use a longer subtitle that clarified the role of Haskell. The sentence should read

    The effectful functions we've written, those like `gradientVectorPNG`
    with `IO ()` in their type that *do* something, are certainly use-
    ful for producing graphs and animations, but they are not
    the best examples of the power of a functional language for
    physics.

- p. 582: The web address for gnuplot is misspelled. The correct address is `gnuplot.info`, not `gnuplut.info`. The pdf version of the book links to the correct web page.

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