Introduction to Functors

Functors

We already know how to apply functions:

```
λ> (+3) 2              👉    5
```

But...

```
λ> (+3) (Just 2)                    ❌
```

In this case, we can use `fmap`!

```
λ> fmap (+3) (Just 2)     👉    Just 5
λ> fmap (+3) Nothing      👉    Nothing
```

And it also works with `Either`, lists, tuples and functions:

```
λ> fmap (+3) (Right 2)       👉    Right 5
λ> fmap (+3) (Left "error")  👉      Left "error"

λ> fmap (+3) [1, 2, 3]       👉    [4, 5, 6]      -- same as map

λ> fmap (+3) (1, 6)          👉    (1, 9)         -- because (,) is a type

λ> (fmap (*2) (+1)) 3        👉    8              -- same as (.)
```